Feasibility Study Report for the Implementation of a Truck Enforcement Network System for Gateway Cities & Surrounding Regions

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SUBMITTED TO: Los Angeles Metropolitan Transportation Authority & Gateway Cities Council of Governments

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Metro
Feasibility Study Report for the Implementation of a Truck Enforcement Network System (TENS) for Gateway Cities and Surrounding Areas

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<table>
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<th>Description</th>
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<tbody>
<tr>
<td>Caltrans</td>
<td>California Department of Transportation</td>
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<tr>
<td>CHP</td>
<td>California Highway Patrol</td>
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<tr>
<td>CVISN</td>
<td>Commercial Vehicle Information System and Networks</td>
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<tr>
<td>DOT</td>
<td>Department of Transportation</td>
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<tr>
<td>FHWA</td>
<td>Federal Highway Administration</td>
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<tr>
<td>GCCOG</td>
<td>Gateway Cities Council of Governments</td>
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<tr>
<td>ITS</td>
<td>Intelligent Transportations Systems</td>
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<tr>
<td>MTA</td>
<td>Metropolitan Transportation Authority</td>
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<tr>
<td>OCR</td>
<td>Optical Character Recognition</td>
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<tr>
<td>POLA</td>
<td>Port of Los Angeles</td>
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<tr>
<td>POLB</td>
<td>Port of Long Beach</td>
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<tr>
<td>TEF</td>
<td>Truck Enforcement Facilities</td>
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<td>TENS</td>
<td>Truck Enforcement Network System</td>
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<tr>
<td>VWIM</td>
<td>Virtual Weigh-In-Motion</td>
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<tr>
<td>VS³</td>
<td>Virtual Screen/Sort Sites</td>
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<tr>
<td>WIM</td>
<td>Weigh-in-Motion</td>
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Executive Summary

The Los Angeles County Metropolitan Transportation Authority (MTA), in conjunction with Gateway Cities Council of Governments (GCCOG), set forth this feasibility study in June of 2011 to investigate the potential for truck inspection facilities in and throughout the Gateway Cities subarea. Gateway Cities is positioned in Southern California within Southeast Los Angeles County. The southern portion of this area includes the two ports of Long Beach and Los Angeles in the San Pedro Bay Harbor. Jointly these two ports make up the largest throughput port facilities in the nation and fifth largest throughput in the world. These two ports process tens of thousands of truck trips per day. It is projected that this will triple in the next 20 to 25 years as container volumes continue to increase over time. A percentage of these trucks and freight is overweight or has some other safety issues that cause damage to the roadway system throughout the subregion at a high expense to the local taxpayers. Gateway Cities is a highly urbanized area with truck volumes and concentration that are the highest in the nation. The existing approximately 40,000 truck trips per day that service the two ports are expected to grow to about 120,000 truck trips per day in the future (plus additional “regular” truck trips in Southeast Los Angeles County).

The only other mode of transportation for goods in and out of these Ports is by rail. The current rail system that traverses these trains is through the Alameda Corridor that will reach capacity when container volumes triple at the two ports by 2035.

At present, there are no permanent truck inspection facilities operating in the Gateway Cities. Consequently, existing truck enforcement is minimal at this time. Truck enforcement is currently performed mostly "on-road" by CHP and local police officers using mobile weigh scales. This results in very few inspections. Typically, truck inspection facilities are built by the California Department of Transportation (Caltrans) and operated by the California Highway Patrol (CHP). These truck inspection facilities enhance safety through truck inspections that generate safer trucks on the transportation system and less wear and tear on the roadway and bridge infrastructures.

The Gateway Cities Board adopted a series of safety initiatives seven years ago. These included the development of permanent truck enforcement facilities within the Gateway Cities. These facilities could be operated by CHP, as a leading force to improve the truck inspection and enforcement throughout the
Gateway Cities. The needs for permanent truck enforcement facilities has led to the planning and development of this feasibility study to investigate how these facilities might be developed within the Gateway Cities.

The primary stakeholders of CHP, Caltrans, and GCCOG are in agreement that permanent truck enforcement facilities are needed in the Gateway Cities area. The only existing truck enforcement facilities in this area are on the I-405 (near its interchange with I-110) and in the City of Carson. These truck inspection facilities have been closed for years. CHP and Caltrans are currently looking into how these sites could be modified and reopened to handle the current and future truck volumes.

Stakeholders continue to be concerned with the increasing volume of trucks and the minimal enforcement of trucks in this area. There is consensus that the largest need for truck enforcement facilities is on the I-710 and I-405 freeways. There is also agreement for the need for truck enforcement facilities to be efficient and timely for the drivers, loads, and traveling public. Shippers and carriers of goods need the throughput rate of the transportation/enforcement system to keep up with demands of the consumers. The current ramp screening/sorting approach to enforcement at truck enforcement sites has a limited throughput rate of trucks, thereby creating a need to modify this approach given the large number of truck trips in Gateway Cities (now and in the future).

The purpose of this feasibility study was to find locations and conceptually develop permanent truck enforcement facilities and smart roadside screen/sort sites to process the large number of truck movements per day in the Gateway Cities area, and to explore an approach to truck enforcement that could be automated to maximize the effectiveness and efficiency of the inspection and enforcement operations. It is the intention that any permanent truck inspection facilities would be safe and not result in trucks backing up onto any adjacent freeways and city streets from these facilities. Automated functions that could allow sorting and evaluating of trucks away from any permanent truck inspection facilities, a new approach, would seem to be needed to safely process as many trucks as possible through an inspection, weighing and measuring environment.

Neither of the two ports, Gateway Cities, nor the surrounding areas are programmed for new truck enforcement facilities as per the 2011 Weigh Station Inventory of Needs Report, (attached Appendix B - developed by Caltrans and CHP) even though there are more truck trips per lane mile in the GCCOG area than anywhere else in the State of California. Also, the majority of these trucks are drayage trucks that typically do not leave the greater Gateway Cities area. They do not have the opportunity to be inspected elsewhere.

The study area has been in need of permanent high capacity Truck Enforcement Facilities (TEF) that will not adversely impact the safety and operations of the freeways near the two ports for years but also have the ability to inspect and
monitor the large volume of trucks. The CHP/Caltrans priorities list for new TEFs includes an enforcement facility on the I-710 NB and the priorities list for major upgrades includes the I-405 NB and SB. These TEFs must operate and function at a higher throughput rate than current approaches can handle. There is a need to better understand the volume of trucks serving this area, the behavior of the truck drivers, the frequency at which the trucks will process through screening/sorting environments on a daily or weekly basis, the ever changing truck configuration (tractor, chassis and load), and the duration of continuous service hours available to drivers servicing the two ports. There also is a need to understand from CHP/Caltrans how the current approach to truck enforcement can be modified to meet the present and future truck volume demands while maintaining the safety and operational effectiveness of the TEF.

Additionally, there is a need to realign the truck overweight fine structure to be proportional to the damages they produce to the roadway and bridges. Currently, as the magnitude of the overweight violations increases, the fines ($/#) for these violations decrease. In other words, it is cheaper to be heavily overweight per pound while the damage the wheels produce is considerably higher.

The seaports of Long Beach and Los Angeles are the source of the highest volume and concentration of truck trips in the nation. The best location for inspection is at or near the source of where these trucks will be leaving from and going to on a daily basis. There is no place to put a TEF within the Ports without hindering operational throughput and effectiveness of these ports. There is no available or affordable land near and around the ports to use as a TEF. The next preferred location for TEFs is on the highest truck volume freeways that serve these two ports. Those freeways are the I-710, I-110, and I-405. Both I-710 and I-110 serve the Ports directly, and I-405 secondarily serves the Ports by way of truck routes (freeways and arterial streets) between the Ports and I-405. There is available land adjacent to the existing I-405 weigh stations (near its interchange with I-110 that could be expanded. I-710 does not have available adjacent land with like kind usage south of the Del Amo Boulevard interchange. There are about 30 acres in the southwest quadrant of the I-710 and Del Amo Boulevard interchange currently used for industrial purposes that could be used for a TEF. Daily truck volumes on this segment of I-710 are high. If the I-710 freight Corridor is built there is also another potential site that could serve the NB I-710 Freight Corridor lanes between Del Amo Blvd and the I-405. This 6.5-acre site would service the I-710 NB Freight Corridor lanes and connect to the aforementioned 30-acre site via 208th Street on the west side of I-710. While placing a TEF on I-110 would be strategically sound and value-added, there is no available land. Gateway Cities staff have spent many years evaluating potential sites and working with local cities. The-abovementioned sites (I-405 and I-710) are the only potential sites that are thought to be developable for major facilities. There may be some smaller potential sites on I-710 north of Del Amo Blvd. One
of these potential sites, near the new Slauson Avenue interchange, is described herein.

The results of this feasibility study are:

1. Container volumes are expected to continue to increase at the two ports. This could result in truck volumes on the I-710 freeway in the future of approximately 90,000 truck trips per day (currently the freeway transports about 25,000 truck trips per day).

2. Gateway Cities is an urbanized area with many freeways and arterial highways traversing through it. This would allow truck drivers to “bypass” permanent truck inspection facilities. Therefore, automation and technology will need to be incorporated into permanent truck inspection facilities to address this issue (e.g., WIM or VWIM).

3. As the Gateway Cities subarea is highly urbanized, there are no sites that could be easily developed along the freeways near the ports. Nonetheless, after extensive review and research, four (4) potential sites (three on I-710 and one on I-405) were conceptually developed as permanent truck inspection sites. Section 6 contains aerial maps and layouts for these sites as permanent truck inspection facilities. The next phase of this process is to develop each of these sites to be cost effective and operationally feasible to meet the needs of CHP operations, Caltrans traffic concerns, and reduce the impacts to the cities.

4. A Truck Enforcement Network System (TENS) was also developed to help manage the inspection and enforcement for such a large numbers of trucks using technology along freeways and some arterial highways that service the Ports. This system is proposed to be constructed with permanent truck inspection facilities. This would consist of automating the potential permanent truck inspection facilities combined with a series of technologies placed on the freeway system primarily that could automatically monitor the license plates, USDOT #, inspection decals, transponders, weights of these large volume of trucks, etc. This TENS would allow automated screening/sorting of large amounts of trucks while minimizing disruptions to their operations, but providing permanent truck enforcement sites to process as many trucks as possible. Major issues associated with TENS include how to collect and use this information (for inspection, enforcement, compliance notifications, information or all). Also who collects and has use of this information needs to be resolved. Existing California codes, regulations and laws will likely have to be modified to make TENS effective, usable and enforceable, especially for CHP.
Conclusions and Recommendations

Based on these comments (and the report), the following conclusions were reached:

1. CHP priority is the construction of permanent truck inspection facilities along I-710. Further development of the sites shown in Section 6 will be required as a next step. Close coordination and cooperation with Caltrans and CHP in the next phase of the study will be needed.

2. Automation should continue to be pursued with coordination with both Caltrans and CHP. This includes the development of a Truck Enforcement Network System (TENS) for MTA/Gateway Cities as outlined herein. Each automation type or functionality will require an assessment in order to build this approach in an effective and acceptable approach to CHP and Caltrans.

3. Research needs to be conducted on the existing California Codes to identify any needs for modifications, omissions, or additions for TENS to perform at its potential effectiveness. This will include an evaluation of existing codes, laws and regulations and changes to them to make TENS effective and workable.

4. Traffic analyses and impact studies of all new or modified vehicular movements need to be conducted.

5. The development of an environmental report for evaluation of impacts, including potential mitigation that may be required.

6. Cost for the TENS will be developed and evaluated in the next phase of the study. Those conceptual costs will include right-of-way, construction, operations, and maintenance/repair cost. Also, the cost of a “no build” that includes the damages cost for not having any truck enforcement in the area.

7. Funding sources for the TENS will be evaluated in the next phase of the study. These funding sources may be public and/or private.
1.0 How this Project Integrates with the Overall ITS for Goods Movement Program

The common link between TENS and the other ITS for Goods Movement projects (systems) is real-time truck and freight data (collection and use). For most of these systems to be effective, they each require bidirectional information exchanged. Each of these systems will need to give and receive data in real time or near real time. It is this data-sharing between systems that will give each of these systems value to the other systems and to the overall transportation safety and effective movement of goods in the subarea. In part or in whole, all of these ITS for Goods Movement projects have a common focus to enhance safety and timeliness of the traveling public, and to increase efficiency of the freight that moves through the subarea. While the primary mission of the TENS is to increase truck and freight safety, it will also execute this by minimizing negative impacts on the flow of vehicles sharing the transportation system. The TENS will allow a larger percentage of safe trucks to bypass the truck enforcement facilities than the current approach to truck enforcement. The TENS will have a rich data set to share with other ITS for Goods Movement systems. A new approach and process will have to be developed for obtaining and using the information from TENS.
2.0 Background

The Ports of Los Angeles and Long Beach are located in Southern California in the southern end of the Gateway Cities. These two ports are the primary source of freight through the Gateway Cities subregion and beyond (and for the entire country). The Gateway Cities subregion (Figure 2.1) and the Ports of Los Angeles and Long Beach had a truck enforcement presence in the past in the form of two static scale weigh stations (with a single platform scale at each location) on I-405 in the City of Carson. These two weigh stations have been closed for several years. During this time, the only truck enforcement presence was in the way of mobile enforcement. This is an inefficient and ineffective approach to truck enforcement in an area that has the highest volume and concentration of trucks in the nation.

The Gateway Cities Council of Governments (GCCOG) realized the importance of truck safety in its area. In June of 2005, the GCCOG board passed a safety initiative that in part included the development of permanent truck enforcement facilities (TEFs) within the Gateway Cities subregion. The GCCOG then set forth to study the strategies and feasibility of implementing permanent TEFs near the two ports.
Figure 2.1 Map of Study Area
2.1 **HISTORY OF PROJECTS**

The June 2005 safety initiative passed by the GCCOG, which included the development of permanent TEFs within the Gateway Cities subregion, led to the following three studies:

1. **The Gateway Cities and Surrounding Areas Intelligent Transportation System (ITS) Strategies**

   The following are excerpts from this study:

   **ITS Mission Statement**

   To improve safety and mobility of people and goods on freeways and arterial highways; to enhance economic competitiveness; and to improve the quality of the environment of residents for today and in the future by using technology to address traffic congestion, roadway deficiencies, pavement degradation and traveler information by serving commuters, tourists and commercial vehicles.

   **Guiding Principles for Design and Development of ITS Strategies**

   - Multi-institutional partnerships (public and private)
   - Near-term implementation of some technology facilities (within 5 years)
   - Functional needs assessment driven
   - Duration of function needs
   - Concise, timely and accurate solutions to functional needs
   - Open-system architecture
   - Interoperability between solutions
   - Expandability within solutions
   - Challenge industries to develop new and better solutions using evolving technology

   **In Summary**

   The crossroads between the fully maturing industrial age and the ever-growing information age has been reached for transportation facilities. The output of the goods that meet the consumer demand by industries within our national bounders and from around the world is growing at a rate that that can no longer wait passively for someone or something to fix the resulting transportation shortfalls. Information is needed to solve today’s transportation problems and even more information to anticipate tomorrow’s problems. What information is needed to accurately anticipate tomorrow’s transportation problems and what information is needed to appropriately solve those future needs before they become critical? The sheer volume and complexity of the information requires intervention that is automated and can process large volumes of data in an extremely small amount of time. Then, in “real time” give instructions to people or automated equipment as needed to meet the ever growing and second by second changes on the roadways to warn, caution and prevent travelers from traffic congestion, delays, accidents, incidents, bodily harm and even death.
Technology must be used that can gather the correct information, process it through algorithms and then provide programmatic solutions or recommendations, especially when it is not practical or possible for humans to do the work. For example: Fatigue and information overload will occur due to environmental conditions, high volume of data over a small amount of time beyond what the human mind can process. Some of these technologies have been working in our manufacturing plants for almost two decades. Technology in the workplace over the last 20 years has increased production and output to ever growing heights. It is time for us to embrace and use some of the same technologies that caused these transportation problems.

ITS at its essence is about real time information exchange:

- Real time data gathering
- Real time data processing through proven algorithms
- Real time solutions
- Real time instructions and notification to drivers and others making travel destination decisions.

2. The Gateway Cities and Surrounding Areas Intelligent Transportation System (ITS) Research and Strategies for Transportation and Goods Movement Study

The following is an excerpt from this study:

In Summary

Various agencies have taken different approaches to ITS and other transportation issues because of their unique geographic position, and services… It is no longer adequate for each individual mode of transportation to be sovereign or adjacent cities and counties to be closed and independent. Instead, all modes of transportation and cities/counties must work jointly as a seamless system to support transportation and the types and volume of goods movement trips that are most critical to the economies in this region, state and nation… This research effort… concluded:

1. There are many agencies within the Gateway Cities Council of Governments area addressing transportation problems using ITS as an important component.
2. Further research is needed as there are so many agencies addressing ITS solutions that are in different stages of planning or development in the Gateway Cities area and much more effort and coordination will be needed as a next step.
3. Coordination among all the agencies involved with ITS solutions will be needed to coordinate all of the efforts being done and to provide the necessary detail and timing for ITS projects.
4. Finally, additional coordination actions can help provide the framework to proceed with ITS solutions for the Gateway Cities area.
3. Commercial Vehicle Enforcement Strategies, Systems and Sites Study

The following is an excerpt from this study (see Appendix A for full report).

**Guiding Principles for Future Planning, Design and Development of Commercial Vehicle Enforcement Strategies**

1. Functional needs assessment driven
2. Multi-institutional (public and private) partnerships
3. Implement permanent inspection facilities (on I-710 in particular) as soon as possible
4. Near-term implementation of some technology facilities (within two years)
5. Concise, timely and accurate solutions to functional needs
6. Interoperability between solutions
7. Expandability within solutions
8. Challenge industries to develop new and better solutions using evolving technologies
9. Changes in laws and codes to allow for new paradigms for managing and monitoring large volumes of trucks for effective enforcement
10. Annual, adequate and reliable funding for operations and maintenance requirements
11. Addressing community concerns and input

**In Summary**

1. Many complex issues and needs
2. Truck volumes are huge in magnitude
3. Existing truck enforcement ineffective
4. Solutions needs to benefit all stakeholders at all levels
5. Creative funding is needed to implement solutions
6. Cost of no build is measured in reduction in quality of life, reduced effectiveness of communities, businesses (including goods moment) and individuals that live and visit here.
2.2 **HISTORY OF TRUCK ENFORCEMENT**

In the past, truck enforcement facilities were placed in rural areas, when possible near river crossings. This approach minimized impacts on adjacent property owners and minimized the bypass potential for trucks that may attempt to bypass the weigh station. When the development of weigh stations was first started, the focus was on static axle/gross weights and some safety inspections. The equipment used for static weighing has evolved through the decades from mechanical lever scales, to analog scales, and now digital scales.

The approach to truck enforcement over the past 20 plus years has evolved to ramp and mainline screening and sorting of trucks into the weigh station. In the beginning the screening functionality was only the axle/gross estimated weights for each truck that passed over the ramp WIM area. Today the accuracy of these WIMs is +/- 3 to 5 percent of each vehicle axles and gross weight.

The functionalities of the ramp/mainline screening areas now estimates the weight, size, speed, brake temperature, license plate reading, U.S. Department of Transportation (DOT) reading, and transponder reading. Other screening functionalities are being developed and tested by the Federal Highway Administration (FHWA) and other states.
2.3 EXISTING APPROACH TO TRUCK ENFORCEMENT

The current approach to high volume truck enforcement facilities is in the use of ramp screening/sorting. All trucks are notified that the upcoming weigh station is open. Guiding signs direct all trucks to exit the mainline and enter the weigh station ramp. Trucks continue through the ramp where screening equipment evaluates each truck in motion.

When the screening process identifies a concern for a truck, the system sorts the truck into the station for further evaluation and inspection. Sorting and notification to the truck driver is by overhead signalization. If the screening process does not find any concerns or issues with the truck, it is directed to return to the mainline by way of the weigh station bypass lane.

The current screening evaluation and functionalities do not cover all the potential issues for trucks, but focus mainly in the area of size and weight and not as much on inspection items. To cover the short fall of the screening process, trucks can also be directed to a weigh station through random selection by the screening system. These trucks are brought in for further evaluation, even though the screening process did not find any issues. The percentage of random trucks to be directed to a weigh station can be user defined between 0 to 100 percent.

Once each truck arrives at the weigh station they will be directed onto a multiplatform static scale and/or inspection bay for evaluation. A truck parking area is required for short- and long-term parking. There are many other elements and processes to the modern TEFs that can be included in addition to the fundamentals of a working weigh station. This includes such items as sight lines from control room to static scales, adequate counter space to process drivers in a timely fashion, roadway and site lighting for 24 hour operations. In an urban area such as Gateway Cities, there are several freeways and arterials streets that trucks can use to bypass these TEFs. Virtual screen/sort sites will be needed to keep the trucks processing through these TEFs.

The current approach to truck enforcement at the ports and in the study area is by mobile enforcement personnel only. These mobile teams are made predominantly of CHP and some cities are also active in truck enforcement. There are little to almost no safe areas in or around ports to conduct these inspections. This is also a time consuming approach to inspect and weigh trucks.
through the enforcement process. On average it may take one law enforcement officer 30 minutes to an hour to process one truck in a mobile setting. Meanwhile the ports have processed and released 1,000 to 1,500 trucks during that hour of inspecting and processing one truck. That is only one-tenth of 1 percent or less effectiveness for the active enforcement of the truck volumes processed through the ports per hour or per day.

California uses a two-agency (California Highway Patrol (CHP) and the California Department of Transportation (Caltrans)) approach to the feasibility, development, design, construction, operation, maintenance, and repair of its TEFs throughout the State. CHP’s role is as a user and the agency heads up the daily operations of the TEFs. Caltrans is the owner of the TEFs. To better understand the relationship and areas of responsibilities of these two agencies, see the 2011 Commercial Vehicle Enforcement Facility Inventory of Needs, prepared by CHP in cooperation with Caltrans (Appendix B), as well as the Commercial Vehicle Enforcement Strategies, Systems and Sites Study (Appendix A).

1. 2011 Commercial Vehicle Enforcement Facility Inventory of Needs

The text below from this report summarizes the purpose and objectives of the enforcement program and includes descriptions of the different levels of enforcement facilities that are operated by CHP and owned by Caltrans.

The following are excerpts from this report (see Appendix B for full report):

**PURPOSE**

This Inventory of Needs (ION) is a planning and procedures document for Commercial Vehicle Enforcement Facilities (CVEF). It documents the decision-making process approved by the Director of the California Department of Transportation (Caltrans) and the Commissioner of the Department of the California Highway Patrol (CHP) relating to the identification, prioritization, implementation, and tracking of new facility construction, relocation, and major upgrades.

There are two primary reasons for the CVEF: infrastructure preservation and public safety. Highway pavement and structure life depend upon the weight and frequency of the traffic using the facility. Heavy trucks cause far greater impact on pavement and bridges compared to passenger cars. To illustrate the difference between cars and trucks, a road test sponsored by the American Association of State Highway Officials, many years ago, established that it takes the passage of approximately 9,600 cars to equal the pavement damage caused by one legal truck weighing 80,000 pounds. More recent studies on pavement damage indicate that a 10 percent overload roughly increases the pavement damage by as much as 40 percent. It is important to monitor overweight truck traffic in order to preserve and extend pavement life.

The inspection program enhances commercial vehicle and driver safety. The presence of CVEF improves detection and apprehension of impaired and fatigued commercial vehicle operators, as well as oversized and overweight commercial vehicles, thus prolonging the useful life of the highway and enhancing the safety of the traveling public.
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OBJECTIVES

1. Construct new CVEF on highway where none exist, and relocate or upgrade existing facilities which are inadequate for existing traffic volume. Priority is placed on new construction or upgrades at ports of entry. As used in this document, a “port of entry” is defined as any location where goods are transported into the state using commercial vehicles.

2. Conduct engineering and traffic studies to determine the feasibility of construction/upgrade of the CVEF that were identified in the 2001 ION document. Emphasis would be made on conducting studies at ports of entry.

3. Optimize safety, operational needs, and working conditions to ensure the efficient operation of existing facilities.

4. Implement intelligent transportation systems technology at the CVEF to help move trucks efficiently and use enforcement personnel effectively.

1. CLASS "A"

Class “A” facilities are located at strategic ports of entry into the state and have independent California Highway Patrol (CHP) command identity.

Class “A” facilities normally operate 24 hours per day, seven days per week, or match the hours of operation of Federal ports of entries when located at international borders with Mexico. Class “A” facilities may be used by other state or local agencies, as well as jointly used by bordering state representatives at the CHP commander’s discretion. Therefore, they should include in their design administrative office space designated agencies such as the Air Resources Board (ARB), Board of Equalization (BOE), Department of Motor Vehicles (DMV), and the county court clerk. Accommodations and funding should also be included for the installation of the mainline electronic bypass management system. The California Department of Food and Agriculture (CDFA) may co-locate at identified sites.

Class “A” facilities generally have weigh-in-motion (WIM) and static scales for weighing vehicles, and covered areas for inspection of vehicles and equipment. The covered inspection areas should be constructed with three or more bays (at least one designed without inspection pits). The number of bays is determined by the average daily truck traffic and projected long-term needs for the location. The facility should have an open storage area for legalizing loads, a parking area, and an area to permit the turning of trucks for reweighing. Class “A” facilities are designed and staffed for a primary focus on the inspection of vehicle size, weight, equipment, and loads during all hours of operation.

Class “A” facilities should include a secured room for weapons storage/maintenance, a room for storage of evidence and other sensitive items, a break room, a briefing room, a training room, and a work area for maintaining state vehicles.

2. CLASS "B"

Class “B” facilities are located along major highway routes and have an independent CHP command facility.

Class “B” facilities may operate up to 24 hours per day, seven days per week. Class “B” facilities may be used by other state or local agencies, such as the ARB, BOE, DMV, CDFA, and the county court clerk. Administrative office space should be included in the facility design to accommodate allied agency use on a permanent or frequent basis. Accommodations and funding should also be included for the installation of the mainline electronic bypass management system.

Class “B” facilities generally have WIM and static scales for the weighing of vehicles and covered inspection areas for the inspection of vehicles and equipment. The covered inspection areas should be constructed with two or more bays (at least one designed without an inspection pit). The number of bays is determined by the average daily truck traffic and projected long-term needs for the location. The facility should have an open storage area for legalizing loads, parking area, and an area to permit the turning of trucks for reweighing. Class “B” facilities are designed and staffed for a primary focus on the inspection of vehicle size, weight, equipment, and loads during all hours of operation.
Class “B” facilities should include a secured room for weapons storage/maintenance, a room for storage of evidence and other sensitive items, a separate break room, and briefing/training rooms. Class “B” facilities are typically commanded by a lieutenant and staffed by sergeants, officers, CVIS, clerical staff, and maintenance workers and/or janitors.

3. CLASS “C”

Class “C” facilities are located at strategic points on major highway routes. These facilities may operate 24 hours per day, five or seven days per week, predicated upon variable factors such as the average daily truck traffic and peak commercial traffic hours. These facilities may have WIM systems and should have static scales designed for vehicle weighing, areas for the inspection of vehicle equipment, an open storage area for legalizing loads, a parking area, and an area to permit the turning of trucks for reweighing. Accommodations and funding should also be included for the installation of the mainline electronic bypass management system.

Class “C” facilities are designed and staffed for a primary focus on the inspection of vehicle size, weight, equipment, and loads. Class “C” facilities not equipped with a covered inspection area and/or under-truck lighting, direct their primary focus on vehicle inspections during daylight hours. During nighttime and periods of inclement weather, this focus is redirected toward size, weight, and loading enforcement, as well as conducting inspections of driver qualifications and topside vehicle equipment.

Class “C” facilities are staffed by officers and may be staffed by sergeants and CVIS, depending on the size, function, and location of the facility. Class “C” facilities located in close proximity to Class “A” and “B” facilities will become a portion of that command structure. Remaining Class “C” facilities are under the direct command of the respective Division Special Services commander, and, in those instances where a sergeant has not been specifically assigned to the facility, are supervised by the Division commercial sergeant.

A Class “C” special facility has all the features and equipment of a Class “C” facility, plus a covered inspection area containing up to three inspection bays. Due to its remote location, a Class “C” special facility may have additional items such as a sergeant’s office, break room, weapons room, and evidence room.

4. CLASS “D”

Class “D” facilities are located at strategic points on major and secondary highway routes. Operational hours of these facilities are based on such factors as: the average daily truck traffic, peak truck traffic hours, and seasonal needs. These facilities shall have scales designed for the weighing of vehicles and may have a limited open area for the inspection of vehicle equipment. Accommodations should be made for the installation of the mainline electronic bypass management system.

Class “D” facilities are designed and staffed for a primary focus on the weighing of vehicles. Class “D” facilities are staffed by officers. Class “D” facilities located in close proximity to Class “A” or “B” facilities will become a portion of that command structure. Remaining Class “D” facilities are under the direct command of the respective Division Special Services commander, and are supervised by the Division commercial sergeant.

5. MINI-SITE

Mini-sites are designed as safe locations for portable scale operations and are strategically located on highways with an above-average volume of commercial vehicle traffic, to screen vehicles that may use alternative routes to avoid the CVEF.

The site should include an area designed for truck inspections, and may be randomly used by mobile road enforcement officers.

Operational equipment for mini-sites is normally transported to the site. Truck traffic is directed into the site by traffic control signs and devices. Mini-site locations are under the command of the facility commander or Division Special Services commander who has supervisory responsibility for the officers using the site.
PRIORITIES FOR NEW COMMERCIAL VEHICLE ENFORCEMENT FACILITIES

**TABLE 2**

<table>
<thead>
<tr>
<th>Priority No.</th>
<th>Location</th>
<th>Caltrans Dist.</th>
<th>CHP Div.</th>
<th>Co.</th>
<th>Rte.</th>
<th>Mile Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I-710 N/B*</td>
<td>7</td>
<td>Southern</td>
<td>Los Angeles</td>
<td>710</td>
<td>TBD</td>
</tr>
<tr>
<td>2</td>
<td>Needles</td>
<td>8</td>
<td>Border</td>
<td>San Bernardino</td>
<td>40</td>
<td>131.0</td>
</tr>
<tr>
<td>3</td>
<td>Moorpark</td>
<td>7</td>
<td>Southern</td>
<td>Ventura</td>
<td>118</td>
<td>11.3</td>
</tr>
<tr>
<td>4</td>
<td>Blythe</td>
<td>8</td>
<td>Border</td>
<td>Riverside</td>
<td>10</td>
<td>144.5</td>
</tr>
<tr>
<td>5</td>
<td>Chowchilla River S/B</td>
<td>10</td>
<td>Central</td>
<td>Merced</td>
<td>99</td>
<td>TBD</td>
</tr>
</tbody>
</table>

*Construction of a conventional weigh station is not feasible. Additional discussion is necessary for other options.*

PRIORITIES FOR MAJOR UPGRADES TO EXISTING COMMERCIAL VEHICLE ENFORCEMENT FACILITIES

**TABLE 3**

<table>
<thead>
<tr>
<th>Priority No.</th>
<th>Location</th>
<th>Caltrans Dist.</th>
<th>CHP Div.</th>
<th>Co.</th>
<th>Rte.</th>
<th>Mile Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Carson N/B</td>
<td>7</td>
<td>Southern</td>
<td>Los Angeles</td>
<td>405</td>
<td>11.7</td>
</tr>
<tr>
<td>2</td>
<td>Carson S/B</td>
<td>7</td>
<td>Southern</td>
<td>Los Angeles</td>
<td>405</td>
<td>12.2</td>
</tr>
<tr>
<td>3</td>
<td>Dunsmuir Grade</td>
<td>2</td>
<td>Northern</td>
<td>Siskiyou</td>
<td>5</td>
<td>R7.2</td>
</tr>
<tr>
<td>4</td>
<td>Peralta W/B</td>
<td>12</td>
<td>Border</td>
<td>Orange</td>
<td>91</td>
<td>13.8</td>
</tr>
<tr>
<td>5</td>
<td>Peralta E/B</td>
<td>12</td>
<td>Border</td>
<td>Orange</td>
<td>91</td>
<td>13.6</td>
</tr>
<tr>
<td>6</td>
<td>Keene</td>
<td>6</td>
<td>Inland</td>
<td>Kern</td>
<td>58</td>
<td>81.0</td>
</tr>
<tr>
<td>7</td>
<td>Cottonwood S/B</td>
<td>2</td>
<td>Northern</td>
<td>Tehama</td>
<td>5</td>
<td>40.8</td>
</tr>
<tr>
<td>8</td>
<td>Susanville (Town Hill)</td>
<td>2</td>
<td>Northern</td>
<td>Lassen</td>
<td>36</td>
<td>24.0</td>
</tr>
<tr>
<td>9</td>
<td>Solemint</td>
<td>7</td>
<td>Southern</td>
<td>Los Angeles</td>
<td>14</td>
<td>27.1</td>
</tr>
</tbody>
</table>
2. Commercial Vehicle Enforcement Strategies, Systems and Sites Study

The following are relevant key excerpts from this study (see Appendix A for full report).

**Class “A” and “B” enforcement facilities:** are for roadways with more than 2,000 commercial vehicles in both directions in a 24-hour period, not including 2-axle trucks. All of the freeways in the Gateway Cities COG area exceed 2,000 trucks in both directions in a 24-hour period. The I-710, I-605, I-105 and 91 exceed 20,000 trucks in both directions in a 24 hour period and this volume of trucks is growing. These corridors meet the threshold for Class A and B enforcement facilities in some cases by 10 folds or more.

Both the class A and B use Weigh-in-motion (WIM) either on a truck only ramp off of the roadway or on the mainline in conjunction with PrePass. A WIM is located on a truck only ramp all of the trucks must exit the roadway and enter this ramp to be weighed at a speed less than the mainline posted speed. Therefore, they brake to achieve the proper speed through the WIM area for accurate weighing. If the weights measured by the WIM for any of the trucks axles, axles groups and gross weights do not exceed preset limits the truck will be sent back the roadway. This ramp WIM requires all trucks to exit the mainline to be WIM weighed, this reduces the capacity of the mainline and the WIM sorter. WIM systems that are located on the mainline, they are usually in conjunction with a PrePass system. In the case the WIM is only weighing the trucks that are in the PrePass system. The percentage of PrePass trucks in the Gateway Cities COG area is small. Therefore, most of the trucks would not be WIM weighed on the mainline. All trucks need to be WIM weighed on the mainline to maximize capacity of both the mainline and the weigh station. Class A and B use legal for trade single platform static scales to write violation against. The flow rate of these single platform static scales is low, about 50 trucks per hour. This flow rate at the static scales depends on the experience of the truck driver, experience of the scale operator and number of axles on the truck. Multi-platform static scales can process 75-80 trucks per hour. When a WIM is integrated with a multi-platform static scale for auto-release the flow rate goes up to 100 trucks per hour.

**Class “C” and “D” enforcement facilities:** are for roadways with more than 500 commercial vehicles in both directions in a 24-hour period, not including 2-axle trucks. Most of the arterial streets in the Gateway Cities COG area exceed 600 trucks in both directions in a 24-hour period. Washington Boulevard, Slauson Boulevard, Firestone Boulevard, Imperial Highway, Rosecrans Avenue, Alondra Boulevard, Artesia Boulevard, Del Amo Boulevard, Willow Street, Pacific Coast Highway, Wilmington Boulevard, Avalon Boulevard, Alameda Street, Santa Fe Avenue most of these exceed 2,400 trucks in both directions in a 24-hour period and this volume of trucks is growing. These corridors meet the threshold for Class C and D enforcement facilities in some cases by 4 folds or more.

Class C and D use legal for trade single platform static scales against which to write violations. The flow rate of these single platform static scales is low, about 50 trucks per hour. This flow rate at the static scales depends on the experience of the truck driver, experience of the scale operator and number of axles on the truck. Multi-platform static scales can process 75 to 80 trucks per hour. When a WIM is integrated with a multi-platform static scale for auto-release the flow rate goes up to 100 trucks per hour.

**Mini-sites enforcement locations:** typically do not have a WIM or a fixed static scale. Therefore, when these sites are used for weight enforcement portable scales are used. Only 5 to 10 trucks can be weighed per hour. Flow rates with portable scales depend on the experience of the truck driver, experience of the scale operator and number of axles on the truck. The Gateway Cities COG area truck traffic on its roadways and arterial streets are too high in volume and demand for a mini-site enforcement location to be effective for the area it would serve. Where there are streets with lower truck traffic volumes and a mini-site for enforcement may be appropriate, there is no available land of like kind use for the facility.
From the excerpts of these two documents in the appendices, it is clear that the primary stakeholders of CHP, Caltrans, and GCCOG are in agreement that permanent truck enforcement facilities are needed in the Gateway Cities area. The only existing truck enforcement facilities in this area are in the City of Carson and have been closed for years: on I-405 Northbound and Southbound near mile marker 12.2 and 11.7. These two facilities, as per the 2011 Weigh Station Inventory of Needs Report, are defined as Class D facilities. As stated above, a Class D facility does not have a WIM or screening ability, but only has one single platform static scale for each station. With these limitations, the Carson enforcement facilities do not have the capacity to safely process the high volume of just the trucks only on the I-405 freeway.

Neither of the two ports, Gateway Cities, nor the surrounding areas are programmed for new truck enforcement facilities as per the 2011 Weigh Station Inventory of Needs Report, even though there are more truck trips per lane mile in the GCCOG area than anywhere else in the State of California.

### 2.4 COMMERCIAL VEHICLE TYPES

Truck configuration has changed significantly in the last 50 plus years, generating new challenges for truck enforcement. During the late 1950s and early 1960s, most trucks were straight trucks (no trailer or king pin) and they ranged about 20 feet to 40 feet in length and up to 8 feet and 6 inches (102 inches) in width. In the 1960s and 1970s, trucks were longer with a tractor and 40-foot trailer combination. These were the long-haul trucks of their day.

As consumer demands grew nationwide, trucks grew to keep up with those demands. In the 1980s, the introduction of the “Interstate truck combination” was being used. This truck combination was made up of a tractor and 53-foot trailer with king pin and sliding rear axle group. The intended use of this longer
combination was for long hauls with larger load exclusively on the national interstate system.

As time passed, this interstate truck combination could use both the interstate system and the truck routes on the secondary system; meaning these longer trucks could traverse through most cities. For these longer trucks, the rear axle group needed to slide forward so they could safely make the tight turns in the cities without jumping curbs and damaging signs, power poles, traffic signal cabinets, and so on. Now this truck combination is seen throughout the major roadways and port cities using the freeway and local arterial streets. For the most part, each of these tractor and trailer combinations was managed as an individual unit; hence, the driver/tractor/trailer unit would be for hire to move someone’s load.

The predominant truck configuration that serves the study area is similar to this tractor and 53-foot trailer combination, except that the trailer has two separate parts – the chassis and container box. The container boxes are loaded on to the chassis by way of cranes at the seaports and rail yards. This three-part truck combination is typically called a drayage truck and is the mainstay of the trucks that serve the two ports and the study area. Drayage lengths are a function of the container lengths of 20’, 40’, and 53’, with most containers being 40’ in length.

### 2.5 Existing Commercial Vehicles that Serve the Study Area

As stated above, the drayage truck is the predominant truck configuration that serves the study area. While these drayage trucks look similar to the other truck units that traverse the nation they are different as follows:

#### Table 2.1 Truck Types Comparison

<table>
<thead>
<tr>
<th>Items</th>
<th>Interstate Tractor/Trailer Unit (Truck Unit)</th>
<th>Drayage Trucks (that serves the two seaports)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuration</td>
<td>Typically a tractor with a king pin and a trailer that is 40’-53’ long. This truck unit will have 4 or 5 axles. Either is hauling a load or is empty. The Tractor will bob tail sometimes but this is not efficient or effective.</td>
<td>Typically a tractor with a king pin, chassis and container box that is 20’ or 40’-53’ long. This drayage truck combination will have 4 or 5 axles. Either is hauling a load or is empty. Tractor will bob tail sometimes but this is not efficient or effective.</td>
<td>Drayage truck combination has more parts to put together and disassemble at end points of each trip than the truck unit. These processes take more time, manpower, resources (cranes) and attention to safety details.</td>
</tr>
</tbody>
</table>
### Items

<table>
<thead>
<tr>
<th>Ownership and Management</th>
<th>Interstate Tractor/Trailer Unit (Truck Unit)</th>
<th>Drayage Trucks (that serves the two seaports)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Each driver/tractor/trailer unit is typically owned and managed by one entity as a unit. Hence this unit is hauling a load.</td>
<td>Each driver, tractor, chassis and container box are typically owned and managed by different entities. Hence drivers may be driving someone else’s tractor while pulling someone else’s chassis and yet someone else’s container box with or without a load.</td>
<td>Resource (drivers, tractors, chassis, container boxes and loads) management is more complex for the drayage operations since most of the different resources are owned and managed by different businesses and industries.</td>
</tr>
<tr>
<td>Routing of trucks</td>
<td>These truck units may have little to no repeats of their pickup or drop-off points over the course of months at a time. Most of these trucks are in an open system.</td>
<td>For majority of the drayage trucks the seaports and/or rail yard will be a pickup and drop-off point multiple times per day. A number of drivers are making 3-5 turns per day. A turn is from port to a destination and back to port.</td>
<td>Drayage trucks are in basically a closed system that primarily serves the seaports on one end of a freight movement.</td>
</tr>
<tr>
<td>Frequency through truck enforcement facilities</td>
<td>Unit trucks may travel through different weigh stations and even different states along its path from pickup to drop-off points. These trucks may rarely go through the same TEF over the course of 3 months or longer.</td>
<td>When a TEF is operational in the area: The drayage trucks may travel past the TEF multiple times per day. A number of drivers are making 3-5 turns per day. Over the course of 3 months these drivers and trucks may go through the same TEF 60-180 times. It is not clear how often each chassis or container box would process through the TEF.</td>
<td>The drayage drivers, tractors, chassis and container boxes are basically in a closed system making as many turns per day as possible. For these resources that are on the roadway, the TEF may see each driver/tractor a few times per day. They may see the chassis more than once per day and the container at least once per day.</td>
</tr>
</tbody>
</table>

### 2.6 Project Stakeholders and Needs

This Section includes a brief summary of the stakeholders and needs associated with the truck enforcement component of the project. A more detailed list of stakeholders and description of their needs is located in the *Commercial Vehicle Enforcement Strategies, Systems and Sites Study* (see Appendix A for full report).

For this site feasibility study the primary stakeholders are:

- CHP;
- Caltrans;
- Metropolitan Transportation Authority (MTA); and
- GCCOG.

Other valued stakeholders include:

- City of Carson; and
- City of Long Beach.
There is a need for roadway and bridge infrastructure preservation and public safety throughout the study area. As stated in the 2011 Commercial Vehicle Enforcement Facility Inventory of Needs document under “Purpose”, it takes about 9,600 automobiles to produce the same damages to the roadway infrastructure as one single 80,000-lb truck combination with 5 axles. Also, the stopping distance that is needed for an overweight truck is longer and prematurely wears out the brake system. Truck enforcement is currently the best way to keep these and many other safety issues at bay for trucks. For truck enforcement, the common need of these stakeholders is to have safe, legal trucks traversing the freeway and arterial streets throughout the study area.

Stakeholders are concerned with the increasing volume of trucks and the lack of effective enforcement of trucks in this area. There is consensus that the largest need for truck enforcement facilities is on I-710 and I-405 freeways. They also need for the truck enforcement facilities to be efficient and timely for the drivers, loads, and traveling public. Shippers and carriers need the throughput rate of the transportation/enforcement system to keep up with demands of the consumers. The current ramp screening/sorting approach to enforcement has a limited throughput rate of trucks that cannot keep up with truck volume demands, thereby creating a need to modify this current approach to operate at current and future demands.

In part, because of the growth of the two ports, the I-710 is planned to be improved and a DEIR/EIS has been prepared and is in circulation. The I-710 improvements would consist of modernizing the existing general purpose lane to a total of 10, and potentially adding a separate four-lane freight corridor for conventional or zero emission trucks. There are also plans to improve I-405. Any truck enforcement facilities need to be designed to be consistent with these proposed freeway improvements.
3.0 Need and Purpose

The local stakeholders have identified the need for safer and cleaner trucks throughout the subregion since 2005. For it was in 2005 that Gateway Cities COG Board voted to make safer and cleaner trucks a priority for the subregion. From that direction from the GCCOG Board, the need for effective and efficient truck inspection and enforcement has been pursued. Thus, the purpose of the TENS is to fulfill that needs statement of the GCCOG Board and its constituency that lives with these trucks on a daily basis.

3.1 NEEDS

The study area has been in need of permanent high capacity Truck Enforcement Facilities (TEF) near the two ports for years. As stated above in the excerpt from the 2011 Commercial Vehicle Enforcement Facility Inventory of Needs document, CHP/Caltrans priorities list for new TEF includes an enforcement facility on the I-710 NB and in the priorities list for major upgrades includes the I-405 NB and SB. These TEFs must operate and function at a higher throughput rate than current approaches can handle. There is a need to better understand the volume of trucks serving this area, the behavior of the truck drivers, the frequency at which the trucks will process through screening/sorting environments on a daily or weekly basis, the ever-changing drayage truck configuration (tractor, chassis, and load), and the duration of continuous service hours available to drivers servicing the two ports. There also is a need to understand from CHP/Caltrans how the current approach to truck enforcement can be modified to meet the present and future truck volume demands while maintaining the safety and operational effectiveness of the TEF.

Additionally, there is a need to realign the truck overweight fine structure to be proportional to the damages they produce to the roadway and bridges. Currently, as the magnitude of the overweight violations increase, the fines for these violations decrease. In other words, it is cheaper to be heavily overweight per pound. For more details see the Commercial Vehicle Enforcement Strategies, Systems and Sites Study (Appendix A).

3.2 PURPOSE

This project’s purpose is to develop strategies and an approach to truck enforcement that works for the needs of the stakeholders within the study area.
These TEFs must operate at a throughput rate to meet the needs of CHP’s daily operations, as well as Caltrans needs for a safe transportation system, and also the needs of shippers, receivers, and logistics industries to process safe trucks from point to point in a timely manner. The current approach to TEF cannot process trucks at a rate that will match the present and future truck volume demands projected for the freeways near the two ports. The challenge is to modify and add to the existing approach of truck enforcement. To achieve this purpose the following factors must be considered:

- Number of TEFs;
- Location of each TEF (preferably as close to the ports as practical);
- Throughput and size of each TEF;
- Screening/sorting functionalities of each TEF (items that need to be evaluated prior to trucks entering weigh station);
- Bypass potential (ability of trucks to easily avoid the TEF on other roadways);
- Screening functionalities of each bypasses (items that need to be evaluated while trucks are bypassing TEF);
- Understand the volume of trucks that services these ports and local area (not just the number of truck trips per day);
- Truck data gathering and processing (weight, size, date of last level one inspection, credentials, license plate #, U.S. DOT #, permits, etc.); and
- Ability to inspect trucks at freeway speeds to supplement permanent truck enforcement.
- Data collection, use and storage of truck data needs to be understood, evaluated and decided upon.

The need to develop a more comprehensive approach to truck enforcement is addressed in the Commercial Vehicle Enforcement Strategies, Systems and Sites Study (Appendix A). Because of limited right-of-way and abundant bypass potential, this study recommends a network approach for this urban area, hence the term Truck Enforcement Network System (TENS) was developed. The TENS approach uses both operations personnel and technologies to effectively and safely screen and inspect truck.
4.0 TENS Program Strategies

TENS is a multilayered approach to truck enforcement that is needed in an urban area that has limited land available for this type of use. This network approach also addresses the issues of bypass potential in this urban environment and the extremely high volume and concentration of trucks.

The layers of the TENS are as follows:

- **Screen-in-Motion** (remote-sensing functionalities and technologies);
- **Sort-in-Motion** (direct trucks in motion on roadways);
- **Confirm-in-Motion** (confirmation that trucks followed Sort-in-Motion device);
- **Truck data to TEF** (transmit truck screening data to TEF);
- **Sort trucks through TEF** (directs trucks to static scale or inspection barn); and
- **Traditional truck enforcement station** (same as current approach).

4.1 TENS MULTILAYERED APPROACH

The framework for the TENS is developed in layers (see Figure 4.1). Each layer has a unique purpose and all layers must work together as an integrated system. Each of the layers is operational and proven in a like kind truck enforcement environment in different parts of the nation. Currently, the States of Delaware, Florida, and North Carolina are using smart roadside functionalities through mainline screening/sorting and confirming in motion, and other states are in the planning/implementation stages. A description of each layer for TENS follows:
Figure 4.1  Truck Weigh Station Diagram

Screen-in-Motion *(Is working effectively at other enforcement facilities)*

The first layer of the TENS is screening of trucks in motion while on the roadway. These screening sites will collect much of the information that CHP needs, but not all the information they need to thoroughly evaluate each truck. The screening sites will serve as a tool for CHP to use in their overall strategy for truck enforcement. As existing screening functionalities improve and new screening functionalites are added to the TENS, this may reduce the volume of trucks needing to report through the weigh stations. In order to bolster the difference between current screening functionalities and CHP’s evaluation needs, a random feature could be added to the screening protocol. This feature could allow CHP’s staff to change the percentage (0 to 100 percent) of additional trucks to report through the TEFs. Also CHP staff could manually flag individual trucks for sorting to and through TEFs.

Sort-in-Motion *(Is working effectively at other enforcement facilities)*

The second layer to the TENS is sorting of trucks in motion while on the roadway. After each truck is processed through the screening sites they will be identified and flagged by automated or manual means if they are a potential violator. Those trucks that are flagged as potential violators will be sorted by overhead signals and signs to report to the TEF.

Confirm-in-Motion *(Is working effectively at other enforcement facilities)*

The third layer to the TENS is to confirm the movement and direction of these flagged trucks match the sorting instructions. When flagged trucks do not follow the sort instructions, CHP staff will be notified by web based interface at both the TEF and in CHP’s mobile enforcement vehicles.
Truck Screening Data to TEF (Is working effectively at other enforcement facilities)

The fourth layer to the TENS is for the flagged trucks data to be sent from the screening site to the TEF. Here at the TEF is where this data will be linked to each truck when it arrives for further evaluation.

Sort Trucks through TEF (Is working effectively at other enforcement facilities)

The fifth layer to the TENS is to sort and direct trucks through the station by way of static scale and/or inspection barn.

Traditional Truck Enforcement Station

The sixth layer to the TENS is to process trucks within the TEF as CHP per current approaches.

The implementation of this multilayered approach will also require new approaches to track enforcement strategies. Appendix A includes a review of existing laws and codes. This new approach will likely require changes to existing laws and codes to successfully implement this new multilayered enforcement approach. New technology gathering, data use, distribution, and integration will also be needed. This new technology approach will have to be adopted by CHP and Caltrans, and likely integrated into the Gateway Cities Technology Plan for Goods Movement that is being developed.

Technology applications should also consider using the evolving U.S. DOT Smart Roadside Initiative (SRI). The SRI proposal can be integrated into the Commercial Vehicle Enforcement Network (CVEN) concept developed in the report in Appendix A. SRI’s goals are similar to the CVEN concept in defining and developing a framework to connect commercial vehicles, motor carriers, enforcement resources, highway facilities, intermodal facilities, toll facilities, and other modes of the transportation system to provide for a better exchange of information. The proposed SRI framework could provide a foundation upon which technology can be used to meet operational needs for improving motor carrier safety, security, operational efficiency, and freight mobility, and enhanced protection and maintenance of infrastructure. This would include extensive use of Weigh-in-Motion (WIM) and Virtual WIM stations, as well as electronic screening and developing and deploying preclearance programs. This would include deploying multiple roadside sensors to identify and automatically screen trucks without requiring them to stop.
This new technology application (SRI) would seem to have the potential to provide additional tools to maintain (and supplement) enforcement programs that ensure compliance of motor carriers. These technologies could include:

- Universal commercial Motor Vehicle Identification,
- Electronic Screen/Virtual Weigh Station,
- Wireless Roadside Sensors, and
- Other Technology or Transportation Information Coordination.

Such technology system must provide information that is useful and used by various stakeholders. This would include the following:

- Significant increase in the number of high-quality safety assessments,
- Use of additional data to feed carrier safety ratings,
- Larger number of inspection and screening events to increase safety score correlation aimed toward safer truck operations,
- Systemwide operating cost reduction for both carrier and enforcement entities,
- Mobility improvements for carrier,
- Enhancing infrastructure preservation for system operators by increasing the frequency of size and weight screening and inspection events (without introducing truck travel time delays), and
- Enhanced data sharing across jurisdictions through enhanced system connectivity and streamlined information access close coordination with other transportation technology systems.

### 4.2 Resources Needed for TENS to be Effective

Given the sheer size and the extremely high truck volume demands these ports put on the transportation system in and around the Gateway Cities area, the TENS needs to match those demands in throughput rates. While these daily truck trip volumes are high, most of these are drayage trucks, which are trying to make as many turns as possible. A percentage of these drayage trucks are making three to five turns per day. Given the frequency of these trucks passing a TEF on regular basis, these TEFs may not need to process all the trucks all the time to be effective.

**Location of TEF**

The stakeholders agree that the most strategic location for the TEF is as close to POLB and POLA as possible. The highest volume of trucks uses the I-710 to and from these Ports every day. The I-710 freeway has the highest capacity for truck
throughput compared to others roadways that serve these two ports. A design project is underway to increase the I-710 capacity even more (For more information on this project see http://www.metro.net/projects/sr-710-conversations/).

**Number of Truck Enforcement Facilities (TEFs)**

To process the truck volumes in the subregion, at least two major TEFs are needed. Preferably one set of these TEFs needs to be on the I-710. There are two TEFs on the I-405 (NB and SB) in the City of Carson but for safety reasons they have been closed for years. The volume of trucks traversing past these TEF will require these sites to be completely rebuilt to meet current and future truck volume demands. It will take the sum of these two sets of TEFs (I-710 and I-405) to safely process these high volumes of trucks.

**Size of TEF**

Sizes of these TEFs should be more of a product of throughput rate to match demand than just footprint size. The current approach to truck enforcement is to use a ramp screen/sort. This requires all trucks to exit the roadway on to a dedicated truck only ramp lane. Some are sorted to the weigh station, while others are sent back to the roadway system. The required length to build a dedicated truck ramp screen/sort with proper deceleration lengths, length for control pavement as per American Society for Testing and Materials (ASTM E1318), length needed to visually evaluate trucks while processing through the site, proper acceleration length and merge back into traffic lengths is between 1.5 to 2 miles (not including required weave lengths at each end) from end to end. There are no locations on the I-710, I-405, or I-110 that meet this requirement between existing interchanges. There is room, however, to move the ramp screen/sort functions to the freeway mixed uses lanes.

**Screen-in-Motion Upstream of TEF**

This subsystem plays a vital role in the TENS as it is the first line of defense for truck enforcement personnel to discern which trucks need to be further inspected. The backbone of the screen-in-motion sites is in-road and roadside functions that will evaluate each truck, while they travel on the freeway upstream of each TEF, as shown in Figure 4.2.
Some of these remote sensing functionalities and technologies that could be used (in alphabetical order) are:

- Cameras for overview shoots;
- Commercial Vehicle Information System and Networks (CVISN) for credentials and safety rating;
- Infrared for brakes, emissions and tires;
- Intelligent Transportation System Card Advanced Loop Technologies for truck identification and tracking;
- Lasers or radar to measure trucks length, width and height in motion;
- License plate readers that use camera and Optical Character Recognition (OCR);
- Loops, lasers, or radars as triggers for controllers;
- Radiation portal monitor for detection of radiation form trucks;
• Transponders for preclearance of trucks;
• U.S. DOT # readers that use camera and OCR;
• WIM for weighing each axle and axle group; and
• Other functionalities are being tested by the FHWA and other states.

Bypass Potential
Trucks have a number of truck routes (freeways and arterial streets) that they can legally use to traverse through the Gateway Cities subregion while bypassing TEFs. Mobile enforcement is usually the resource to keep the trucks in check. That use of mobile enforcement will be true here as well. It is anticipated that the volume of trucks bypassing the TEFs will be high. To supplement the mobile enforcement team, screen-in-motion sites would be strategically placed to help the enforcement team know which trucks need to be further inspected.

Screening Functionalities of Bypasses Upstream of TEF
This subsystem plays a vital role in the TENS as it is the second line of defense for the mobile truck enforcement team to discern which trucks need to be further inspected that are trying to bypass the TEF. The backbone of the screen-in-motion sites is in-road and roadside functions that will evaluate each truck in motion while they travel on the bypass route.

Truck Data Gathering and Processing
Truck data (weight, size, date of last level one inspection, credentials, license plate #, U.S. DOT #, permits, etc.) will be transmitted to the TEF and/or web interface in mobile enforcement vehicles. When the truck is required to enter the TEF, the TENS system will marry each set of truck data that was collected from the smart roadside subsystem to the same truck as it enter the truck inspection/enforcement facility.

4.3 ENFORCEMENT LOCATION STRATEGY
The seaports of Long Beach and Los Angeles are the source of the highest volume and concentration of truck trips in the nation. The best line of defense is at or near the source of where these trucks will be leaving from and going to on a daily basis. There is no place to locate a TEF within the Ports without hindering operational throughput and effectiveness of these ports. In addition, there is no available or affordable land near or around the ports to use as a TEF. The next preferred location for TEFs is on the highest truck volume freeways that serve these two ports. These freeways are the I-710, I-110, and I-405. Both I-710 and I-110 serve the Ports directly, and I-405 secondarily serves the Ports by way of truck routes (freeways and arterial streets) between itself and the Ports. I-405 had a working TEF on it years ago, but has been closed for various issues for the
past several years. There is available land adjacent to the existing I-405 northbound weigh station that could be expanded. I-710 does not have available land with like kind usage until the Del Amo Boulevard interchange. There is about 30 acres in the southwest quadrant of the I-710 and Del Amo Boulevard interchange that could be used for a TEF. Daily truck volumes on this segment of I-710 are high. If the I-710 freight Corridor is built there is also another potential site that could serve the NB I-710 Freight Corridor lanes between Del Amo Boulevard and the I-405. This 6.5-acre site would service the I-710 NB Freight Corridor lanes and connect to the aforementioned 30-acre site via 208th Street on the west side of I-710. While placing a TEF on I-110 would be strategically sound and value-added, there is no available land.

**Truck Enforcement Facilities (TEF) Types – Large, Small, and Pull-Off Sites**

Three types of TEF are obtainable for the study area:

1. **Large TEFs** are used to process a large volume of trucks per hour through an enforcement environment of inspections and static weighments. The “Large TEF” will supply the inspection barns for the “Small TEF”.

2. **Small TEFs** are used to process a moderate volume of trucks per hour through an enforcement environment of static weighments and some level of inspections.

3. **Pull-Off Sites** are used to process a small volume of trucks per hour through an enforcement environment of inspections and static weighments.

**Virtual Screen/Sort Sites (VS³)**

Two types of Virtual Screen/Sort Sites (VS³) are needed to support the three types of TEF listed above. Each type of VS³ is described as follows:

1. **VS³ for fixed facilities.** These support both the “Large TEF” and “Small TEF” by directing the appropriate trucks to the TEF. Each of these VS³ sites will need to be placed upstream of the TEF for each roadway that the TEF serves.

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**Figure 4.3 Virtual Screening Example**
2. **VS³ for mobile forces and pull-off sites.** These support both the “Mobile Forces” and “Pull-Off Sites” by notifying mobile enforcement forces that a specific truck needs to be further evaluated. Each of these VS³ sites will need to be placed near locations with limited bypass potential such as rivers, rail grade crossings, bridges, etc. For these are natural choke points that minimize the number of ways a truck can go, hence, minimizing the bypass potential and the number of VS³ sites needed to be effective for this urban area.

**TENS Strategies Map**

This map shows the locations of four proposed Class A TEFs. Two of the locations would be recommended under existing conditions (if there were no improvements to the I-710 corridor). These are shown in blue and red. One of these two TEFs serves the I-710 freeway and nearby arterials, and the second TEF serves the I-405 freeway and nearby arterials. If there were improvements to the I-710 corridor, the proposed TEFs would include one at Del Amo/I-710 and one at Slauson/I-710 (shown in green and yellow, respectively). The blue squares with black dot are Virtual Screen/Sort Sites for the TEFs. The circles surrounding each TEF represent the area that law enforcement officers can by code redirect trucks to these TEFs.
Figure 4.4  TENS Strategies Map
5.0 Truck Enforcement Inspection Facility Sites and Classifications

As stated above in Section 2.3, *Existing Approach to Truck Enforcement*, each type or class of TEF with the operational staff has their own needs to be efficient and effective to comply with the intent of Federal and state codes.

5.1 REQUIREMENTS BY CLASSIFICATION

CHP and Caltrans have developed guidelines for each of the different classes of TEF. These guidelines help develop a framework of amenities needed for the safety and effectiveness of daily enforcement operations. The following are excerpts from the *2011 Commercial Vehicle Enforcement Facility Inventory of Needs* report (Appendix B for full report).
FACILITY FEATURES AND EQUIPMENT LIST

The following minimum features and equipment are necessary for the safe and efficient operation of all CVEF. Facility needs are listed by class of facility and supplying agency.

**CLASS "D" FACILITY**

Supplied by the California Department of Transportation (Caltrans):

- Static scales.
- Loop counters.
- Height sensor.
- Length sensor.
- Public address system.
- Protective barrier between scale grounds and highway traffic.
- Public restrooms.
- Adequate counter space for scale readout, computer, printing, radiological monitor, radio, and traffic control equipment.
- Digital weight display (scale head) and printer.
- Overweight alarm.
- Bullet-resistant glass and under-glass wall panels on all windows facing the highway.
- Drinking fountains in the office, inspection, and public areas.
- Office and counter space for enforcement activities.
- Storage area for California Highway Patrol (CHP) forms.
- Central heating and air conditioning system.
- Adequate storage area to house communication equipment (radio, telephone, Management Information System [MIS]).
- Window coverings.
- Janitor closet with mop, sink, and storage cabinets for supplies.
- Facility utility equipment storage room.
- Outdoor security lighting.
- Under-counter storage shelving and drawers for enforcement supplies.
- Emergency eye wash.
- Emergency shower.
- Traffic control lights in scale lanes.
- Highway sign (changeable message, also known as Web Station Sign).
  1. “ALL TRUCK STOP AT SCALES.”
  2. “SCALES CLOSED DO NOT ENTER.”
  3. “BUSES ONLY STOP AT SCALES.” (This is an optional feature that may be considered for installation at selected locations when replacing nonfunctioning signs.)
### FACILITY FEATURES AND EQUIPMENT LIST (continued)

The following may be included:

- Video traffic and security monitoring system.
- Flag pole with base light.
- Communication tower

Supplied by CHP (Caltrans preparation work may be required to facilitate installation):

- Telephone system for employees and the public.
- Printer and MIS system.
- Personal computer workstation including printer.
- Citation imprinter.
- Rechargeable flashlight unit.
- Portable CHP radio and charger.
- Filing cabinets.
- Bookcases.
- Tables.
- Side chairs.
- Adding machine.
- Supply/storage lockers.
- Counter stools.
- Antenna and related equipment for CHP communication.

#### CLASS “C” FACILITY

All features and equipment of a Class “D” facility, plus:

- Video traffic and security monitoring system.
- In-office storage space for Commercial Vehicle Inspection Specialist equipment.

The following may be included:

- One to three inspection bays.
- Inspection pit or under truck lights.
- Bay doors.
- Traffic lights (interior and exterior of bays).
- Emergency signaling system.
FACILITY FEATURES AND EQUIPMENT LIST (continued)

- Truck request/cancel system.
- Exhaust fume removal system.
- Individual heating systems for CVIS and officer inspection bay work stations.
- Flag pole with base light.
- Panic alarm system for the CVIS.
- Generator (installed only at ports of entry to maintain operation at full capacity during power outage).

Supplied by CHP (Caltrans preparation work may be required to facilitate installation):
- Copy machine.
- Microwave over.
- Refrigerator/freezer.
- Safety step ladders.
- Large wall-mounted fans (for inspection bay summer cooling in high heat areas).
- Fax machine.
- Base station with CHP radio console.

CLASS “B” FACILITY
All features and equipment of a Class “C” facility, plus:

Supplied by Caltrans:
- Inspection bays.
- Inspection pits and bay doors, may include under truck lights.
- Commander’s office (one occupant).
- Public counter and enforcement office.
- Supervisor’s office (three-four occupants).
- Sufficient office space for clerical positions assigned (1.5) and file storage.
- Conference/training room with chalk boards and storage.
- Weapons/evidence security room(s).
- Men’s and women’s locker rooms equipped with restrooms and showers of sufficient size to account for fluctuations in employee gender representation. (Where possible, provide a moveable wall separating men’s and women’s locker rooms that can be adjusted when significant fluctuation occurs.)
- Employee break/lunch room with storage cabinets.
- Combined briefing/training room (that can be separated with a floor to ceiling accordion divider) with storage cabinets.
FACILITY FEATURES AND EQUIPMENT LIST (continued)

- Built-in kitchen unit (sink, garbage, disposal, stove, and refrigerator/freezer).
- Water faucets in inspection bays (one for each bay).
- Compressed air system.
- Compressed air hook-ups in each bay and in weapons room.
- Employee mail slots.
- Office and counter space for interagency personnel.
- Flag pole with base light.
- Generator (maintain the operation of emergency/security lighting for the office and parking area. At ports of entry, maintain operation at full capacity during power outage).

Supplied by CHP (Caltrans preparation work may be required to facilitate installation):
- Radio/monitor speakers.
- Television/VCR.
- A 35mm or digital camera.
- Polaroid camera.
- Personal computer and workstation equipment, including printer and modem.
- Executive wood desk and chair.
- Metal desks (with and without typing pedestals) and chairs.
- Ergonomic chairs for clerical work stations.
- Executive wood bookcases.
- Evidence locker.
- Shotgun/ammunition locker.
- Weapons clearing tube.
- Briefing tables.
- Stacking chairs.
- Typewriter.
- Postage scale and meter.
- Date/time clock.

CLASS “A” FACILITY
All features and equipment of a Class “B” facility, plus:

Supplied by Caltrans:
- Sufficient office, scale head and business counter space for allied agency personnel.
- Generator (maintain operation at full capacity during power outage).
5.2 **VIRTUAL SCREENING SITES/APPROACH**

Virtual screening sites are for the evaluation of trucks and freight prior to inspection facilities and on bypass routes. These inspection facilities are of two types: the first is fixed facilities with building and static scales, and the second type is for mobile inspection at pull-off locations. The preferred locations for these pull-offs are on or near bypass routes. Each virtual screening site will be placed upstream of each inspection facility (both fixed and pull-off locations). This will allow the enforcement personnel to focus on the trucks and freight that are more probable to have a violation. This is a tool for the enforcement personnel to use to help them be more efficient and effective.

**Site Selection Criteria**

The following is an abbreviated list of site selection criteria for the placement of virtual screening sites:

1. Locate upstream of each inspection facility (fixed and mobile pull-offs).
2. Locate in segment that is least convenient to bypass with truck/freight. Note: Rivers and at-grade rail crossing are natural choke points for bypass potential.
3. Locate in straight tangents (both vertical and horizontal), where possible.
4. Where there are more than one lane in each direction exist, make outside lanes the primary lane for screening.
5. Pavement smoothness is needed for accuracy with some types of functionalities and technologies.
6. Segment length will be the sum of functionalities and technologies required at each site.
7. High-speed communications will be needed at each site.
8. Electrical power will be needed at each site.
9. Safe area for maintenance team to maintain and repair system.
6.0 Site Improvement Descriptions

After several site visits to the I-710 and I-405 freeways, years of study, and meetings with stakeholders, two sites meet the strategic approach and show promise as TEFs. These TEFs will serve all directions of travel on the freeway and local arterials. For the I-710, there are three different mainline configurations that the I-710 TEF will have to be designed to work with regardless of the order of their construction. These three conditions are as follow:

1. Existing I-710 corridor,
2. Expansion and realignment of existing I-710 corridor, and
3. A new separate truck only freight corridor to run parallel to I-710 mixed use.

Three potential sites were evaluated to locate TEFs along either I-710 or I-405 for the three conditions listed above.

The development for each of these three sites for the three conditions listed above is described in the following sections as follows:

1. **Existing Freeway.** I-710/Del Amo
   
   I-405/Del Amo;

2. **I-710 Improvements.**
   
   I-710/Del Amo
   
   I-710/Slauson; and

3. **I-710 Freight Corridor.** I-710/Del Amo.
Figure 6.1 TENS – Truck Enforcement Facilities Sites Map
6.1 TEF WITH EXISTING CONDITIONS

There are two potential Class “A” TEF sites located at Del Amo Blvd/I-710 and Del Amo Blvd/I-405 that are proposed to operate with the existing freeway conditions. Both of these major sites are located within the City of Carson, which have indicated their interest in development of each site. The Del Amo/I-710 TEF site also is proposed for construction and operation in conjunction with the future proposed projects surrounding the I-710, including the I-710 widening project and the I-710 Freight Corridor Project. The TEF site is designed to be a mutually exclusive, noninterrupting component to these projects, and would operate with minimal reconstruction. The location of the I-710/Del Amo site is shown on Figure 6.2. The layout of the Del Amo/I-710 TEF site with the I-710 is shown in Section 6.3.

Del Amo/I-710

Site Constraints and Opportunities

The proposed Class “A” TEF site at Del Amo/I-710 is located in the southwest corner of the Del Amo Blvd/I-710 interchange in the City of Carson. The Del Amo Blvd/I-710 interchange configuration is a partial cloverleaf with substandard northbound loop ramps with nonstandard radius, which hinder truck turning, as well as ramp operation, would require improvements, as described below under Offsite Improvements.

The proposed site contains two areas available for TEF development separated by Compton Creek. The site is shown in Figure 6.2. Impact to the creek would be minimized by only allowing bridge construction to connect the two constructible sites and circulate the truck traffic. Construction of structures to cover the creek would be avoided. The larger area (existing industrial area) is located southwest of Compton Creek and provides 20 acres of construction of the TEF. The smaller area is located northeast of Compton Creek and provides for 10 acres of construction.
Onsite Improvements

Primary Site (20-Acre Site)

The Primary Site is proposed to be constructed within the 20-acre industrial site available south of Compton Creek. This site will provide the necessary components to operate the TEF independently shown in Figure 6.3, including the following:

- Six bidirectional static scales;
- Eight bay inspection barns;
- Twenty-two truck parking spaces;
- Administration building; and
- Thirty staff parking spaces.
Offsite Improvements

I-710

With the TEF site operating, it is expected that the existing Del Amo/I-710 ramps would experience significant traffic impacts. The ramp operations would be constrained by the NB I-710 nonstandard radius loop ramp. The NB I-710 loop ramps would not have the operational capacity with the anticipated increased truck volume, and congestion is anticipated. To address these constraints, the existing slip-ramps are proposed to be widened to two 12-foot lanes and reconfigured to a diamond interchange as an interim improvement, as shown in Figure 6.4.
Local Street

A signalized intersection 1,300-foot west of I-710 on Del Amo Blvd is proposed, as shown in Figure 6.3, to allow access to the TEF site. Two 12-foot, left-turn lanes to the TEF site with a 300-foot pocket would be provided at this intersection. Trucks that completed inspections would also exit the TEF at this intersection.

Operations

Capacity and Limits

- Interchange Capacity:
  - 300-foot, left-turn pocket length (two lanes); and
- Site Capacity:
  - Approximately 600 feet queue length for each scale (six scales).

Circulation

The circulation of the truck traffic within the TEF site would follow a counterclockwise movement. Trucks would enter from the proposed Del Amo Blvd intersection, follow the counterclockwise circulation, and exit at the same intersection.

Traffic

It is anticipated that the I-710/Del Amo interchange would experience increased delay caused by the increased truck volumes to the TEF site. It is expected that the operations of the Del Amo Blvd/I-710 interchange with the interim ramp widening and reconfiguration would be sufficient to provide the capacity and
operational improvement needed. An in-depth analysis of the traffic patterns and impacts will need to be evaluated in the next phase of this study.

**Cost Summary**

The estimated project cost for the Del Amo/I-710 TEF with existing conditions is approximately $146,250,000. The estimated cost summary is shown in Table 6.1. This cost estimate includes the following:

- Primary Site (including the proposed Del Amo Blvd intersection);
- NB I-710 Interim Ramp Improvements;
- Right-of-way cost for the Primary Site; and
- Engineering and Construction Administration costs.

**Table 6.1** Del Amo/I-710 TEF with Existing Conditions Estimated Project Cost

*(In Thousands of Dollars)*

<table>
<thead>
<tr>
<th>TEF with Existing Condition</th>
<th>TEF Onsite Improvements Primary Site</th>
<th>Del Amo/I-710 (Interim Improvement)</th>
<th>Right-of-Way</th>
<th>Engineering and Construction Administration(^a)</th>
<th>Estimated Project Cost</th>
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<td>$65,000</td>
<td>$8,000</td>
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\(^a\) 25 percent of Total Construction Cost.

**Del Amo/I-405**

**Site Constraints and Opportunities**

The proposed Class “A” TEF site at Del Amo/I-405 is located adjacent and north of the I-405 between Del Amo Blvd and Main Street. There are 30 acres of undeveloped land available for TEF development between the Dominguez Channel and the I-405, as shown in Figure 6.5. The property is approximately 400 feet by 4,000 feet.
Within the available 30 acres, the proposed TEF site would provide the following components as shown in Figure 6.6:

- Six static scales;
- Six bay inspection barns;
- Seventy-five truck parking spaces;
- Five truck fueling stations;
- Administration building; and
- Twenty-four staff parking spaces.

**Offsite Improvements**

**Ramp Connectors from I-405 to TEF**

With the proposed TEF site layout, the SB I-405 trucks heading towards the TEF site must cross over the I-405 (shown in Figure 6.7). Instead of routing all of the SB I-405 trucks to cross over the I-405, a weigh station adjacent to the SB I-405 is proposed approximately 1,200 feet southeast from the SB I-405/Main Street on-ramp. Trucks would exit the SB I-405 to this station, where two static scales are being proposed, and would be able to re-enter the SB I-405. If additional inspection is required, these trucks would be able cross over the I-405 to the TEF site.
To allow access from the NB I-405 to the TEF, an exit ramp is proposed to be constructed to Avalon Boulevard. This ramp would be an elevated bridge structure approximately 2,300 feet long that would lead to the Class “A” TEF site (see Figures 6.8).

**Avalon Blvd I-405 Interchange Improvement**

In order to construct the NB I-405 off-ramp to the TEF, the Avalon Blvd/I-405 Interchange must be reconfigured, as shown in Figure 6.8. The existing NB I-405 off-ramp at Avalon Blvd would be reconfigured 200 feet southeast to provide the distance between successive exits per Caltrans Highway Design Standard Section 504.3. The existing NB I-405 on-ramp at Avalon Blvd would be realigned approximately 800 feet northwest to provide the vertical clearance between the NB Avalon Blvd on-ramp and the direct off-ramp to the TEF site.

It is also proposed that the trucks would exit the TEF to Avalon Blvd and utilize the Avalon Blvd/I-405 Interchange. An unsignalized intersection with right-turn
only onto Avalon Blvd approximately 600 feet north of the I-405 is proposed to allow trucks exiting the TEF site to access the Avalon Blvd/I-405 Interchange. Due to the increased truck traffic on Avalon Blvd, it is also proposed to widen the existing ramps at this interchange.

**Main/Figueroa Street Improvements**

The NB I-405 truck traffic would also be able to utilize the Main Street exit and access the TEF site at the proposed signalized intersection on Main Street approximately 600 feet north of the I-405. Trucks exiting the TEF in the direction of Main Street would cross Main Street and exit onto Figueroa Street as shown in Figure 6.9.

**Figure 6.9 TEF Exit to Figueroa Street with Existing Conditions**

It is anticipated that there would be a significant increase in truck volume from the TEF site on Figueroa Street. It is proposed that Figueroa Street be widened from four lanes to six lanes. Figure 6.10 shows part of the proposed Figueroa Street Improvements.
Figure 6.10 Figueroa Street Widening with Existing Conditions

Operations

Capacity and Limits

- Site Capacity
  - Approximately 3,000 feet of queue length for the scales (varies for each scale).

Circulation

Truck traffic would enter the TEF site from the I-405, Avalon Blvd, and Main Street, and follow a counter clockwise movement. After completion of the inspection, trucks would be able to exit on Avalon Blvd and Figueroa Street.

Traffic

It is expected that the Del Amo/I-405 TEF site development would increase the truck volume on Avalon Blvd/I-405 interchange and Figueroa Street. The Avalon Blvd/I-405 interchange improvement and the Figueroa Street widening would provide the additional capacity to address the traffic impact. The operational improvements made by the local street improvements would allow
the TEF site to operate to capacity without adversely affecting the traffic operations on the freeway mainline.

Cost Summary

The estimated project cost for the Del Amo/I-405 TEF site is approximately $178,000,000. The cost estimate includes:

- The proposed Class “A” TEF site;
- Ramp connectors from I-405;
- Avalon Blvd/I-405 ramp improvements
- Intersection at Main Street and TEF site;
- Figueroa Street improvements;
- Exit ramp to Avalon Blvd;
- Right-of-way cost; and
- Engineering and Administration costs.

Table 6.2 Del Amo Blvd/I-405 TEF with Existing Conditions Estimated Project Cost (in Thousands of Dollars)

<table>
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<th></th>
<th>Class “A” TEF Onsite Improvement</th>
<th>Class “C” TEF Offsite Improvement</th>
<th>Avalon Ave/I-405 Improvement</th>
<th>Main St/Figueroa St Improvement</th>
<th>Right-of-Way</th>
<th>Engineering and Construction Administrationa</th>
<th>Estimated Project Cost</th>
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<tbody>
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</tr>
</tbody>
</table>

a 25 percent of Total Construction Cost.

6.2 TEF WITH I-710 IMPROVEMENT

One of the major freeway improvements that are being proposed in the Gateway Cities subregion is the widening of the I-710 freeway and modernizing it. The I-710 freeway would be widened and realigned to up to 10 general purpose lanes. There are Class “A” and Class “B” TEF locations that could be constructed along with the I-710 improvements: the Del Amo/I-710 Site and the Slauson Ave/I-710 Site. The Slauson Ave/I-710 TEF site would only be able to be constructed and operated with the I-710 improvements (see Figure 6.12 for proposed I-710 improvements at Slauson Ave).
Del Amo/I-710

Site Constraints and Opportunities

The same site constraints as the TEF with existing conditions at Del Amo/I-710 Interchange will apply. See Section 6.1 for the information.

Onsite Improvements

The onsite improvements will be identical to the TEF with existing conditions at Del Amo/I-710 Interchange. See Section 6.1 for the information.

Offsite Improvements

I-710 (Built by Others) and Susana Road

Similar to the TEF with existing conditions, a new signalized intersection would be constructed 1,300 feet west of the Del Amo Blvd/I-710 interchange (see Figure 6.11).

Figure 6.11 Del Amo/I-710 Single Point Urban Interchange and Susana Road Realignment with I-710 Improvements
The I-710 widening project will include the realignment of the I-710 and reconfiguration of the Del Amo Blvd/I-710 interchange. As shown in Figure 6.11, the existing partial cloverleaf interchange would be reconfigured to a Single Point Urban Interchange. The construction of this interchange would require Susana Road to be realigned west. It would be most reasonable to realign this intersection 1,300 feet west of the I-710 on Del Amo, where the newly constructed signalized intersection for the access to the TEF would be located.

**Operations**

**Capacity and Limits**
- Same as Del Amo/I-710 TEF with Existing Conditions

**Circulations**

Within the TEF, the trucks would follow a counter clockwise movement identical to the TEF with existing conditions. See Section 6.1.

**Traffic**

It is anticipated that the I-710/Del Amo interchange would experience a heavy amount of traffic caused by the increased truck volumes to the TEF. It is expected that with the Single Point Urban Interchange improvement, the TEF site can operate at its full capacity.

**Cost Summary**

The estimated project cost for the Del Amo/I-710 TEF with I-710 Improvements is approximately $136,250,000. The estimated cost summary is shown in Table 6.3. This cost estimate includes the same construction cost as the Del Amo/I-710 TEF with existing conditions as shown in Section 6.1) without the Del Amo/I-710 Interim Improvements.

**Table 6.3** Del Amo/I-710 TEF with I-710 Improvements Estimated Project Cost (in Thousands of Dollars)

<table>
<thead>
<tr>
<th>TEF Onsite Improvements</th>
<th>Right-of-Way</th>
<th>Engineering and Construction Administration</th>
<th>Estimated Project Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Site</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEF with I-710 Improvements</td>
<td>$65,000</td>
<td>$55,000</td>
<td>$16,250</td>
</tr>
</tbody>
</table>

a 25 percent of Total Construction Cost.
Slauson Ave/I-710

Site Constraints and Opportunities

The proposed Slauson Avenue/I-710 site is located east of the I-710 corridor and north of Slauson Avenue (see figure 6.12). Currently, there is no interchange at Slauson Avenue and I-710. The I-710 widening project would realign the I-710 east at Slauson Avenue, and configure a Single Point Urban Interchange. To construct the Single Point Urban Interchange at Slauson Avenue, it is required to widen and realign Slauson Avenue north of the current alignment into business properties, as shown in Figure 6.12. Six acres of additional right-of-way would be acquired in order to construct this interchange, and creates an opportunity to construct a Class “B” TEF site. For this reason, the Slauson/I-710 site can only be constructed along with the I-710 widening project.

Figure 6.12  Slauson Ave/I-710 TEF Site Options with I-710 Improvements
Onsite Improvements

It is proposed to construct a Class “B” TEF site in the available six acres of land with the following components:

- Two to three static scales;
- One to two bay inspection barns;
- Six to seven truck parking spaces;
- Administration building; and
- Sixteen staff parking spaces.

Figure 6.13 shows one possible layout option of the Slauson Ave/I-710 TEF site.

Offsite Improvements

Local Street

Figure 6.13 shows the overall layout of the TEF site relative to Slauson Ave and the I-710. In order to allow access to the TEF from NB I-710, it is proposed to construct a loop ramp to the TEF adjacent to the EB Slauson Ave Exit ramp. This loop ramp would be constructed south of Slauson Ave and loop around to cross over Slauson Ave into the TEF.
To allow access to the TEF from B I-710, a signalized intersection 1,000 feet east of the Slauson Ave/I-710 interchange would be constructed. Two left-turn lanes would be provided to allow trucks to access the TEF.

**Operations**

**Capacity and Limits**
- Approximately 400 feet of queue length for scales;
- Approximately 400 feet left-turn pocket (2 lanes); and
- Approximately 800 feet loop ramp length.

**Circulation**

NB I-710 truck traffic would utilize the loop ramp connector to enter the TEF. SB I-710 truck traffic would take the Slauson exit east, and enter the TEF site through a left turn at the signalized intersection. Truck traffic within the Slauson Ave/I-710 TEF site would follow a counterclockwise movement. This movement allows for the SB I-710 truck traffic to enter the TEF through the loop ramp connector.

**Traffic**

An increase in truck volume is expected on Slauson Ave from the SB I-710 for approximately 800 feet to the TEF site and on the EB Slauson Ave exit ramp. It is anticipated that the Single Point Urban Interchange would provide the capacity to handle the truck volume without adversely affecting mainline traffic.

**Cost Summary**

The estimated project cost for the Slauson/I-710 TEF site with the I-710 Improvements is approximately $40,000,000. This cost estimate includes the construction cost of the TEF site, the loop ramp connector adjacent to the SB I-710/Slauson Exit, and the signalized intersection for access to the TEF. Right-of-Way costs would be included in the I-710 Improvements project.

<table>
<thead>
<tr>
<th>Slauson Ave/I-710 TEF with I-710 Improvements Estimated Project Cost</th>
<th>(in Thousands of Dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TEF Onsite Improvement</strong></td>
<td><strong>Loop Ramp to TEF</strong></td>
</tr>
<tr>
<td>Slauson Ave/I-710 TEF with I-710 Improvement</td>
<td>$21,000</td>
</tr>
</tbody>
</table>

a 25 percent of Total Construction Cost.
6.3 **TEF with I-710 Freight Corridor Improvements**

Another proposed freeway project being considered in the Gateway Cities subarea is the four-lane divided Freight Corridor constructed parallel and between the I-710 and the LA County River (east of the proposed I-710/del Amo TEF site). The Del Amo/I-710 Class “A” TEF site is able to be constructed along with the I-710 Freight Corridor Improvement.

**Del Amo/I-710**

*Site Constraints and Opportunities*

The same site constraints as the TEF with existing conditions at Del Amo/I-710 Interchange will apply (see Section 6.1).

*Onsite Improvements*

**Primary Site (20-Acre Site)**

The Primary Site is proposed to be constructed within the 20-acre site available area south of Compton Creek previously described. This site will contain the necessary components to operate the TEF independently. The proposed Class “A” Del Amo/I-710 facility, shown in Figure 6.14, includes the following basic components:

- Six bidirectional static scales;
- Eleven bay inspection barns;
- Twenty-two truck parking spaces;
- An administration building; and
- Twenty-nine staff parking spaces.
Secondary Multiuse Site (10-Acre Site)

The Secondary Multiuse Site is proposed to be constructed within the 10-acre site available north of Compton Creek (see Figure 6.14). This area will be constructed as additional long-term truck parking spaces to handle the overflow trucks that will require further inspection. This site will be able to store up to 42 additional trucks. The site is required to be constructed when the truck circulation within the Primary Site is going in a clockwise movement. It is also proposed to provide additional truck services at this site, such as an equipment charging station, fueling station, and overnight parking.

Offsite Improvements

Freight Corridor

To allow access from the SB Freight Corridor, a direct connector from the SB Freight Corridor to the TEF site would be constructed, as shown in Figure 6.15. Part of the ramp connector would be included in the I-710 Freight Corridor Improvement as the connector from the SB I-710 Freight Corridor to the SB I-710. This connector would be complete when the I-710 is realigned.
To allow access from the NB Freight Corridor, an additional Class “C” TEF site adjacent to the NB Freight Corridor is proposed, as shown in Figure 6.16. NB Freight Corridor trucks would be able to enter this site, and reenter to the NB Freight Corridor. Trucks that require additional inspection would be routed to the E. 208th Street overcrossing to the Primary Site.

Local Street – Susana Road Optional Improvement

Similar to the TEF with existing conditions, a signalized intersection is proposed 1,300 feet west of the Del Amo Blvd/I-710 interchange (see Section 6.1).

Depending on the traffic conditions, it is possible that Susana Road may be realigned to this signalized intersection. In which case, a loop connector ramp off of Susana Road may be constructed to allow access from NB I-710. The loop connector would be constructed from Susana Road, cross over Del Amo Blvd, and connect to the TEF. As shown in Figure 6.17, Option 1 would realign Susana Road, and Option 2 would additionally construct the Susana Road Loop Connector.
Operations

Capacity and Limits

Truck enforcement facility capacity is the same as above.

Circulation

The circulation of the truck traffic within the TEF site would follow a clockwise movement with the introduction of the Secondary Multiuse Site. This movement would allow the SB I-710 Freight Corridor traffic to enter directly into the TEF traffic. The NB I-710 Freight Corridor traffic would utilize the Class “C” TEF, and access the main site via E. 208th Street. Traffic entering from the I-710 would utilize the newly constructed intersection, and would have to cross over truck traffic to merge into the clockwise circulation. If the Susana Road Loop Connector Ramp is constructed, NB I-710 truck traffic would enter the TEF adjacent to the SB I-710 Freight corridor traffic. Trucks exiting the TEF would utilize the proposed Susana Road/ Del Amo Blvd intersection or E. 208th street to the NB I-710 Freight Corridor.
Traffic

It is anticipated that the I-710/Del Amo interchange would experience a heavy amount of traffic caused by the increased truck volumes to the TEF. It is expected that the I-710 Freight Corridor improvements and its access ramps to the TEF would allow the TEF to operate at full capacity.

Cost Summary

The estimated project cost for the Del Amo/I-710 TEF with I-710 Freight Corridor Improvements is shown in Table 6.5. In addition to the costs discussed in Section 6.2, the Del Amo/I-710 TEF with I-710 Freight Corridor Improvement includes:

- Secondary Multiuse Site (10-acre site);
- NB I-710 Freight Corridor weigh station; and
- Susana Road optional improvements.

Table 6.5  Del Amo/I-710 TEF with I-710 Freight Corridor Improvement Estimated Project Cost
(in Thousands of Dollars)

<table>
<thead>
<tr>
<th>TEF Onsite Improvements</th>
<th>Primary Site</th>
<th>Secondary Multiuse Site</th>
<th>I-710 FC</th>
<th>Local Street</th>
<th>Right-of-Way</th>
<th>Engineering and Construction Administration</th>
<th>Estimated Project Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEF with Freight Corridor</td>
<td>$65,000</td>
<td>$27,000</td>
<td>$12,500</td>
<td>$0</td>
<td>$55,000</td>
<td>$59,250</td>
<td>$185,625</td>
</tr>
<tr>
<td>TEF with Freight Corridor and Susana Road Loop Connector</td>
<td>$65,000</td>
<td>$27,000</td>
<td>$12,500</td>
<td>$20,000</td>
<td>$55,000</td>
<td>$64,250</td>
<td>$210,625</td>
</tr>
</tbody>
</table>

*25 percent of Total Construction Cost.*
7.0 Conclusions

It is technologically feasible to implement the truck inspection network that the Gateway Cities subregion needs to handle future freight throughput safely. For a truck inspection network in this area to be both effective and safe the integration of TEFs and multiple smart roadside screening/sorting sites will be necessary. The primary cause that is driving the need for smart roadside screening/sorting network is the sheer volume of trucks traversing on multiple freeways and truck routes throughout the Gateway Cities subregion. It is projected that this volume of trucks will triple in the next 20 years. The functionality and technology needed for these smart roadside sites are up and operating in like kind truck inspection stations within other states. The new primary function that is need in this subregion is to network and integrate multiple screening/sorting sites with proven smart roadside technologies and TEFs into one seamless truck inspection/enforcement network. The following are the main points of this study:

1. Smart Roadside is a proven approach that will process the high truck volume demands.
2. The current approach that all trucks must exit the mainline needs to be modified to smart roadside mainline screening/sorting.
3. Land of like kind use is available for two TEF (one on I-710 at Del Amo and a second on I-405 at Del Amo).
4. Host City for the two large TEFs is in favor of TENS approach.

More research, evaluation, and design are needed to confirm the operational, legal, and funding concerns are also feasible. These items will be addressed in Phase II of the feasibility study.

7.1 FEASIBILITY (FULFILLMENT OF PURPOSE AND NEED)

The Gateway Cities subregion continues to demonstrate the need for a safe and effective truck inspection system that meets current and future truck volume demands. The volume and density of trucks throughout the subregion are unequaled anywhere in the nation. The majority of these trucks are drayage trucks and do not travel outside a local area. Therefore, most of these trucks do not go through other regions that have truck inspection facilities for them to be
evaluated, checked, and processed through. Meanwhile these mostly noninspected trucks traverse the Gateway Cities subregion daily.

The purpose of this study was to find a functionally and technologically feasible way to safely and effectively inspect trucks that flow through the Gateway Cities subregion. The current approach to truck inspection requires a large acreage for a fixed facility next to the roadway; a three- to four-mile segment of roadway without interchanges in it; and all trucks have to exit the roadway and enter the inspection station. This current approach does not have throughput rate required to safely inspect the volume of trucks traversing the freeways and truck routes throughout the Gateway Cities subregion. The chokepoint in the current approach is in requiring all trucks to leave the roadway and enter the inspection station, and then return to roadway. Smart roadside screening/sorting will greatly reduce the number of trucks required to enter the inspection station from 100 percent to about 20 to 25 percent. This 20 to 25 percent sorting off the roadway and into inspection station may also reduce when the trucking and freight industries respond to the permanent and continual presence of a truck inspection/enforcement network. This major reduction in the number of trucks that require processing through the inspection station will also reduce the size of right-of-way needed for the station. For available land of like kind use in the Gateway Cities subregion is limited. The Truck inspection/Enforcement Network System (TENS) will screen/sort current and future demands while reducing the amount of needed land for the fixed station.

7.2 RECOMMENDED NEXT STEPS

Acknowledging that it is functionally and technologically feasible to implement a truck inspection network for the Gateway Cities subregion. The next phase of the feasibility study will focus on getting information to different level of government on the need and value of TENS; studying potential daily operations of transportation system and TEFs; reviewing California Code to identify the need to modify, omit, or add to the existing codes; assessing positive and negative impacts that the TENS will have on the transportation system, local areas, goods movement, inspection group and more; estimating life-cycle costs for each TEF and the TENS in total; and identifying potential funding sources both public and private.

The recommendation is to move forward into Phase II of the feasibility study as follows:

1. Educate and inform the appropriate levels of government of the need and value of a truck inspection network in the subregion.

2. Study, develop, and design this network to meet or exceed the operational needs of those that will do the inspection of trucks and those that have authority over the transportation system in this subregion.
3. Evaluate California Codes that may need to be modified, omitted, or added for the new approach to truck inspection to be completely effective to its potential.

4. Analyze potential added or modified vehicular movements (from mainline through stations and back to mainline) for impacts and safety.

5. Develop more detailed plans and costs for the TENS.

6. Develop more detailed plans and costs for the proposed TEF sites.

7. Research and study the environmental impacts and how to mitigate them.

8. Develop cost estimates to construct, operate, and maintain this TENS.

9. Research and find funding sources for the construction, operations, and maintenance of the TENS.
A. Commercial Vehicle Enforcement Strategies Systems and Site Study
COMMERCIAL VEHICLE ENFORCEMENT STRATEGIES
SYSTEMS AND SITES STUDY
(CVES)

FOR

THE GATEWAY CITIES & SURROUNDING AREAS

Prepared for:

GATEWAY CITIES
COUNCIL OF GOVERNMENTS

Prepared by:

Nolan Consulting, Inc

June 30, 2008
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Appendix A – CHP Needs Assessment Summary
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• Del Amo Blvd. Site
• South Gate Site
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EXECUTIVE SUMMARY

The Gateway Cities is located in Southern California. The southern portion’s of its area is anchored by the twin ports of the Ports of Long Beach and Los Angeles in the San Pedro Bay Harbor. Together these two ports represent the fifth largest port complex in the world. As a result, these two ports generate tens of thousands of truck trips a day and those volumes could triple in the next twenty years as container volumes continue to increase. Currently there are no permanent truck inspection facilities operating in Gateway Cities. Therefore, existing truck enforcement is ineffective. Any permanent truck inspections facilities would be built by Caltrans and operated by the California Highway Patrol (CHP). The Gateway Cities Board adopted a series of safety initiatives a few years ago. These included the development of permanent truck enforcement facilities so that the trucks in Gateway Cities could be inspected by CHP, leading to improved enforcement. That led to the preparation of this study to see how such facilities might be developed within Gateway Cities.

The purpose of this study was to develop a concept that could deal with the tens of thousands of trucks in the Gateway Cities area, develop concepts for potential permanent inspection facilities and a system that could be as automated as possible. The automation portion of this study was important so that any permanent truck inspection facilities did not result in “back-ups” of trucks from these facilities onto any adjacent freeways and to process (inspect, weight, etc.) as many trucks as possible. No other area of the United States has as a high concentration and number of trucks as in Gateway Cities.

The results of this study are:

1. Container volumes are expected to continue to increase at the two ports. This could result in truck volumes on the I-710 freeway in the future of approximately 70,000 trucks per day (currently the freeway transports about 25,000 trucks per day).
2. There are many freeways and arterial highways in the Gateway Cities area – an urbanized area. This would allow truck drivers to easily “skirt” any permanent truck inspection facilities. Therefore, automation and technology need to be incorporated into any permanent truck inspection facilities to deal with this.
3. As the Gateway Cities area is urbanized, there are no sites that could be easily developed along the freeways that access the ports. Nonetheless, after extensive review and research, six (6) potential sites (4 on I-710 and 2 on I-405) were analyzed and have potential for the development as permanent truck inspection sites. Appendix C contains aerial maps and sketches for the potential development of these sites for permanent truck inspection. More extensive analysis of these sites will be required in the next phase of this study.
4. A Commercial Vehicle Enforcement Strategy was developed to manage the large numbers of trucks using technology along freeways that service the ports (and potentially some arterial highways) to be constructed with permanent truck inspection facilities. This would consist of automating the potential permanent truck inspection facilities combined with a series of technologies placed on the freeway system primarily that could automatically monitor and weigh these large volume of trucks in the future.
The draft of the report was presented to staffs of Caltrans and CHP for review and comment at numerous meetings. The meetings that were held are summarized below:

1. Caltrans/CHP – June 7, 2007 at District 7 Headquarters in Los Angeles, CA
2. CHP – July 11, 2007 at Division Headquarters in Glendale, CA
3. Caltrans – November 29, 2007 at District 7 Headquarters in Los Angeles, CA
4. Caltrans – February 13, 2008 at District 7 Headquarters in Los Angeles, CA
5. Caltrans – March 5, 2008 at District 7 Headquarters in Los Angeles, CA
6. CHP – April 16, 2008 at CHP headquarters in Sacramento, CA
7. Caltrans – June 17 at District 7 Headquarters in Los Angeles, CA

The comments received from Caltrans and CHP are summarized below:

**Caltrans**

“Sorry I am a little late responding back. I tried to give all participants ample time to respond back. Please see attached comments from Kathleen Wanda, senior planner, regarding the goods movement. I also had one "no comments" response. However if I receive more comments I'll forward to you. “

**CHP**

“The purpose of this e-mail is to comment on the draft commercial vehicle enforcement strategies study for the Gateway cities and surrounding areas. The California Highway Patrol (CHP) goal is to place facilities in locations that would allow the CHP to weigh and inspect the highest volume of loaded vehicles.

The first priority in the Gateway Cities area is to place a class A Commercial Vehicle Enforcement Facilities (CVEF) on I-710 Northbound located between the Port of Long Beach and I-405. Second Priority would be to replace and modernize the Carson facilities on I-405. Furthermore, if these CVEF's are to be expedited, alternative funding should be identified, as these CVEF’s should not be placed ahead of any planned facilities listed on the priority list in the Weigh Station Inventory of Needs.

As far as the virtual weigh stations are concerned, we are supportive of using technology to enhance traditional enforcement practices, however, we do not support WIM automated enforcement. Automated enforcement does little to prevent ongoing loading violations and does not require loads to be put out of service until corrected. Although virtual weigh stations have an application to support traditional operations, the I-710 traffic corridor is absent a physical CHP presence via an enforcement facility. A facility should take the primary focus in solution considerations. Thank you for allowing us to comment on your report. “
Conclusions and Recommendations

Based on these comments (and the report), the following conclusions are reached:

1. Both Caltrans and CHP support the development of permanent truck inspection facilities along freeways serving the ports.

2. CHP priority is the construction of permanent truck inspection facilities along I-710. Further studies of the sites shown in Appendix C will be required as a next step as development of any of the sites is complex and difficult. Close coordination and cooperation with Caltrans and CHP in this next phase of the study will be needed.

3. Automation should continue to be pursued with coordination with both Caltrans and CHP and be examined as part of the ITS Integration Plan for Goods Movement finalized in July, 2008 by Gateway Cities. This includes the development of a Commercial Vehicle Enforcement Network (CVEN) for Gateway Cities as outlined herein. Any automation will require an examination of existing laws and regulations, as discussed herein, in order to make this approach effective and acceptable to CHP and Caltrans. Any new “paradigms” will require further, extensive analysis and details to be developed, particularly for WIM and VWIM applications on such a large basis as suggested herein.

4. Recommend, based on the results of this study, to proceed with an implementation plan for CVEN, which would include, but not be limited to, the following:
   (1). More detailed analysis and development of the potential sites (and any other potential sites) and obtain CHP and Caltrans approval (plus other applicable agencies). I-710 permanent inspection facilities should be the priority.
   (3). Determine accurate costs.
   (4). Obtain approvals.
   (5). Develop funding strategies to implement.
   (6). After approval, proceed with implementation, including environmental clearance and obtain funding.
OBJECTIVE OF THIS REPORT

The southern end of the freeway system in Southeast Los Angeles County, California connects with the Ports of Long Beach and Los Angeles. These two ports import almost 50% of the nation’s goods from overseas. One of the impacts of these cargo volumes are tens of thousands of trucks that use the freeway system shown in Figure 1.

The majority of the port trucks use the I-710 freeway. However, all of the other freeways near the ports handle large volumes of trucks, including the I-110. Therefore, truck drivers have many different routes to and from the ports, if they choose.

The Gateway Cities Council of Governments (GCCOG) represents the 27 cities in Southeast Los Angeles County on matters of regional interest. This includes the freeway system. The GCCOG has established some safety concerns, including addressing truck safety and inspection as a safety initiative. Currently, CHP operates only two permanent truck inspection facilities in Southeast Los Angeles County. These two, relatively small (class D enforcement facilities as per 2001 Weigh Station Inventory of Needs Report) truck inspection facilities, consist of only a single platform static scale and are currently not operated by CHP on a regular basis. These two facilities are located both a few miles west of the interchange between the I-405 and I-710 but are not currently being operated.
As previously stated, the majority of truck trips that service the ports use the I-710 freeway. This freeway has at least one major truck related accident every day and an upwards of five per day. It has more truck involved accidents than any other freeway in California. Therefore, the GCCOG focus for this study is to examine the construction of permanent truck inspection and enforcement facilities along this freeway that could meet the objectives of CHP, Caltrans, and the local community that hosts it, while maximizing truck inspections and enforcements and minimizing impacts to freeway operations from such facilities. Therefore, the focus of this study is to develop strategies that could:

1. Make these freeways safer for all travelers
2. Reduce pavement/roadway/bridge damage
3. Reduce traffic congestion
4. Improve real time commercial vehicle/driver information sharing

In the GCCOG Area of Southeast Los Angeles County CHP is the only agency with commercial vehicle enforcement authority. This commercial vehicle enforcement strategies, systems and sites study was initiated to determine if CHP commercial vehicle enforcement programs and facilities could be developed and deployed in the GCCOG and surrounding areas. The first step was to define CHP’s, Caltrans’ and the Trucking Industries’ needs for safety, security and protection through commercial vehicle enforcement. The next step was to make recommendations on strategies, systems, facilities and sites to encourage integration into existing CHP programs and facilities for the study area.

This study included research with CHP, Caltrans and Trucking Industries for the concepts that are being planned or implemented by CHP/Caltrans for commercial vehicle enforcement, and then the possible development of additional strategies and programs, if needed. To assist in the development of this study, meetings were held with CHP, Caltrans and Trucking industry who are interested in or planning commercial vehicle enforcement solutions.

After the development of CHP/Caltrans solutions, the funding for deployment, construction, operations, maintenance and repair will need to be addressed. The needed commercial vehicle enforcement improvements will take many years to implement due to lack of funding. The current prototype facility as defined in the 2001 Weigh Station Inventory of Needs report and the I-710 Weigh Station Feasibility study has strategic merit but the very high cost to benefit may not be practical. Nonetheless, because of continued population growth and seaport growth, all types of commercial vehicle volumes continue to increase in the region, further degrading already overburdened freeways and streets in this study area.

The final objective of the study is to develop feasible site plans for truck weight/inspection enforcement facilities which would be controlled and operated using a strategic plan involving transportation technologies that meets the objectives of CHP and Caltrans and conforms to the requirements of the local community who hosts them.

**AREA NEEDS STATEMENT**

The growth of the import and export containers at the Seaports of Long Beach and Los Angeles continue to increase each year; this is expected to continue into the foreseeable future. The populations of the greater Los Angeles County and neighboring counties are also on the rise.
However, the roadway infrastructure and its safety, security and protection programs and truck enforcement facilities have not been improved or developed to meet the demands to and from the seaports and for the residents of Southern Los Angeles County, where the two ports are located. Therefore, the freeways and secondary arterial highway corridors within the Gateway Cities area of Southern Los Angeles County operate at a level of service F (congestion level – 100% of capacity) during much of the day. A growing concern of the general public is with the mounting volume of commercial vehicle related accidents and ever failing pavement conditions. What this means to the general public on these freeways and roadways are high volume and high density of mixed-use traffic (trucks and cars). The local residents are concerned with the failing quality of the pavement that does not provide a safe smooth and adequate frictional surface for safe emergency braking and lane changes (this is being addressed by Caltrans for I-710 which will complete a major pavement reconstruction project in the next few years). The pavement reconstruction will likely compound the situation of low capacity for the duration of the project. However, the severe impact on local arterial highways due to the large volume of trucks is not being addressed by the enforcement authority.

The following is a list of needs basted on numerous meetings with CHP, Caltrans, and others, broken down into major categories that were identified during the study:

1. Safety
2. Security
3. Environmental
4. Volumes
5. Capacities
6. Employment
7. Obsolescence
8. Information management (real time)
9. Laws and codes
10. Land
11. Enforcement
12. Communication
13. Integration
14. Time
15. Identification
16. Technology
17. Cost
18. Funding
19. Community Concerns
20. Consumer Concerns

The outline above is a framework or skeleton of the needs found in this study. Each of these categories has multiple issues that help to define the overall needs statement. The following is intended to help define and make clearer the magnitude of the current and future needs for Gateway Cities COG and surrounding areas:

1. **Safety**

   1. **Unsafe Commercial Vehicles**
a. **Over weight trucks:** These are the primary causes of pavement damage to the roadway system in the study area. Different studies on pavement damage by trucks vary; the results vary from 1,200 to 9,600 cars to one truck of damage. Regardless, trucks are the overwhelming cause of pavement damage to the roadway system. Currently there are no permanent static scales to properly weigh the large volumes of trucks in the GCCOG freeway system, except for the two on the I-405 freeway. These two enforcement facilities are Class D facilities as per 2001 Weigh Station Inventory of Needs report. These two facilities are closed almost all of the time. They do not have the capacity to safely process the large volume of trucks on the I-405 for weight and inspection enforcement.

b. **Over sized trucks:** These are the primary causes of damage to the vertical elements over and next to the roadway system. These trucks contribute to the damage of bridge spans and piers, barrier walls, retaining walls, gantries and signs among numerous other items. These trucks can limit the flow of traffic in two or more lanes, due to the size of load on trucks and roadway conditions.

c. **Lack of required safety inspections:** of all commercial vehicle as required by federal and state codes

d. **Lack of credentials for commercial vehicles:** as required by federal and state codes

e. **Lack of required permits for overweight and oversize loads:** as required by federal and state codes

f. **Poorly maintained or obsolete trucks:** are not being checked as required by federal and state codes

2. **Unsafe Commercial Driver**

a. **Qualified truck drivers:** are needed for the current and future goods movement demands. Qualified drivers have Commercial Drivers License (CDL), health cards, insurance to name a few required items. Qualified drivers should perform pre-trip inspection of paper work and truck/trailer/load safety systems regardless who owns the truck, trailer or load. Knowing there is likelihood of enforcement increases the number of self inspections by competent entities to protect their interests.

b. **Lack of required rest:** of commercial drivers throughout the study area

c. **Lack of required credentials:** for commercial drivers throughout the study area

3. **Inadequate Presence by Commercial Vehicle Enforcement Authority**

a. Lack of adequate and effective fixed enforcement facilities: for commercial vehicle enforcement along I-710 or any other freeway in the GCCOG area. The two stations on I-405 in Carson are currently used for reinspections only. As a result of the S/B and N/B scales being closed in August 1997 for a construction project, then a collision that destroyed the N/B facility, they can only be used as portable enforcement areas. Caltrans does have money to fix them and there are currently talks to do the necessary repairs.

b. **Lack of safe portable patrol enforcement locations:** throughout the study area. This type of enforcement site is defined as a Mini-site as per 2001 Weigh Station Inventory of Needs report.
c. **Lack of remote monitoring enforcement sites:** These remote sites would monitor commercial vehicles throughout the study area.

d. **Existing commercial vehicle enforcement facilities:** These two stations on I-405 are not sized or equipped to adequately, effectively or safely process current commercial vehicle volumes traversing that corridor and the truck volumes are projected to continue to grow.

4. **Pavement conditions:** These are at substandard conditions on most of the roadway system throughout the Gateway Cities COG and surrounding areas. This is due primarily to the large number of heavy trucks, many of which may be overweight. This substandard pavement condition contributes to longer braking lengths to stop, and longer lengths for safe lane changes. Therefore, more space is needed between vehicles to provide a safe environment for the traffic. When the vehicles increase their spacing between each other, the capacity of the roadway is reduced. When vehicles do not compensate their spacing for the pavement conditions, the by-product can be an incident that can stop or greatly reduce the flow of traffic on the roadway. Caltrans is in the process of repaving the I-710 as far north as the I-5 and should complete that project within the next few years.

2. **Security**

1. **Illegal drivers:** It is uncertain whether the legal (driving) status of truck drivers that service the ports and their intentions are of a great concern for the local residents of the Gateway Cities COG and surrounding areas. For example: These drivers may highjack and steal the loads, or may use the truck and its load for harm to the general public.

2. **Hazardous materials:** These are the types of loads that concern law enforcement and the general public the most. These loads can be used to make explosive bombs and air born toxins to harm people, buildings and bridges to name a few.

3. **Homeland security:** This is a major effort at the two ports and any truck inspection and enforcement facilities should coordinate with port and federal efforts for homeland security.

3. **Environmental**

1. **Air quality:** This is a concern in the Southern California region due to pollution from outdated goods movement equipment. For example: Older trucks on the roadways, older ships at the ports and older trains throughout the area. These modes of transportation provide a large percentage of the pollution to this local area. The ports and air quality agencies are planning to replace the older trucks that service the ports, but the implementation of these plans will take many years to put into operation and the air pollution from older trucks must continue to be monitored. All vehicles need to be monitored and enforcement of air quality standards needs to be carried out.

2. **Noise:** from trucks is a growing concern in and near residential areas, schools, nursing homes, day care centers to name a few. Some trucks are parking in or near these areas at all hours. A portion of these trucks have noisy refrigeration units that must run continually. Another concern with noise is the road noise from heavy trucks on the roadways and streets in this study area.
3. Visual: impacts from trucks are a growing concern in and near residential areas, schools, nursing homes, day care centers to name a few. Some trucks are parking in or near these areas at all hours. Another concern is the sight of so many trucks on the roadways and streets in this study area.

4. Volumes

1. **Current container volumes:** The ports currently process approximately 17 million, twenty foot equivalent (TEUs) containers each year (or about 30,000 to 40,000 40 foot containers moved by trucks each day on the average). These containers are moved primarily by trucks and rail. It is estimated about 85% of all containers in the study area involve at least one, two or three truck movements before leaving the GCCOG area.

2. **Future container volumes:** Future volumes that will be leaving the ports per year are projected to grow as follows:
   a. Approximately 22-25 million TEUs in year 2017
   b. Approximately 27-30 million TEUs in year 2022
   c. Approximately 32-35 million TEUs in year 2027

3. **Current truck volumes:** The current volumes leaving the ports are at about 30,000 trucks (30,000 containers) per day using the I-710. This is the first of two, three and some times four truck movements for many of the loads made locally before the cargo leaves the study area by trucks or trains.

4. **Future truck volumes:** servicing the ports per day are projected to grow as follows:
   a. Approximately 85,000 trucks/containers per day in year 2017
   b. Approximately 100,000 trucks/containers per day in year 2022
   c. Approximately 120,000 trucks/containers per day in year 2027

5. **Current rail volumes:** approximately ½ of the containers leave the study area by train every day, either directly from the ports or from inter-modal yards beyond the port property.

6. **Future rail volumes:** approximately ½ of the containers will continue to leave the study area every day by train in the future, resulting in large numbers of trains per day.

7. **Current passenger car volumes:** 80% of the volume passing through the Gateway Cities freeway area is composed of passenger cars. These passenger cars are not part of the goods movement systems. But they share the roadways, freeways, highways and streets that are used by the trucks to move goods. Therefore, cars and trucks compete for capacity or space on these roadway systems. This sharing of the roadway system greatly reduces the flow rate of goods movement in and through the Gateway Cities COG and surrounding areas.

8. **Future passenger car volumes:** by percentage will be 70% on average near the ports and increase to about 90% at the northern periphery of the GCCOG service area. The competition between trucks and cars for capacity on the roadways will continue into the future.

5. Capacities

1. **Freeway systems:** The freeways are at a level “F” in service. This basically means the freeways are at capacity, full, slow and have a higher percentage of risk for truck related incidents and accidents. Daily incidents and accidents on the roadway system stop traffic for minutes and sometime for hours at a time and continue to delay the mixed traffic
(Trucks and cars) for hours. Therefore, the trucks providing goods movement must work with or around these incidents or accidents daily and still be on time to pick up or drop with their loads. The I-710 freeway, on average, has one truck related accident per day, the highest truck related accident rate for any freeway in California.

2. **Arterial systems:** The arterials are at a level “F” in service. Basically, the arterials are full, slow and have a higher percentage of risk for incidents and accidents. These daily incidents or accidents in the roadway system will stop traffic for minutes and delay the mixed traffic for hours. Therefore, the trucks providing goods movement must work with or around these incidents and accidents daily, and still be on time to pick up or drop their loads.

3. **Local streets:** The local streets are at a level “F” in service. Basically, the streets are full, slow and have a higher percentage of risk for incidents and accidents. These daily incidents or accidents on local streets will stop traffic for minutes and delay the mixed traffic for hours. Therefore, the trucks providing goods movement must work with or around these incidents and accidents daily, and still be on time to pick up or drop their loads.

4. **I-405 Carson weigh station:** This station has a single platform static scale without a Weigh-in-Motion (WIM). A WIM allows trucks to be weighed at freeway speeds avoiding a static scale stop if their weight (or weight distribution) is below allowable limits. The current configuration requires all trucks to enter the station when it is open. Also, the single platform static scale requires all trucks to be weighed multiple times to get all the axles weighed for each truck. This is a time consuming process and is too slow for the volume of trucks weighed. As stated this station does not have a WIM. Therefore, no culling for heavy or oversize trucks is being done at this location and it is not regularly operated.

5. **Rail system:** This system, from the ports, is at approximately 33% of capacity.

6. **Ports:** These are at approximately 33% of capacity.

### 6. Employment

1. **Qualified truck drivers:** Qualified drivers are needed now and this need will continue to grow to keep up with containers leaving the ports and for those second, third and sometimes fourth movements of loads in the area. Who will make-up this work force? Will they be independents or from a group? Will they become unionized or have their own association?

2. **CHP staff:** Staff are needed now and this need will continue to grow to keep up with increased truck volumes. Will this group need special training? Will this be privatized? How will CHP be funded to provide sufficient staffing to cover two ports operations around the clock?

3. **Trans-loaders and managers:** These workers are needed now and this will continue to grow over time to keep up with increased numbers of containers leaving the ports. Who will make-up this work force? Will they be independents or from a group? Will they become unionized or have their own association?

4. **Cross dock loaders and manager:** These laborers are needed now and this will continue to grow over time to keep up with increased numbers of containers leaving the ports and for those second, third and fourth movements of loads in the area. Who will make-up this work force?
7. Obsolescence

1. **Trucks:** This mode providing for goods movements to and from the ports is typically an older model that has a high level of polluting output. Concerns are also for these older trucks that may not be getting the appropriate level of maintenance and repair to be safe and are not regularly checked for air pollution. As previously stated, the ports and air quality agencies are working on plans to replace these older trucks with newer trucks but it is likely to be many years before large volumes of these older trucks are replaced.

2. **Roadway system:** Systems in the study area has not been greatly improved for 20 to 30 years. The last major roadway capacity improvement project was for the I-710 at its interchange with I-105 completed almost 20 years ago.

3. **Laws and codes:** These regulations for truck enforcement have not changed substantially for over 50 years. Many of the laws and codes are not keeping up with today’s situation much less future needs for effective, efficient and safe enforcement of trucks on the roadway systems today. In order to effectively manage, inspect and enforce the very large volume of trucks, new laws and codes will be needed to provide the necessary tools for this effort.

4. **Existing enforcement station:** The enforcement station on I-405 in Carson is in a good location but the infrastructure is outdated, inadequate and ineffective. This station needs to be upgraded to current and future truck volume demands and possibly be part of a larger truck enforcement system or network.

5. **Techniques used for enforcement:** Techniques such as pull off areas or Mini-sites, and traditional static scale stations or Class A-D are too slow and time consuming to be effective in today’s market of high volumes and on-time delivery demands. These existing techniques will continue to be highly ineffective in dealing with the large volumes of trucks that service the ports and the Gateway Cities COG area.

8. Information Management (real time)

1. **Truck information:** This information is needed to confirm that each truck is legally registered with all required credentials to operate in the State of California. Also, to confirm the last time a level one inspection was performed and passed.

2. **Driver information:** This information is needed to confirm that each driver is legally registered with all required credentials to operate in the State of California. Also, to confirm the last time a logbook inspection was performed and passed.

3. **Load information:** Load information is needed to confirm proper weight and if carrying hazardous material is labeled properly.

4. **Dispatch information:** This information is needed to confirm the location of the trucks for dispatchers, shippers and receivers.

5. **Road conditions:** Road conditions confirm flow rates of trucks only on the roadway system. Also, to provide the delay times on each roadway in the study area. Information should also be provided to the truck drivers on these road conditions and provide options to the driver and the delivery point for route options and time-tables for delivery if the selected route is congested (particularly in the freeway system).

6. **Port terminal conditions:** Port terminal conditions confirm truck flow rates and delays at the port terminals.

7. **Trans-loading conditions:** Trans-loading conditions confirm truck flow rates, delays and parking at transfer loading centers.
8. **Cross dock conditions:** Cross dock conditions confirm truck flow rates, delays and parking at cross dock centers and inter-modal facilities.

9. **Laws and codes**

The laws and codes in California currently invest the power to only CHP officers to inspect, enforce, and ticket trucks with violations. The courts then determine the fine to be paid as a result of that ticket. For truck inspection facilities, the law is currently written so that a ticketed violation resulting in a fine has approximately 80 to 85% of that fine amount going to the local community (courts, counties and cities) that has agreed to sponsor (or host) the facility. Overweight trucks can only be currently ticketed and fined based on a static scale measurement. This method (using only static scale) will limit and restrict CHP from ticketing potentially large volumes of trucks that service the ports and the GCCOG area that could be overweight. A single platform static scale can only process about 50 trucks per hour. This is very limiting for the large volumes of trucks that service the study area considering there are about 2400 trucks per hour leaving the ports and thousands more traversing the GCCOG area. Weigh-in-Motion (WIM) has been used for culling trucks at high speeds for 20 years. These weighing systems have proven themselves to be consistent and repeatable in their accuracy. There is a need to modify some of the existing laws and codes. There is also, a need to introduce new laws and codes for the enforcement of commercial vehicles and the fines associated with them.

The following are some of the current laws and codes pertaining to commercial vehicles and fines associated with commercial vehicle:

**CVC Section 1463.001**

“Except as otherwise provided in this section, all fines and forfeitures imposed and collected for crimes other than parking offenses resulting from a filing in a court shall as soon as practicable after receipt thereof, be deposited with the county treasurer, and each month the total fines and forfeitures which have accumulated within the past month shall be distributed, as follows:

(a) The state penalties, county penalties, special penalties, service charges, and penalty allocations shall be transferred to the proper funds as required by law.

(b) The base fines shall be distributed, as follows:

(1) Any base fines which are subject to specific distribution under any other section shall be distributed to the specified funds of the state or local agency.

(2) Base fines resulting from county arrest not included in paragraph (1), shall be transferred into the proper funds of the county.

(3) Base fines resulting from city arrests not included in paragraph (1), an amount equal to the applicable county percentages set forth in Section 1463.002, as modified by Section 1463.28, shall be transferred into the proper funds of the county. Until July 1, 1998, the remainder of base fines resulting from city arrests shall be divided between each city and county, with 50 percent deposited to the county's general fund, and 50 percent deposited to the treasury of the appropriate city, and thereafter the remainder of base fines resulting from city arrests shall be deposited to the treasury of the appropriate city.

(4) In a county that had an agreement as of March 22, 1977, that provides for city fines and forfeitures to accrue to the county in exchange for sales tax receipts, base fines resulting from...
city arrests not included in paragraph (1) shall be deposited into the proper funds of the county.  
(c) Each county shall keep a record of its deposits to its treasury and its transmittal to each city treasury pursuant to this section.  
(d) The distribution specified in subdivision (b) applies to all funds subject thereto distributed on or after July 1, 1992, regardless of whether the court has elected to allocate and distribute funds pursuant to Section 1464.8.  
(e) Any amounts remitted to the county from amounts collected by the Franchise Tax Board upon referral by a county pursuant to Article 6 (commencing with Section 19280) of Chapter 5 of Part 10.2 of Division 2 of the Revenue and Taxation Code shall be allocated pursuant to this section.

**CVC Section 1463.002**

“The base fine amounts from city arrests shall be subject to distribution according to the following schedule:

<table>
<thead>
<tr>
<th>County and city</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Los Angeles</td>
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<td>Alhambra</td>
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<td>Monterey Park</td>
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<td>Palos Verdes Estates</td>
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Pasadena .....................................09
Pomona .......................................12
Redondo Beach ...........................15
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South Gate.................................13
South Pasadena ............................09
Torrance .....................................16
Vernon .......................................25
West Covina ..............................11
Whittier......................................11
  County percentage ......................11”

CVC Section 1463.005
“Notwithstanding Section 1463.001, in a county subject to Section 77202.5 of the
Government Code, of base fines resulting from arrests not subject to allocation under
paragraph (1) of subdivision (b) of Section 1463.001, by a California Highway Patrol Officer
on state highways constructed as freeways within the city whereon city police officers
enforced the provisions of the Vehicle Code on April 1, 1965, 25 percent shall be deposited
in the treasury of the appropriate city, 75 percent shall be deposited in the proper funds of the
county.”

CVC Section 1463.5
“The distribution of funds required pursuant to Section 1463, and the distribution of
assessments imposed and collected under Section 1464 and Section 42006 of the Vehicle
Code, may be determined and made upon the basis of probability sampling. The sampling
shall be procedural in nature and shall not substantively modify the distributions required
pursuant to Sections 1463 and 1464 and Section 42006 of the Vehicle Code. The procedure
for the sampling shall be prescribed by the county auditor and the procedure and its
implementation shall be approved by the board of supervisors and a majority of the cities
within a county. The reasonableness of the distribution shall be verified during the audit
performed pursuant to Section 71383 of the Government Code.”

CVC Section 1463.11
“Nowithstanding Sections 1463 and 1464 of this code and Section 76000 of the Government
Code, moneys that are collected for a violation of subdivision (a) or (c) of Section 21453 of,
subdivision (c) of Section 21454 of, or subdivision (a) of Section 21457 of, the Vehicle
Code, and which are required to be deposited with the county treasurer pursuant to Section
1463 of this code shall be allocated as follows:
  (a) The first 30 percent of the amount collected shall be allocated to the general fund of the
city or county in which the offense occurred.
  (b) The balance of the amount collected shall be deposited by the county treasurer under
Sections 1463 and 1464.”
CVC Section 1464.2

“Notwithstanding any other provision of law, an amount of not more than two hundred fifty thousand dollars ($250,000) per fiscal year of the moneys otherwise required to be deposited in the State Penalty Fund under subdivision (e) of Section 1464 shall be available, upon appropriation, for the exclusive trust purposes authorized under Article 2 (commencing with Section 2930) of Chapter 5 of Division 2 of the Vehicle Code.”

CVC Section 1465.7

“(a) A state surcharge of 20 percent shall be levied on the base fine used to calculate the state penalty assessment as specified in subdivision (a) of Section 1464.

(b) This surcharge shall be in addition to the state penalty assessed pursuant to Section 1464 of the Penal Code and may not be included in the base fine used to calculate the state penalty assessment as specified in subdivision (a) of Section 1464.

(c) After a determination by the court of the amount due, the clerk of the court shall cause the amount of the state surcharge collected to be transmitted to the General Fund.

(d) Notwithstanding Chapter 12 (commencing with Section 76000) of Title 8 of the Government Code and subdivision (b) of Section 68090.8 of the Government Code, the full amount of the surcharge shall be transmitted to the State Treasury to be deposited in the General Fund. Of the amount collected from the total amount of the fines, penalties, and surcharges imposed, the amount of the surcharge established by this section shall be transmitted to the State Treasury to be deposited in the General Fund.

(e) When any deposited bail is made for an offense to which this section applies, and for which a court appearance is not mandatory, the person making the deposit shall also deposit a sufficient amount to include the surcharge prescribed by this section.

(f) When amounts owed by an offender as a result of a conviction are paid in installment payments, payments shall be credited pursuant to Section 1203.1d. The amount of the surcharge established by this section shall be transmitted to the State Treasury prior to the county retaining or disbursing the remaining amount of the fines, penalties, and forfeitures imposed.

(g) Notwithstanding Sections 40512.6 and 42007 of the Vehicle Code, the term "total bail" as used in subdivision (a) of Section 42007 of the Vehicle Code does not include the surcharge set forth in this section. The surcharge set forth in this section shall be levied on what would have been the base fine had the provisions of Section 42007 not been invoked and the proceeds from the imposition of the surcharge shall be treated as otherwise set forth in this section.”

CVC Section 1465.8

“(a) (1) To ensure and maintain adequate funding for court security, a fee of twenty dollars ($20) shall be imposed on every conviction for a criminal offense, including a traffic offense, except parking offenses as defined in subdivision (i) of Section 1463, involving a violation of a section of the Vehicle Code or any local ordinance adopted pursuant to the Vehicle Code.

(2) For the purposes of this section, "conviction" includes the dismissal of a traffic violation on the condition that the defendant attend a court-ordered traffic violator school, as authorized by Sections 41501 and 42005 of the Vehicle Code. This security fee shall be deposited in accordance with subdivision (d), and may not be included with the fee calculated and distributed pursuant to Section 42007 of the Vehicle Code.
(b) This fee shall be in addition to the state penalty assessed pursuant to Section 1464 and may not be included in the base fine to calculate the state penalty assessment as specified in subdivision (a) of Section 1464.
(c) When bail is deposited for an offense to which this section applies, and for which a court appearance is not necessary, the person making the deposit shall also deposit a sufficient amount to include the fee prescribed by this section.
(d) Notwithstanding any other provision of law, the fees collected pursuant to subdivision (a) shall all be deposited in a special account in the county treasury and transmitted therefrom monthly to the Controller for deposit in the Trial Court Trust Fund.
(e) The Judicial Council shall provide for the administration of this section.”

**CVC Section 2802**
“(a) Any traffic officer having reason to believe that a vehicle is not safely loaded or that the height, width, length, or weight of a vehicle and load is unlawful may require the driver to stop and submit to an inspection, measurement, or weighing of the vehicle. The weighing may be done either by means of portable or stationary scales and the officer may require that the vehicle be driven to the nearest scale facility, in the event the scales are within five road miles.”

**CVC Section 21654**
“(a) Any vehicle proceeding upon a highway at a speed less than the normal speed of traffic moving in the same direction shall be driven in the right-hand lane for traffic or as close as practicable to the right-hand edge or curb, except when overtaking and passing another vehicle proceeding in the same direction or when preparing for a left turn at an intersection or into a private road or driveway.”

**CVC Section 21655**
(b) “Any vehicle subject to the provisions of Section 22406 shall be driven in the lane or lanes designated whenever signs have been erected, when a specific lane or lanes have not been so designated, those vehicles shall be driven in the right-hand lane for traffic or as close as practicable to the right-hand edge or curb. If, however, a specific lane or lanes have not been designated on a divided highway having four or more clearly marked lanes for traffic in one direction, those vehicles may also be driven in the lane to the immediate left of that right-hand lane. When overtaking and passing another vehicle proceeding in the same direction, the driver shall use either the designated lane, the lane to the immediate left of the right-hand lane, or the right-hand lane for traffic. This subdivision does not apply to a driver who is preparing for a left- or right-hand turn or who is entering into or exiting from a highway or to a driver who must drive in a lane other than the right-hand lane to continue on his or her intended route.”

**CVC Section 22406**
“No person may drive any of the following vehicles on a highway at a speed in excess of 55 miles per hour: (a) A motortruck or truck tractor having three or more axles or any motortruck or truck tractor drawing any other vehicle.”

**CVC Section 34500**
“The department shall regulate the safe operation of the following vehicles: (a) Motortrucks of three or more axles that are more than 10,000 pounds gross vehicle weight rating. (b)
Truck tractors. (g) A truck, or a combination of a truck and any other vehicle, transporting hazardous materials. (k) A commercial motor vehicle with a gross vehicle weight rating of 26,001 or more pounds or a commercial motor vehicle of any gross vehicle weight rating towing a vehicle described in subdivision (e) with a gross vehicle weight rating of more than 10,000 pounds, except combinations including camp trailers, trailer coaches, or utility trailers. For purposes of this subdivision, the term "commercial motor vehicle" has the meaning defined in subdivision (b) of Section 15210.”

CVC Section 34501
“(a) (1) The department shall adopt reasonable rules and regulations that, in the judgment of the department, are designed to promote the safe operation of vehicles described in Section 34500, regarding, but not limited to, controlled substances and alcohol testing of drivers by motor carriers, hours of service of drivers, equipment, fuel containers, fueling operations, inspection, maintenance, recordkeeping, accident reports, and drawbridges. (2) The department may adopt rules and regulations relating to commercial vehicle safety inspection and out-of-service criteria. In adopting the rules and regulations, the commissioner may consider the commercial vehicle safety inspection and out-of-service criteria adopted by organizations such as the Commercial Vehicle Safety Alliance, other intergovernmental safety group, or the United States Department of Transportation. The commissioner may provide departmental representatives to that alliance or other organization for the purpose of promoting the continued improvement and refinement of compatible nationwide commercial vehicle safety inspection and out-of-service criteria.”

CVC Section 34501.2
“(a) The regulations adopted under Section 34501 for vehicles engaged in interstate or intrastate commerce shall establish hours-of-service regulations for drivers of those vehicles that are consistent with the hours-of-service regulations adopted by the United States Department of Transportation in Part 395 of Title 49 of the Code of Federal Regulations, as those regulations now exist or are hereafter amended. (b) The regulations adopted under section 34501 for vehicles engaged in intrastate commerce that are not transporting hazardous substances or hazardous waste, as those terms are defined by regulations in Section 171.8 of Title 49 of the Code of Federal Regulations, as those regulations now exist or are hereafter amended, shall have the following exceptions:

(1) The maximum driving time within a work period shall be 12 hours for a driver of a truck or truck tractor, except for a driver of a tank vehicle with a capacity of more than 500 gallons transporting flammable liquid, who shall not drive for more than 10 hours within a work period.”

CVC Section 34501.3
“(a) No motor carrier shall schedule a run or permit or require the operation of any motor vehicle subject to this division between points within a period of time which would do either of the following:

(1) Necessitate the vehicle being operated at speeds greater than those prescribed by this code.

(2) Require the driver of the vehicle to exceed the applicable maximum hours of service.

(b) A logbook of a driver, which reflects a trip or trips between points within a period of time which would have necessitated excessive speed to complete, shall give rise to a rebuttable presumption that the driver exceeded the lawful speed limit. (c) For a violation of
paragraph (2) of subdivision (a), a first offense is punishable by a fine of not more than one
thousand dollars ($1,000), a second offense by a fine of not more than two thousand five
hundred dollars ($2,500), and a third or subsequent offense by a fine of not more than five
thousand dollars ($5,000)."

CVC Section 34506.4
“(a) Any member of the Department of the California Highway Patrol may remove from the
highway and have placed in a storage facility, any vehicle described in subdivision (a) of
Section 22406, subdivision (g) of Section 34500, and any motortruck with a gross vehicle
weight rating of more than 10,000 pounds, which is in an unsafe condition.”

CVC Section 35401
”(a) Except as provided in subdivisions (b), (c), and (d), a combination of vehicles coupled
together, including attachments, may not exceed a total length of 65 feet. (b) (1) A
combination of vehicles coupled together, including attachments, that consists of a truck
tractor, a semitrailer, and a semitrailer or trailer, may not exceed a total length of 75 feet, if
the length of neither the semitrailers nor the trailer in the combination of vehicles exceeds 28
feet 6 inches. (2) A B-train assembly is excluded from the measurement of semitrailer length
when used between the first and second semitrailers of a truck tractor-semitrailer-semitrailer
combination of vehicles. However, if there is no second semitrailer mounted to the B-train
assembly, it shall be included in the length measurement of the semitrailer to which it is
attached.”

CVC Section 35401.1
“A combination of vehicles operated pursuant to Section 35400 or 35401 with a kingpin to
rearmost axle measurement of greater than 38 feet but not more than 40 feet may be operated
on those highways under the jurisdiction of local authorities only where it is deemed to be
safe by the owner of the vehicle or the person operating the vehicle and where its operation is
not specifically prohibited by local ordinance pursuant to subdivision (d) of Section 35401.”

CVC Section 35700
(a) “The legislative body of any county or city may by ordinance permit the operation and
moving of vehicles and loads upon highways under their respective jurisdictions of a
maximum gross weight in excess of the maximum gross weight of vehicles and loads
specified in this code.” (b) This section does not apply to state highways”.

CVC Section 35701
(a) “Any city, or county for a residence district, may, by ordinance, prohibit the use of a
street by any commercial vehicle or by any vehicle exceeding a maximum gross weight limit,
except with respect to any vehicle which is subject to Sections 1031 to 1036, inclusive, of the
Public Utilities Code, and except with respect to vehicles used for the collection and
transportation of garbage, rubbish, or refuse” (b) The ordinance shall not be effective until
appropriate signs are erected indicating either the streets affected by the ordinance or the
streets not affected, as the local authority determines will best serve to give notice of the
ordinance. (c) No ordinance adopted pursuant to this section after November 10, 1969, shall
apply to any state highway which is included in the National System of Interstate and
Defense Highways, except an ordinance that has been approved by a two-thirds vote of the
California Transportation Commission”.
CVC Section 35703
“No ordinance adopted pursuant to Section 35701 shall prohibit any commercial vehicles coming from an unrestricted street having ingress and egress by direct route to and from a restricted street when necessary for the purpose of making pickups or deliveries of goods, wares, and merchandise from or to any building or structure located on the restricted street or for the purpose of delivering materials to be used in the actual and bona fide repair, alteration, remodeling, or construction of any building or structure upon the restricted street for which a building permit has previously been obtained”.

CVC Section 35707
“Boards of supervisors in their respective counties may by ordinance reduce the permissible weights upon improved highways only which by reason of deterioration will be destroyed unless the weight limits are reduced, but no such reduction shall extend for a period of more than 90 days unless actual repair of the highway is begun within that time and thereafter continuously carried on to completion”.

CVC Section 35712
(a) “Any county may, by ordinance, prohibit the use of any highway located in an unincorporated residential or subdivision area by any commercial vehicle exceeding a gross weight of 14,000 pounds. (b) Any county of the third class, as defined by Section 28024 of the Government Code, or of the ninth class, as defined by Section 28030 of the Government Code, may, by ordinance, prohibit the use of any highway located in an unincorporated residential or subdivision area by any commercial vehicle exceeding a gross weight of 5,000 pounds”.

CVC Section 42030.1
“(a) Every person convicted of a violation of any declared gross vehicle weight limitation provision of this code, shall be punished by a fine that equals the amounts specified in the following table:

<table>
<thead>
<tr>
<th>Pounds in Excess of the Declared Gross Vehicle Weight</th>
<th>Fine</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,001-1,500</td>
<td>$250</td>
</tr>
<tr>
<td>1,501-2,000</td>
<td>300</td>
</tr>
<tr>
<td>2,001-2,500</td>
<td>350</td>
</tr>
<tr>
<td>2,501-3,000</td>
<td>400</td>
</tr>
<tr>
<td>3,001-3,500</td>
<td>450</td>
</tr>
<tr>
<td>3,501-4,000</td>
<td>500</td>
</tr>
<tr>
<td>4,001-4,500</td>
<td>550</td>
</tr>
<tr>
<td>4,501-5,000</td>
<td>600</td>
</tr>
</tbody>
</table>
5,001-6,000 .................................................................700
6,001-7,000 .................................................................800
7,001-8,000 .................................................................900
8,001-10,000 ..............................................................1,000
10,001 and over .........................................................2,000”

CVC Section 42201.1
“Fines and forfeitures received by a county under Section 1463 of the Penal Code may be used to reimburse the state for the construction of platform scales and vehicle inspection facilities in the county.”

Summary of Current Laws and Codes

The current system of laws and codes are summarized below:

1. It seems that the courts, cities and counties get most if not all for the funds from fines. The percentages are based on the type of violation and what city or county it was in.
2. State surcharges of 20 percent can be levied on some violations. It is not clear what types of violation can be surcharged or who enforces the surcharge. The Judge?
3. There are very few preset fine structures or tables to simplify the process and reduce overhead of the process.
4. Trucks can only be rerouted 5 miles for enforcement.
5. Trucks are restricted to a 55 mile per hour speed limit.
6. Trucks are restricted to the two rightmost lanes unless otherwise designated
7. Cities and counties may restrict the movement of vehicles over a maximum gross weight limit in residential districts, provided that appropriate signs are erected.
8. Cities and Counties may not prohibit trucks from operating on any street when necessary for the purpose of making pickups or deliveries of goods.
9. Counties may not restrict trucks on improved County highways unless to prohibit deterioration of such street (unless in a residential district).
10. As the magnitude of the damages grows the fines for weight violation per pound go down. But the damages to the roadway continue to go up. Fines do not cover the cost of the damages to the roadway and bridges.
11. Counties can give funds from vehicle violations to the state for enforcement facilities. It is unclear whether the cities can give any funds from vehicle violations to the state for enforcement facilities.

10. Land

1. Existing right-of-way: Current right-of-way is inadequate for traditional enforcement facilities along any of the freeways within the GCCOG area.
2. **Adjacent land to right-of-way:** Adjacent land is by percentage largely residential, commercial or industrial with some adjacent utilities, making the construction of any truck inspection or enforcement facilities difficult.

3. **Los Angeles River:** The River restricts land use adjacent to most of I-710 (see Figure 1). This river also, provides a natural choke point for trucks traversing the GCCOG area in an easterly or westerly direction across this river.

4. **Land at Ports:** The ports of Los Angles and Long Beach do not appear to have available land for enforcement facilities that would also be located to process large volumes of trucks from both ports.

5. **Land of like kind use:** Land of like kind use is limited adjacent to or near right-of-way that is not residential housing, schools, day care centers, nursing homes, hospitals, libraries and so forth.

11. **Enforcement**

   1. **Fixed truck enforcement facilities:** Enforcement facilities are located on I-405 in Carson, and they are the only fixed enforcement stations in the study area with limited size and processing capability. These limitations make these stations inadequate, ineffective and unsafe for the volume of trucks on this corridor.

   2. **Mini-Sites or Pull off locations:** These do not provide a safe place for the motoring public, enforcement staff or commercial drivers to perform weigh/inspection activities in the GCCOG area.

12. **Communication**

   1. **Public and private groups:** These groups need to voice concerns and communicate their needs to each other and develop partnerships. Also, communication their potential solutions for common issues that exist in both the public and private arena.

13. **Integration**

   1. **Public and private groups:** These groups need to integrate their resources, where it is practical to do so. This could reduce wasted time, funds, equipment and workforce for both groups.

14. **Time**

   1. **Peak hours:** Peak hours for truck traffic coincides during mid-day, mostly during non-peak hour car traffic time periods. However, to keep up with demands the large and ever growing volume of trucks will be required to move into car peak periods in the future.

   2. **Goods Movement hours:** These times need to expand into hours of minimum traffic on the freeways and arterials streets to have the capacity needed to be timely with there loads.
15. Identification

1. **Trucks need**: Automated Vehicle Identification (AVI) is needed to increase flow rates of trucks through commercial enforcement sites, terminal gates, trans loading gates, cross dock gates, warehouse gates to name a few.
2. **Drivers need**: Automated Driver Identification (ADI) is needed to increase flow rates of trucks through commercial enforcement sites, terminal gates, trans loading gates, cross dock gates, and warehouse gates among others.
3. **Loads need**: Automated Load Identification (ALI) is needed to increase flow rates of trucks through commercial enforcement sites, terminal gates, trans loading gates, cross dock gates, warehouse gates to name a few.

16. Technology

1. **Current technology**: The technologies used in the study area at I-405 Carson enforcement stations are slow, ineffective, and very limited. There is no current technology that is being used in the study area that is adequate to manage, inspect or enforce the truck volumes. There is no comprehensive transportation technology information system in place in the Gateway Cities Area that could be used as part of the technology solution for truck inspections and enforcement. However, the GCCOG, Caltrans and FHWA are preparing an ITS Integration Plan with an emphasis on goods movement that could include technology elements for truck inspection and enforcement.
2. **Future technology**: The technology of the future will process high volumes of truck related information, at high rates of speed (real time) that can also be used for truck inspection and enforcement. This technology needs to be on the roadways, so that trucks do not need to leave the mainline to be weighed and measured. New laws will need to be developed to allow these current and future technologies to be used for the enforcement of trucks and write violation with these technologies.

17. Cost

1. **Pavement resurfacing and repairs cost**: Over weight trucks are the main cause of pavement damage, requiring more repairs to the pavement and more frequent resurfacing.
2. **Cost incidents and accidents on the roadways**: Trucks are involved in many of the incidents on the roadways throughout the GCCOG area. Some investigatory findings are that the truck’s safety equipment (Brakes, wipers, tread on tires) did not meet standards, or the driver was over the required limits for hour of continued service (no rest).
3. **Cost of stopping all trucks for enforcement**: There are too many trucks on the roadway to stop all of them. A need persist for automated equipment to cull trucks on the roadway. A system is needed that would not stop any of the trucks for the purpose of truck enforcement.
4. **Cost of old trucks**: Old trucks are high in polluting output and traffic incidents due to the lack of routine maintenance and repair.
5. **Cost of poorly maintained trucks**: Improper trucks on the roadway system through damaged pavement, higher incidents, congestion, pollution, less security, unleveled trucking industry.
18. Funding

1. **Magnitude of fines**: These fines do not cover the damages caused by the trucks. The fines for overweight trucks have not increased in years and the cost of resurfacing the pavement has increased at an alarming pace.

2. **Trucks enforcement facilities and staff funding**: The current number of staff for truck inspections and enforcement is inadequate to provide for an effective, efficient and safe program the protection of Gateway Cities COG residents, communities, and the surrounding areas. More funding is needed for an adequate, effective enforcement network for the largest volume of trucks in the State of California.

3. **Funding for maintenance and repair of existing enforcement facilities**: is inadequate to provide safe, clean, dependable facilities, their systems and functions.

4. **Beneficiaries of the fines**: may need to provide some of the funds to operate and maintain enforcement facilities and staffing of these facilities on a secure and ongoing basis.

5. **Caltrans/CHP funding**: needs to be subsidized through a portion of the fines generated by enforcement activities.

6. **Container fee funding**: A portion of the container fees needs to help fund the monitoring and enforcement of commercial vehicles.

7. **Contraband funding**: A portion or all of the value of the contraband items found by CHP at enforcement facilities within the GCCOG area. For example: drug money, drugs and other illegal items.

8. **Construction funding**: This funding is needed in order to construct the required facilities.

9. **Continuation (annual) funding**: This increase is needed for continued maintenance, upgrades, and operation of enforcement facilities.

19. Community Concerns

1. **Motorist safety**: Concerns for safety on the freeways, roadways and streets due to large volume of trucks and the safety condition of these trucks, drivers and loads

2. **Air pollution**: Trucks, trains and ships are some of the largest pollution in the area.

3. **Noise pollution**: A large amount of noise pollution comes from trucks and trains in the area.

4. **Visual pollution**: from trucks and trains

5. **Inadequate and Ineffective truck enforcement**: Needed inspection and enforcement of safety, air quality, noise pollution, weights and size of about 30,000 trucks leaving the ports per day, additionally thousands of trucks making the second and third movements of containers in the GCCOG area.

6. **Economic stability and low employment**: Economic growth more jobs in the area is needed.

7. **Damaged pavement and bridges**: These structures get damaged from heavy over weight and oversized trucks.

8. **Cost**: What will it cost to fix so many truck safety and enforcement issues for safety and protection of the general public through the area?

9. **Funds**: Where will the funds to cover the cost of the many truck safety and enforcement issues for the safety and protection of public and goods movement throughout the area.
10. **Mixed land use:** Where can the truck enforcement facilities be placed that would not be adjacent to homes, schools, day care center, libraries, hospitals, nursing homes.

11. **Quality of life:** In the GCCOG area the quality of life needs to improve.

## 20. Consumers concerns

1. **Timely movement of goods:** Goods traveling directly to consumers, stores and businesses needs to be timely for the Local, State and National consumers

2. **Capacity of the goods movement industries:** Both public and private needs to provide an effective, efficient and seamless goods movement system that will keep up with current and future demands for the Local, State and National consumers. Truck enforcement facilities are a necessary part of a healthy and seemly goods movement system.

### AREA NEEDS SUMMARY

Based on the all of the preceding needs information, these truck enforcement needs for goods movement are complex, huge in scale, multilayered, multi-institutional, environmental, with economic implications and also, with national goods movement concerns. Some of the major contributing factors of safety, security and protection deficiencies, and the needs for more truck inspections and enforcement that have to be addressed. The major issue for GCCOG is the lack of permanent truck inspection and enforcement facilities along I-710, the primary truck route to and from the ports. Minimal inspection of the trucks that service the ports takes place in the GCCOG area. For effective commercial vehicle enforcement, truck inspection and enforcement facilities would need to meet the operational hours at the ports. One of the major concerns for GCCOG is the extremely large volumes of trucks. While truck safety remains a major safety initiative for the GCCOG, these large volumes make inspection (especially with a single platform static scale for weight) of all the trucks impossible. Therefore, it appears that new paradigms need to be developed to manage these large volumes of trucks that can be effective but not disruptive to trucking operations and does not affect freeway operations as well. It seems one of the needs that has to be addressed by this study is the use of transportation technology to assist with this in a method and manner that may not have been deployed in the past.

### FREEWAYS IN NEED OF COMMERCIAL VEHICLE ENFORCEMENT STRATEGIES

Figure 2 shows the study area that includes, Gateway Cities COG and the surrounding areas. The following list is the freeways that traverse this region and are shown on the map. Except for the I-405 none of these other freeways have been equipped with any commercial vehicle enforcement facilities. These facilities on I-405 at the Carson Street overpass are obsolete for the current truck volumes using this corridor. The freeways that encompass this study area include: I-5, I-405, SR-47, I-105, I-710, SR-91, I-110, I-605 & SR-103

In the meantime, the ports continue to grow along with the population of Southern California. For example, truck projections indicate that by the year 2030 there will be almost 70,000 trucks a day using the I-710 freeway south of its interchange with I-405. Obviously major freeway improvements are needed now and more in the future. In the meantime, new commercial vehicle
enforcement strategies present opportunities to better manage and regulate these large volumes of trucks on these highway systems. Also, with the large number of freeways and routes available to truck drivers, complete coverage for all of these routes and freeways will be difficult using traditional truck inspection and enforcement methods.

**AREA STAKEHOLDERS** (the ones who benefit directly and indirectly from a local and effective commercial vehicle enforcement program)

The following is a small list but not limited to all of the stakeholders:

- The motoring public
- Trucking Industry (Commercial vehicles)
- Federal Highway Administration (FHWA)
- California Statewide Goods Movement Initiative
- California Highway Patrol (CHP)
- California Department of Transportation (Caltrans)
- Los Angles County

![Figure 2](Los Angeles County Freeway System)
The common threads from the stakeholders’ for commercial vehicle enforcement:
Safety through protection. Stakeholders that were interviewed are concerned with the effect of the increasing number of commercial vehicles and ineffective enforcement of commercial vehicles within the region. Meetings were held with staff of CHP and Caltrans to receive their input. CHP and Caltrans are already working together to develop a site feasible for a commercial vehicle enforcement site on I-710 near the Ports of Los Angeles and Port of Long Beach to provide an effective enforcement facility within this region. This is only one of many legal route trucks can take to and from the ports. Therefore, the effectiveness of this one station is dependant on bypass facilities to be considered and developed on each of the other possible bypass routes running parallel to I-710. This could provide a level of protection for people and roadways through safer trucks, safer loads, safer hazmat loads, less pavement damage, less bridge damage, more driver credentials and more truck credentials. But, this approach does not cover the second, third and sometimes fourth movement of goods in the GOCCOG area. It is estimated that the second, third and sometime forth movement of containers may be heavier by weight than the first movement out of the ports. Therefore, it is equally, if not more effective to also have enforcement facilities strategically placed for those second and third movements. This can be achieved through a more effective and efficient enforcement network using real time information (and other relevant information) that is disseminated to CHP for enforcement.

CURRENT APPROACH TO TRUCK ENFORCEMENT

The following enforcement facility Classes A through D and mini-sites definitions are excerpts from the 2001 Weigh Station Inventory of Needs, Prepared by the Department of California Highway Patrol and in cooperation with the California Department of Transportation:

Class “A” facilities generally have Weigh-in-Motion and static scales for the weighing of vehicles, and covered areas for the inspection of vehicle equipment. The covered inspection area should be constructed with three or more bays (at least one designed without inspection pits). The number of bays is determined by the average daily truck traffic and projected long-term needs for the location. The facility should have an open storage area for legalizing loads, a parking area, and area to permit the turning of trucks for reweighing. Class “A” facilities are designed and staffed for a primary focus on the inspection of vehicle equipment and loads during all hours of operation.
Class “B” facilities generally have weigh-in-motion and static scales for the weighing of vehicles, and covered inspection areas for the inspection of vehicle equipment. The covered inspection area should be constructed with two or more bays (at least one designed without an inspection pit). The number of bays is determined by the average daily truck traffic and projected long-term needs for the location. The facility should have an open storage area for legalizing loads, a parking area, and an area to permit the turning of trucks for reweighing. Class “B” facilities are designed and staffed for a primary focus on the inspection of vehicle equipment and loads during all hours of operation.

Class “C” facilities are designed and staffed for a primary focus on the inspection of vehicle equipment and loads. Class “C” facilities not equipped with a covered inspection area and/or under-truck lighting should direct primary focus on vehicle inspections during daylight hours. During periods of darkness or inclement weather this focus would necessarily be redirected toward size, weight, and loading enforcement, as well as toward conducting Commercial Vehicle Safety Alliance Level II inspections of driver qualifications and topside vehicle equipment.

Class “D” facilities are located at strategic points on major and secondary highway routes. Operational hours of these facilities are based on such factors as: the average daily truck traffic, peak truck traffic hours, and seasonal needs. These facilities shall have scales designed for the weighing of vehicles and may have a limited open area for the inspection of vehicle equipment.

Accommodations should be made for the installation of the mainline bypass system for those facilities participating in the program. Class “D” facilities are designed and staffed for a primary focus on the weighing of vehicles.

Mini-sites are designed as safe locations for portable scale operations. Mini-sites are strategically located on highways with an above-average volume of commercial vehicle traffic to screen vehicles which may use bypass routes to avoid commercial facilities. There are no above-ground facilities at mini-sites.

Mini-sites should be designed to accommodate portable scales. The site should include an area designed for truck inspections, and may be randomly used by either platform scale personnel or Mobile Road Enforcement officers.

**Class “A” and “B” enforcement facilities:** are for roadways with more than 2,000 commercial vehicles in both directions in a 24 hour period, not including 2-axle trucks. All of the freeways in the Gateway Cities COG area exceed 2,000 trucks in both directions in a 24 hour period. The I-710, I-605, I-105 and 91 exceed 20,000 trucks in both directions in a 24 hour period and this volume of trucks is growing. These corridors meet the threshold for Class A and B enforcement facilities in some cases by 10 folds or more.

Both the class A and B use Weigh-in-motion (WIM) either on a truck only ramp off of the roadway or on the mainline in conjunction with PrePass. A WIM is located on a truck only ramp all of the trucks must exit the roadway and enter this ramp to be weighed at a speed less than the mainline posted speed. Therefore, they brake to achieve the proper speed through the WIM area for accurate weighing. If the weights measured by the WIM for any of the trucks axles, axles groups and gross weights do not exceed preset limits the truck will be sent back the roadway.
This ramp WIM requires all trucks to exit the mainline to be WIM weighed, this reduces the capacity of the mainline and the WIM sorter. WIM systems that are located on the mainline, they are usually in conjunction with a PrePass system. In the case the WIM is only weighing the trucks that are in the PrePass system. The percentage of PrePass trucks in the Gateway Cities COG area is small. Therefore, most of the trucks would not be WIM weighed on the mainline. All trucks need to be WIM weighed on the mainline to maximize capacity of both the mainline and the weigh station. Class A and B use legal for trade single platform static scales to write violation against. The flow rate of these single platform static scales is low, about 50 trucks per hour. This flow rate at the static scales depends on the experience of the truck driver, experience of the scale operator and number of axles on the truck. Multi-platform static scales can process 75-80 trucks per hour. When a WIM is integrated with a multi-platform static scale for auto-release the flow rate goes up to 100 trucks per hour.

**Class “C” and “D” enforcement facilities:** are for roadways with more than 600 commercial vehicles in both directions in a 24 hour period, not including 2-axle trucks. Most of the arterial streets in the Gateway Cities COG area exceed 600 trucks in both directions in a 24 hour period. Washington Boulevard, Slauson Boulevard, Firestone Boulevard, Imperial Highway, Rosecrans Avenue, Alondra Boulevard, Artesia Boulevard, Del Amo Boulevard, Willow Street, Pacific Coast Highway, Wilmington Boulevard, Avalon Boulevard, Alameda Street, Santa Fe Avenue most of these exceed 2,400 trucks in both directions in a 24 hour period and this volume of trucks is growing. These corridors meet the threshold for Class C and D enforcement facilities in some cases by 4 folds or more.

Class C and D use legal for trade single platform static scales against which to write violations. The flow rate of these single platform static scales is low, about 50 trucks per hour. This flow rate at the static scales depends on the experience of the truck driver, experience of the scale operator and number of axles on the truck. Multi-platform static scales can process 75-80 trucks per hour. When a WIM is integrated with a multi-platform static scale for auto-release the flow rate goes up to 100 trucks per hour.

**Mini-sites enforcement locations:** typically do not have a WIM or a fixed static scale. Therefore, when these sites are used for weight enforcement portable scales are used. Only 5 to 10 trucks can be weighed per hour. Flow rates with portable scales depend on the experience of the truck driver, experience of the scale operator and number of axles on the truck.

The Gateway Cities COG area truck traffic on its roadways and arterial streets are too high in volume and demand for a mini-site enforcement location to be effective for the area it would serve. Where there are streets with lower truck traffic volumes and a mini-site for enforcement may be appropriate, there is no available land of like kind use for the facility.

**Current and Future Enforcement Facilities:** for the Los Angeles County and surrounding areas is shown in Figure 3. The only existing enforcement facilities in this area is the Carson stations: Northbound and Southbound on the I-405 at mile marker 12. These facilities as per the 2001 Weigh Station Inventory of Needs Report defines these as Class D facilities. As stated above Class D facilities does not have a WIM but only has one single platform static scale. With these limitations the Carson enforcement facilities do not have the capacity to safely process the high volume of truck on the I-405 freeway.
The Los Angeles County and surrounding areas are not planned or programmed for new enforcement facilities of any type as per the 2001 Weigh Station Inventory of Needs Report. Even though there are more trucks per lane mile in the GCCOG area than anywhere else in the State of California. See Figure 3.
STRATEGIES TO IMPROVE SAFETY, SECURITY AND PROTECTION

Based on the preceding analysis, the traditional single platform static scale and limited WIM use the facilities constructed in California will not be appropriate for the large volume of trucks in the GCCOG area shown in Figure 2. A new approach – A Commercial Vehicle Enforcement Network (CVEN) – is recommended. This would include the construction of permanent truck inspection and enforcement facilities wherever they can be developed in the GCCOG area that would be tied (or linked) through a transportation technology information system and network. This network would also include a series of mainline freeway virtual monitoring stations for weight, size, credentials as well as safety items. This network, as subsequently described, would be operated in a new manner enabling CHP to monitor and enforce (and even ticket) by changes to laws and codes to allow this new type of enforcement.

A Commercial Vehicle Enforcement Network (CVEN) could advance a multifunctional system, multi-sites approach to commercial vehicle enforcement for the GCCOG area to increase protection of the roadway pavement, bridges and safety for people and freight on complete end-to-end trips as efficiently as possible using technology, while controlling cost. Rather than focusing on a single enforcement facility to be added to the local area, a network of different types of systems and sites are needed to effectively enforce the multiple freeways, highway, roadways and streets that commercial vehicles can use into and out of the two ports and throughout the GCCOG area. Funding (local, state and federal) is needed to plan, design, construct, operate, maintain and repair a commercial vehicle enforcement network through technology that monitors connectivity of goods movements between origin and end points.

Further, the CVEN could:

- Be strategic in what makes up each type of commercial vehicle enforcement site
- Be strategic in where each of the different types of commercial vehicle enforcement site is located
- Minimize the number of enforcement sites needed to be effective
- Minimize cost of CVEN for the GCCOG area while maintaining an adequate, effective and efficient Commercial Vehicle Enforcement Network (CVEN)
- Not interrupt the goods movement industries more than necessary to ensure that the trucks and drivers in the GCCOG are safe, within weight and size limits.
- Be integrated into an ITS framework or program for GCCOG that could deploy a series of equipment to monitor, manage, and coordinate truck traffic and truck violations.
- Be a truck data collation network that can be your by planning, bridge designers, CHP, private industries to name a few
- Data collected by the CVEN could be sent to a central clearing house
- Be an instrument of change that is continually improved upon (quickly implement changing legislation).
- Stress an open and comprehensive procedure among stakeholders, and partners.
- Make certain the stakeholders value their participation in the process.
- Strive for complementary strategies between stakeholders.
- Enhance coordination and sharing of transportation and commercial vehicle information with specific partners.
- Maintain a consistent message.
- Expand consensus building to include both private and public partners.
• Be part of an integrated Intelligent Transportation System (ITS) program for the GCCOG area that will focus on goods movement and trucks.

The following are strategies to address the existing safety, security and protection conditions on the freeways, highways and streets throughout the study area:

**Commercial Vehicle Enforcement Network (CVEN) could be comprised of 3 different types of enforcement sites as follows**

1. **Mainline multi-functional fixed commercial vehicle enforcement facilities (manned facilities):** for the purpose of enforcing the weight, length, height, width, classification, speed, credentials of drivers, trucks, loads and level one safety inspections.

2. **Mainline multi-functional commercial vehicle enforcements sites (non-manned sites):** for the purpose of enforcing the weight, length, height, width, classification, speed, credentials of driver, credentials of truck, and credentials of loads and level one safety inspections.

3. **By-pass enforcement sites (non-manned sites):** for routes around fixed enforcement facilities and through city streets. Each site’s purpose is enforcing the weight, classification and speed of trucks which by-pass the fixed facilities and are abusing city streets.

**STRATEGIES TO PROVIDE “REAL TIME” COMMERCIAL VEHICLE, DRIVER AND LOAD INFORMATION**

**Information management sharing:** to CHP so they will be informed of commercial vehicles that are in violation of laws and codes on the roadways. When instructed to do so, trucks will be redirected to commercial vehicle enforcement facilities. This will require a multi-integration of commercial vehicle, driver and load information to be collected and then disseminated to CHP in “real-time”.

**Information that needs gathering in “real time” (limited list follows):**

- Traffic volume by classification of vehicles
- Confirmation of commercial vehicles for enforcement by CHP
- Weight of trucks
  - Axle weight
  - Axle group weight
  - Gross weight
- Size of trucks
  - Overall length
  - Overall width
  - Overall height
- Unsafe trucks
  - Brake system
  - Tires
- Lights
- Other mechanical
- Log book
- Driver’s health
- Polluting trucks
  - Type of pollution
  - Volume of pollution
- Commercial driver credentials
  - Commercial Drivers Licenses
  - Health cards
  - Outstanding warrants
  - TWIC (Transportation Worker I.D. Card)
- Commercial vehicle credentials
  - Tag
  - Registration
  - Safety inspection
  - Insurance and/or bonds
  - Fuel (IFTA)
- Cargo information
  - Hazardous
  - Agricultural
  - Point of origin/destination (for Homeland Security or DOD)
- Hazmat information
  - Type
  - Volume
- US DOT #
- Tag #
- Log Book information
- Permits
  - Type of permit
  - Condition of permit
  - Required route by permit
- Vehicle Infrastructure Integration (VII) system data
- Electronic fines collection
- Electronic size, weight use fee collection

Information Sharing From Origination Points:

- Roadway devices
  - Mainline Weigh-in-motion (MWIM): with technology to capture weights, axles spacing, classification and speeds at freeway speeds.
  - Multiplatform static scales with auto-release function: that process trucks on and off static scale automatically. This approach will increase throughput of the static scales and reduce the number of required static scales to meet the truck volume demands.
  - Over height detection: that confirms if a vehicle or any part there of is taller than a described distance.
Vehicle dimension-in-motion (VDIM): that measures the overall height, width and length of the vehicles.

Automatic Vehicle Identification (AVI) system: that reads transponders to retrieve truck credentials.

Automatic Driver Identification (ADI) system: that reads transponders to retrieve driver credentials.

Automatic Load Identification (ALI) system: that reads transponders to retrieve load credentials.

Speed detection: that reads one of many types of objects to calculate speed of moving vehicles.

Video cameras: that will be an extension of the eyes for the TMC personnel to see remote incident locations.

Text recognition: that reads text on the side of static or moving vehicles.

Traveling public (cellular phones): that calls to report a problem truck in their area.

Law enforcement on patrol: that calls to report a problem truck in their area.

Commercial vehicle enforcement locations: with technology to capture weights, axles spacing, height, width, length, transponder information and speed. Also, some location with infrastructure to do level one inspections.

Safety and Fitness Electronic Records (SAFER) System: that is a database or clearinghouse of commercial vehicle and driver safety records to be used nationwide.

Commercial Vehicle Information Exchange Window (CVIEW) System: that is a conduit for information to move through from the SAFER clearinghouse to the law enforcement computer located either in a building or patrol vehicle.

Commercial Vehicle Information Systems and Networks (CVISN): that is a network for information to move through from the SAFER and other partner’s clearinghouses to the law enforcement computer located either in a building or patrol vehicle.

Commercial Vehicles: from their Vehicle Infrastructure Integration (VII) system

Information Sharing of Through Points:

Traffic Management/Information Centers: is the hub for the information. The information is coming from the origin points, then filtered, processed and solutions are sent to the appropriate party by:

- Regional TMC
- Sub-regional TMC

CHP Dispatch Centers

Commercial vehicle enforcement locations

- Safety and Fitness Electronic Records (SAFER) System
- Commercial Vehicle Information Exchange Window (CVIEW) System
- Commercial Vehicle Information Systems and Networks (CVISN)

Port of Long Beach and Port of Los Angeles, Advanced Transportation Management Information System (ATMIS): for informing truck drivers of road congestion while arriving, in transit or leaving the seaport (in process)

California Highway Patrol in vehicle information system: for informing officers of commercial vehicles that may be in violations of regulations
• **Roadside Changeable Message Signs (CMS):** to inform thousands to tens of thousands of commercial drivers and other motorists, of road conditions

• **Fixed commercial vehicle enforcement locations:** for safer trucks on the roadway and less pavement damage to the roadways

• **Mobile commercial vehicle enforcement locations:** for safer trucks on the roadway and less pavement damage to the roadways

• **Safety and Fitness Electronic Records (SAFER) System:** for safer trucks on the roadway

• **Commercial Vehicle Information Exchange Window (CVIEW) System:** for safer trucks on the roadway

• **Commercial Vehicle Information Systems and Networks (CVISN):** for safer trucks on the roadway

**STRATEGIES FOR PLACEMENT OF ENFORCEMENT FACILITIES AND SITES**

These enforcement facilities and sites within the CVEN need to be placed in a manner that all trucks must pass through these facilities or sites regardless the type of truck:

**Truck types:**

1. **Port trucks:** going to and leaving from the Ports of Los Angeles and Long Beach. These trucks are the first movement of goods leaving the Ports or the last movement of goods entering the Ports. It is estimated that 30,000 trucks leave the Ports per day.

2. **Local trucks:** moving within the Gateway Cities COG area. These trucks are the second, third and sometimes the fourth movement of goods. These trucks are going to and from trans-loading centers, cross dock centers, warehousing centers, distribution centers and making local pickups and drops. It is estimated that 30,000 truck trips are made within the Gateway Cities COG area per day.

3. **Long haul trucks:** entering and leaving the Gateway Cities COG area. These trucks are the last movement of goods leaving the Gateway Cities area. They are also, the first movement of goods entering the Gateway Cities COG area from the landside. These trucks may be going directly to the Ports or to one of the local goods movement centers. It is estimated that 15,000 trucks are entering or leaving the Gateway Cities COG area from landside per day.

Placement strategies of enforcement facilities within the CVEN for each type of truck; Ports trucks, Local trucks and Long haul trucks must be optimized for effectiveness and efficiency so that CHP can enforce these trucks regardless of truck type. The following are strategies for the placement of enforcement facilities within the CVEN per type of truck:

**Enforcement facilities and site placement per truck type:**

1. **Port trucks:** leaving or entering the ports must travel on northbound/southbound freeways, roadways or streets to get out of or into the Ports. A line of mainline
enforcement sites on these northbound/southbound corridors will be an effective and efficient line of enforcement for CHP. Where this east/west line for placement of these mainline enforcement sites on these north/south corridors needs to be strategically placed. This east/west line location needs to be north of the Ports and a location where a minimum of north/south corridors cross east/west corridors to reduce the number of bypass potentials around the enforcement sites. This will also, minimize the number of enforcement sites needed to provide an effective line of protection in the form of enforcement sites for CHP. This would also reduce cost and the amount of data points to provide an effective enforcement system. The Pacific Coast Highway an east/west corridor that is also, north of the Ports and has the least number of north/south corridors crossing it. Therefore, the Pacific Coast Highway is a prime location line for the placement of enforcement sites on the north/south corridors crossing this roadway. The north bound sites could be placed on each north/south corridor just south of the Pacific Coast Highway. The south bound sites could be placed on each north/south corridor just north of the Pacific Coast Highway.

2. **Local trucks:** are traveling the roadways, highways and streets of Gateway Cities COG. Most of these trucks traverse over the Los Angeles River going to and from different goods movement locations within the Gateway Cities COG area. The Los Angeles River is a north/south river while flowing through the Gateway Cities COG area. Minimal corridors traverse over the Los Angeles River. Therefore, this river provides for a natural line of protection for enforcement sites on the east/west corridor traversing over this river. Due to the fact that minimal corridors traverse over the Los Angeles River the number of enforcement sites required would also be minimized. This would also reduce cost and the amount of data points to provide an effective enforcement system.

3. **Long haul trucks:** are entering and leaving the Gateway Cities COG area primarily on the freeway system, for example; 91, 105, 605, 5, and the 110. These freeways are the main routes from the landside to the goods movement facilities within Gateway Cities COG area. These corridors are also located at the edge of where the goods movement facilities are located in the GCCOG and Los Angeles County area. This fact makes each of these corridors (91, 105, 605, 5, and 110) prime locations for enforcement sites.

In order to adequately deal with these various types of trucks, a series of enforcement areas are proposed for the CVEN as shown in Figure 4. Three zone (or areas) are proposed as follows:

- Port Enforcement Area
- Local Enforcement Area
- County Enforcement Area

**Common thread between truck types:** is that most of the time the I-710 freeway is used by all three truck types. This would make the I-710 freeway a prime location for mainline multi-functional fixed commercial vehicle enforcement facilities.

**COMMERCIAL VEHICLE ENFORCEMENT FACILITY & SITE TYPES**

1. **Mainline multi-functional fixed commercial vehicle enforcement facilities (manned facilities):** for the purpose of enforcing the weight, length, height, width, classification, speed, credentials of driver, credentials of truck, and credentials of loads and level one safety inspections. The culling portion of these facilities will be on the mainline while a modified Class A or B facility will be adjacent to mainline. These are safe locations for
weight, size and safety inspection enforcement of high volumes of commercial vehicles with part of the facilities in the mainline for collecting data about the vehicles, drivers
and loads. These mainline data collection systems will receive data from commercial vehicles and process the violators in real time. Legal for trade Mainline Weigh in Motion (MWIM) will be used to define weights for fines or a weight use fee. Legal for trade Vehicle Dimension in Motion (VDIM) will be used to define if trucks and loads are oversize and if so, process fines or size-use fees. Automated Vehicle Identification (AVI) readers will check truck credentials, date of last inspection and other items. Automated Driver Identification (ADI) readers will check driver’s credentials and other items. Automated Load Identification (ALI) readers will check load credentials and other items. 

The portion of the facility for physical inspection, static weighing and parking is adjacent to the mainline. There are two or three sites with possibilities to become a manned, fixed enforcement station on, or near I-710. These might or might not be immediately adjacent to the freeway depending on a number of issues, including land availability and suitability. The possible locations for these facilities are discussed later in this report along with their use and operations. In the future these mainline enforcement systems will also, remotely read electronic logbooks and other Vehicle Infrastructure Integration (VII) systems data. When the violation is of the type a truck has to be taken out of service, then it will be directed to the pull off for verification. When the out of service violation is verified, the truck will be held at that location.

2. **Mainline multi-functional commercial vehicle enforcements sites (non-manned sites):** for the purpose of enforcing the weight, length, height, width, classification, speed, credentials of drivers, trucks, loads and checking for when last safety inspection dates. These fixed facilities are on mainline and are unmanned enforcement sites. Mainlines would be equipped with commercial vehicle data collecting systems. These mainline data collection systems will receive data from commercial vehicles and process the violators in real time. Legal for trade Mainline Weigh in Motion (MWIM) will define weights for fines or a weight use fee. Legal for trade Vehicle Dimension in Motion (VDIM) will define if trucks and loads are oversize and if so, process fines or size-use fees. Automated Vehicle Identification (AVI) readers will check truck credentials, date of last inspection and other items. Automated Driver Identification (ADI) readers will check driver’s credentials and other items. Automated Load Identification (ALI) readers will check load credentials and other items. Operations activities could be in a TMC, dispatch center or mobile enforcement in the area. A commercial driver that is in violation could communicate through one of many modes (telephones, cell phones, dedicated T1 lines, or internet). In the future these mainline enforcement systems will also, remotely read electronic logbooks and other Vehicle Infrastructure Integration (VII) systems data. When the violation is of the type a truck has to be taken out of service, then it will be directed to the pull off for verification. When the out of service violation is verified, the truck will be held at that location.

3. **By-pass enforcement sites (non-manned sites):** for routes around fixed enforcement facilities or sites and through city streets. Each sites purpose is the enforcing the weight, classification and speed of trucks which are bypassing the fixed facilities or sites and are abusing city streets. These fixed bypass sites will be on exit ramps and will be unmanned enforcement. Ramps equipped with commercial vehicle data collecting systems. These ramp data collection systems will receive data from commercial vehicles and process the violators in real time. Legal for trade Ramp Weigh in Motion (RWIM) will be used to define weights for fines or weight use fees. Legal for trade Vehicle Dimension in Motion
(VDIM) will be used to define if trucks and loads are oversize and if so, process fine or size use fees. Automated Vehicle Identification (AVI) readers will check truck credentials, date of last inspection and other items. When the violation is of the type a truck has to be taken out of service, then it will be directed to the pull off for verification. When the out of service violation is verified, the truck will be held at that location. Operations activities could be in a TMC, dispatch center or mobile enforcement in the area. A commercial driver that is in violation could communicate through one of many modes (telephones, cell phones, dedicated T1 lines, or internet). In the future these mainline enforcement systems will also, remotely read electronic logbooks and other Vehicle Infrastructure Integration (VII) systems data.

**MOBILE COMMERCIAL VEHICLE ENFORCEMENT TYPES**

1. **Manned Mobile Enforcements:** These are mobile patrol vehicles that are equipped with on-board data collecting systems. These on-board systems will receive data from virtual bypass ramp sites to intercept potential violators. Automated tag readers for collection of truck credentials. Automated Vehicle Identification (AVI) readers to check truck credentials, date of last inspection and other items. In the future these mobile enforcement units will also, remotely read electronic logbooks and other Vehicle Infrastructure Integration (VII) systems data.

2. **Unmanned Mobile Enforcement on City Streets:** These are mobile patrol vehicles that are equipped with on-board data collecting systems. These on-board systems will receive data from commercial vehicles. Then send this data to dispatch and mobile enforcement teams to address potential violators. Automated tag readers for the collection of truck credentials. Automated Vehicle Identification (AVI) readers to check truck credentials, date of last inspection and other items. This system can be used to confirm problem trucks on unprotected corridors. In the future these mobile enforcement units will also, remotely read electronic logbooks and other Vehicle Infrastructure Integration (VII) systems data.

Table 1 lists the functional options per facility and site type that could be deployed in the GCCOG area.
### Functional Options per Enforcement Facility Type:

<table>
<thead>
<tr>
<th>Type</th>
<th>Functions</th>
<th>Truck Volume</th>
<th>Effectiveness</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mainline multi-functional fixed commercial vehicle enforcement facilities (manned facilities):</td>
<td>Signed (OPEN/CLOSED)</td>
<td>Low to medium</td>
<td>Med.</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>WIM on mainline</td>
<td>Medium to high</td>
<td>High</td>
<td>For not easy to bypass</td>
</tr>
<tr>
<td></td>
<td>Ramp WIM</td>
<td>Highest</td>
<td>High</td>
<td>For not easy to bypass</td>
</tr>
<tr>
<td></td>
<td>Automated Vehicle Identification (AVI)</td>
<td>Medium to high</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td></td>
<td>License Plate Reader (LPR)</td>
<td>Medium to high</td>
<td>Med.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vehicle Dimension in Motion (VDIM)</td>
<td>Medium to high</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brake Check</td>
<td>Medium to high</td>
<td>Med.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tire Check</td>
<td>Medium to high</td>
<td>Med.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hazmat Placard Reader (HPR)</td>
<td>Medium to high</td>
<td>Med.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Speed Check</td>
<td>Medium to high</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Container/Load Check</td>
<td>Medium to high</td>
<td>Med. To high</td>
<td></td>
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<tr>
<td></td>
<td>Radiation Check</td>
<td>Medium to high</td>
<td>Low to med.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electronic Logbook Reader (ELR)</td>
<td>Medium to high</td>
<td>Low</td>
<td></td>
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<tr>
<td></td>
<td>Electronic Bill of Leyden check</td>
<td>Medium to high</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Driver Credentials Check</td>
<td>Medium to high</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Truck Credentials Check</td>
<td>Medium to high</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Static Scales (Three platform scales)</td>
<td>Medium to high</td>
<td>Med. To high</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Static Scales (Four platform scales)</td>
<td>High</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Administration/Control Building</td>
<td>Medium to high</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inspection Barn</td>
<td>Medium to high</td>
<td>High</td>
<td></td>
</tr>
</tbody>
</table>
## Functional Options per Enforcement Facility Type:

<table>
<thead>
<tr>
<th>Type</th>
<th>Functions</th>
<th>Truck Volume</th>
<th>Effectiveness</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mainline multi-functional commercial vehicle enforcement sites:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Interface for employees</td>
<td>Traffic Management Center</td>
<td>Medium to high</td>
<td>Med. To high</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHP Head Quarters</td>
<td>Medium to high</td>
<td>Med. To high</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHP District Office</td>
<td>Medium to high</td>
<td>Med. To high</td>
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</tr>
<tr>
<td></td>
<td>Local CHP patrol vehicle/laptop</td>
<td>Low</td>
<td>Urban/rural</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Axle spacing measurements</td>
<td>High</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Legal for trade</td>
<td>Vehicle Dimension in Motion (VDIM)</td>
<td>High</td>
<td>High</td>
<td></td>
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<tr>
<td></td>
<td>Speed check</td>
<td>High</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brake check</td>
<td>Low to med.</td>
<td>Low to med.</td>
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<tr>
<td></td>
<td>Tire check</td>
<td>Low to med.</td>
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</tr>
<tr>
<td></td>
<td>WIM on mainline</td>
<td>High</td>
<td>High</td>
<td>For not easy to bypass</td>
</tr>
<tr>
<td></td>
<td>Automated Vehicle Identification (AVI)</td>
<td>Low to med.</td>
<td>Low to med.</td>
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<td>License Plate Reader (LPR)</td>
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<td>Radiation Check</td>
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<tr>
<td></td>
<td>Electronic Logbook Reader (ELR)</td>
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<tr>
<td></td>
<td>Electronic Bill of Leyden check</td>
<td>Low to med.</td>
<td>Low</td>
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<tr>
<td></td>
<td>Driver Credentials Check</td>
<td>Low to med.</td>
<td>Low to med.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Truck Credentials Check</td>
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<td></td>
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<th>Effectiveness</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>By-pass enforcement sites (non-manned sites):</td>
<td>Traffic Management Center</td>
<td>Medium to high</td>
<td>Med. To high</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHP Head Quarters</td>
<td>Medium to high</td>
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<td>Axle spacing measurements</td>
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<td>High</td>
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<td></td>
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<td>Low to med.</td>
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</tr>
</tbody>
</table>

### RECOMMENDATIONS – ENFORCEMENT SITES

**CVEN system for the GCCOG area:** Figure 5 shows the potential locations for permanent truck inspection facility sites and possible locations for automated devices on local freeways.

Given the limited land available for permanent truck inspection or enforcement facilities, this type of facility will need to be built in or next to existing, fully developed communities. This type of facility needs to be acceptable to these communities and address their concerns. These concerns could include (but are not limited to): air quality from passing and queued trucks, noise, water quality, light and glare, funding participation and congestion.

As part of this study, numerous sites were investigated to determine their acceptability as possible truck inspection and enforcement sites near the I-710. These sites were evaluated based on the following criteria: Strategic location for truck enforcement, zoning, adjacent land use type, access to and from mainline, size of available land, operational flow of site geometry. Three focus areas (Port Trucks, Local Trucks and Long Haul Trucks) have been reviewed and analyzed for potential sites. Each of these focus areas have their own strategies as discussed above.
The following outlines locations for each type of truck traffic type:

1. **Mainline multi-functional fixed (or permanent) commercial vehicle enforcement facilities (manned facilities):**
   a. Three on the I-710
      i. Del Amo Facility Sites (one northbound and one southbound)
         1. Two multi-bay inspection barns
         2. Two multi-agency administration buildings
         3. Four lanes of WIM, VDIM, AVI, ADI, ALI
         4. Eight multiplatform static scales
         5. Truck parking spaces
         6. Zoning
         7. Adjacent land use
         8. Number of land owners
         9. Ease of access to and from mainline
         10. Operational geometry
      ii. Southgate Facility Site (one northbound)
          1. One multi-bay inspection barns
          2. One multi-agency administration buildings
          3. Two lanes of WIM, VDIM, AVI, ADI, ALI
          4. Four multiplatform static scales
          5. Truck parking spaces
          6. Zoning
          7. Adjacent land use
          8. Number of land owners
          9. Ease of access to and from mainline
          10. Operational geometry
      iii. Washington Blvd. Facility Site (one bidirectional) (City of Commerce)
          1. One multi-bay inspection barns
          2. One multi-agency administration buildings
          3. Four lanes of WIM, VDIM, AVI, ADI, ALI
          4. Four multiplatform static scales
          5. Truck parking spaces
          6. Zoning
          7. Adjacent land use
          8. Number of land owners
          9. Ease of access to and from mainline
          10. Operational geometry
   b. I-405 Sites
      iv. Carson Facility Sites (one northbound and one southbound)
         1. Two multi-bay inspection barns
         2. Two multi-agency administration buildings
         3. Four lanes of WIM, VDIM, AVI, ADI, ALI
         4. Eight multiplatform static scales
         5. Truck parking spaces
         6. Zoning
         7. Adjacent land use
8. Number of land owners
9. Ease of access to and from mainline
10. Operational geometry

2. Mainline multi-functional commercial vehicle enforcements sites (non-manned sites):
   a. **8 Port Truck Enforcement Sites**: on north/south corridors near the Ports of Los Angeles and Long Beach. The Pacific Coast Highway has the least number of north/south corridors crossing it, compared to other corridors near these ports. This approach will minimize the number of sites to monitor all trucks arriving to and leaving from these ports.
      i. I-110
      ii. Figueroa Street
      iii. Wilmington Blvd.
      iv. Avalon Blvd.
      v. Alameda Street
      vi. 103
      vii. Santa Fe Ave.
      viii. I-710
   b. **11 Local Truck Enforcement Sites**: on east/west corridors near the Los Angeles River. The River provides a natural line for enforcement site for east/west truck movements.
      i. Willow Street
      ii. I-405
      iii. Del Amo
      iv. 91
      v. Alondra Boulevard
      vi. Rosecrans Avenue
      vii. I-105
      viii. Imperial Highway
      ix. Firestone Boulevard
      x. Slauson Boulevard
      xi. I-405
   c. **6 Long Haul Truck Enforcement Sites**: on major freeways going to and out of the study area near the north, east and west perimeter of Gateway Cities COG area.
      i. 91/I-605
      ii. I-105/I-605
      iii. I-5/I-605
      iv. I-710/I-5
      v. I-105/I-110
      vi. I-91/I-110

3. **By-pass enforcement sites (non-manned sites)**: on exit ramps for trucks bypassing the mainline enforcement facilities.
   a. **4 By-pass Truck Enforcement Sites**: on exit ramps just prior or upstream of mainline enforcement facilities.
      i. Three on the I-710
         1. Del Amo Facility Site
         2. Southgate Facility Site

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3. Washington Blvd. Facility Site (City of Commerce)
   ii. One on the I-405
      1. Carson Facility Site

4. Laws, codes and standards: To optimize the effectiveness and efficiencies of the Commercial Vehicle Enforcement Network (CVEN) the following will need to be addressed.
   a. Revenue sharing of fines
   b. Standardize fine structure
   c. Update magnitude of fines to the level of damage and risk
   d. Extend the allowable rerouting miles for truck enforcement
   e. Transponder be issued and required with registration tag for trucks
   f. Weigh-in-Motion (WIM) devices be legal to write fines against
   g. Vehicle Dimension-in-Motion (VDIM) devices be legal to write fines against
   h. Automated Vehicle Identification (AVI) devices be legal to write fines against
   i. Automated Driver Identification (ADI) devices be legal to write fines against
   j. Automated Load Identification (ALI) devices be legal to write fines against

FACILITY REQUIREMENTS

1. Mainline multi-functional fixed commercial vehicle enforcement facilities (manned facilities):
   c. Three on the I-710
      i. Del Amo Facility Sites (one northbound and one southbound)
         1. Two multi-bay inspection barns
         2. Two multi-agency administration buildings
         3. Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
         4. Eight multiplatform static scales
         5. Truck parking spaces
      ii. Southgate Facility Site (one northbound)
         1. One multi-bay inspection barns
         2. One multi-agency administration buildings
         3. Two lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
         4. Four multiplatform static scales
         5. Truck parking spaces
      iii. Washington Blvd. Facility Site (one bidirectional) (City of Commerce)
         1. One multi-bay inspection barns
         2. One multi-agency administration buildings
         3. Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
         4. Four multiplatform static scales
         5. Truck parking spaces
    d. I-405 Sites
      i. Carson Facility Sites (one northbound and one southbound)
         1. Two multi-bay inspection barns
         2. Two multi-agency administration buildings
         3. Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
         4. Eight multiplatform static scales
         5. Truck parking spaces
2. Mainline multi-functional commercial vehicle enforcements sites (non-manned sites):
   a. 8 Port Truck Enforcement Sites:
      i. I-110
         ▪ Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
      ii. Figueroa Street
         ▪ Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
      iii. Wilmington Blvd.
         ▪ Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
      iv. Avalon Blvd.
         ▪ Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
      v. Alameda Street
         ▪ Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
      vi. 103
         ▪ Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
      vii. Santa Fe Ave.
         ▪ Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
      viii. I-710
         ▪ Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
   b. 11 Local Truck Enforcement Sites:
      i. Willow Street
         ▪ Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
      ii. I-405
         ▪ Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
      iii. Del Amo
         ▪ Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
      iv. 91
         ▪ Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
      v. Alondra Boulevard
         ▪ Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
      vi. Rosecrans Avenue
         ▪ Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
      vii. I-105
         ▪ Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
      viii. Imperial Highway
         ▪ Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
      ix. Firestone Boulevard
         ▪ Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
      x. Slauson Boulevard
         ▪ Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
      xi. I-405
         ▪ Four lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
   c. 6 Long Haul Truck Enforcement Sites:
      i. 91/I-605
         ▪ Eight lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
      ii. I-105/I-605
         ▪ Eight lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
      iii. I-5/I-605
         ▪ Eight lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
Eight lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)

iv. I-710/I-5
   - Eight lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)

v. I-105/I-110
   - Eight lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)

vi. I-91/I-110
   - Eight lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)

3. **By-pass enforcement sites (non-manned sites):**
   a. 4 By-pass Truck Enforcement Sites: on exit ramps just prior or upstream of mainline enforcement facilities.
   vii. Three on the I-710
       1. Del Amo Facility Site
          a. Two lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)
       2. Southgate Facility Site
          b. One lane of detection equipment (WIM, VDIM, AVI, ADI, ALI)
       3. Washington Blvd. Facility Site (City of Commerce)
          c. Two lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)

   viii. One on the I-405
       1. Carson Facility Site
          d. Two lanes of detection equipment (WIM, VDIM, AVI, ADI, ALI)

**FUNDING STRATEGIES**

Many of the stakeholders will benefit from an effective and efficient Commercial Vehicle Enforcement Network (CVEN). Could some of the funding be provided by these stakeholders to provide land, design, construct, maintain or repair the facilities and systems? (Suggest a partnership approach with shared funding sources) Funding will be needed to construct these facilities and then to provide a continual and ongoing annual stream of funding to assure annual operation and maintenance functions. The following are some possible funding approaches:

1. Increase fines sanctioned on commercial vehicles to match today’s values.
2. Additional federal funding to cover the national need for safe movement of goods, which must traverse through the GCCOG area to the nation.
3. Private funding of CVEN, which the private investor would receive part of the revenue from fines.
4. Transportation Agencies and/or State
5. A portion of the container fees used to fund the CVEN.
6. Local cities, and counties provide funding, which benefit from the CVEN.
GUIDING PRINCIPLES FOR FUTURE PLANNING, DESIGN AND DEVELOPMENT OF COMMERCIAL VEHICLE ENFORCEMENT STRATEGIES

1. Functional needs assessment driven
2. Multi-institutional (public and private) partnerships
3. Implement permanent inspection facilities (on I-710 in particular) as soon as possible
4. Near-term implementation of some technology facilities (within 2 years)
5. Concise, timely and accurate solutions to functional needs
6. Interoperability between solutions
7. Expandability within solutions
8. Challenge industries to develop new and better solutions using evolving technologies
9. Changes in laws and codes to allow for new paradigms for managing and monitoring large volumes of trucks for effective enforcement
10. Annual, adequate and reliable funding for operations and maintenance requirements
11. Addressing community concerns and input

IN SUMMARY

1. Many complex issues and needs
2. Truck volumes are huge in magnitude
3. Existing truck enforcement ineffective
4. Solutions needs to benefit all stakeholders at all levels
5. Creative funding is needed to implement solutions
6. Cost of no build is measured in reduction in quality of life, reduced effectiveness of communities, businesses (including goods moment) and individuals that live and visit here.
General Concerns
This type of project requires a close attention to each element and what other elements are dependant on it. For example: Static scales are dependant on the following; queue length, stop bar upstream, approach slabs, zero longitudinal slope, zero cross slope, curb, sidewalks, traffic lights, changeable message signs, roadway lighting both horizontal and vertical surfaces, lightning protection, sight lines from building, window locations, window size, elevation of finish floors, angle of windows to the scales and many others . . . This is just one small example of only one item. To define all the dependencies among all major and minor systems and subsystems that makeup an integrated Weigh-in-Motion station will be a large undertaking.

Overview
The sheer magnitude of trucks on the freeways and streets in the Gateway Cities COG area require a network of truck enforcement systems, virtual stations and Mainline WIM stations. These systems and facilities will need to operate twenty-four hours seven days a week for the effective enforcement of commercial vehicles traveling on the freeways and streets of Gateway Cities COG and surrounding area. There are several freeways and streets for the trucks to use while transporting their load away from and to the ports of Los Angeles and Long Beach. Therefore, just one or two truck enforcement facilities will not be effective for the magnitude of trucks and multiple bypass potentials. The core of this infrastructure strategically needs to be on or as near to these two ports as possible. All permitted and non-permitted commercial vehicles must process themselves through these facilities except if they are escorted by CHP. The trucks will be instructed how to proceed through these facilities by using chargeable message signs, signalization, fixed signs and verbal communication. The virtual stations and mainline WIM stations will cull trucks in excess of predetermined limits and route them to a static scale. Once a truck is on the static scale it will be checked against predetermined limits and processed appropriately by either an automated system or enforcement staff. Trucks not culled by these mainline systems will remain on the freeway. Trucks over on axle weight limits but not over on gross weight limits may be provided an option to park and shift its load, and then be reweighed. Other trucks on static scale may be instructed (by enforcement staff) to the inspection barn for inspection. Once trucks are released from static scale, inspection barn or truck parking area they may precede back to the freeway.
Glossary:
CMS - Changeable Message Sign
Downstream - moving in the direction, in which the traffic flows to.
External bridge - distance between the center of first axle and center of last axle of a vehicle
Internal bridge - distance between the center of two or more axles (also called “inner-bridge”)
King pin - hitch point between tractor and trailer
Upstream - moving in the direction opposite to that in which the traffic flows to.
VDIM – Vehicle Dimension-in-Motion
WIM - Weigh-in-Motion

The following is a small list of systems, subsystems and items that makeup a WIM station. This is not a complete list and their dependancies are not defined.
Roadway Control Items:
1. **Roadway**
   1.1 WIM control pavements shall be a minimum of 200' from the upstream edge of control pavements to the center line of the WIM.
   1.2 WIM control pavements shall be a minimum of 100' from the center line of the WIM to the downstream edge of control pavements.
   1.3 WIM control pavements shall have a maximum cross slope of 3%.
   1.4 WIM control pavements shall have a fixed cross slope from end to end.
   1.5 WIM control pavements shall have a smoothness that meets ASTM E1318-02.
   1.6 The distance between downstream edges of WIM control pavement and overhead signals for the exit gore shall be able to process trucks moving at 80 MPH.
   1.7 The distance between the overhead signal and gore for the static scale lanes shall be able to process trucks moving at 15 MPH.
   1.8 The distance between the static scales gores and each static scale control pavement shall be able to process trucks moving at 15 MPH.
   1.9 Static scale control pavements shall be 40 feet long at both ends.
   1.10 Static scale control pavements shall have a zero cross slope.
   1.11 Static scale control pavements shall have a longitudinal slope of zero.
   1.12 Static scale control pavements shall meet the smoothness test of 1/8" thick and 6" diameter disk shall not slide under a 20' straight edge.
   1.13 The distance between exiting of static scale control pavements and mainline lane shall be able to process trucks moving at 45 MPH.
   1.14 The distance between all parking spaces and the entrance gore back onto the interstate shall provide for acceleration so that trucks can be moving posted minimum 40 MPH at the entrance gore.
   1.15 80' of slabs into and out of inspection barns shall be in the same plane as the inspection barn floor.
   1.16 Other roadway items as per CalTrans Standards and Specifications.
   1.17 Any other roadway control items unique to CHP’s needs for mainline WIM station.

2. **Signage**
   2.1 A “PREPARE TO STOP” sign shall be just downstream of static scale gore.
   2.2 A “STOP” sign shall be located at the downstream end of each static scale.
   2.3 Changeable message signs (CMS) downstream of the static scale so that a 110' long truck with it rear axles are on the 3rd scale platform can read the CMS.
   2.4 Other signs as per CalTrans standard and specifications
   2.5 Any other signage items unique to CHP’s needs for mainline WIM station.
3 Pavement Markings

3.1 The pavement marking shall be 12' wide throughout the WIM control pavement area.

3.2 The pavement markings at the static scale are to line up with the inside face of the static scale pit wall (Approximately 12'-2").

3.3 The pavement markings entering, through and exiting inspection barns shall be 9'-0" apart. Which will allow the trucker to place the outside of their tires on the inside face of the pavement marking, insuring the trucks are centered on the inspection pit.

3.4 Pavement marking shall be used in lieu of raised inlands, allowing 110' trucks to make movements without having to roll over raised areas.

3.5 Other pavement markings as per CalTrans standards and specifications.

3.6 Any other pavement marking items unique to CHP’s needs for mainline WIM station.

4 Drainage

4.1 Drainage for WIM pits shall be a passive gravity type system.

4.2 The drain pipe for the WIM pits shall have a minimum slope of 1/4" per foot.

4.3 The out fall for the WIM pits drain pipe shall have a tapered end section in the same plane as the sloped earth around it.

4.4 The outfall elevation for the WIM pit drain pipes shall be a minimum of 1' above weir elevation of discharge area.

4.5 Drainage for static scales pits shall be a sump and duplex pump type system.

4.6 The drain pipe for the static scale pits shall have a minimum slope of 1/4" per foot.

4.7 The outfall for the static scale pit drain pipes shall have a tapered end section in the same plane as the sloped earth around it.

4.8 The outfall elevation for the static scale pit drain pipes shall be 1' above the weir elevation of discharge area.

4.9 Drainage for the inspection pits shall be a sump, duplex pump and oil trap type system.

4.10 The inspection pit drain pipes shall have a minimum slope of 1/4" per foot between the pit wall penetration and oil trap inlet.
4.11 Inverted crowns and inlets at midpoints in parking lot shall control truck parking drainage, providing more vertical clear space under trucks for inspections.
4.12 Other drainage items as per Caltrans standards and specifications.
4.13 Any other drainage items unique to CHP’s needs for mainline WIM station.

5 Roadway Lighting
5.1 Trucks at the stop bar prior to the static scales shall have its vertical surfaces illuminated for reading from the building.
5.2 Trucks on the static scales shall have its vertical surfaces illuminated for reading from the building.
5.3 Trucks in the inspection parking spaces for oversized trucks shall have its vertical surfaces illuminated for reading.
5.4 Trucks on the approach slabs before and after inspection barns shall have its vertical surfaces illuminated for reading from this building.
5.5 Other roadway lighting as per CalTrans standards and specifications.
5.6 Any other roadway lighting items unique to CHP’s needs for mainline WIM station.

6 Pavement Surface
6.1 Control pavement surfaces at WIM shall be safe for the posted speed and cause minimum vibration.
6.2 Control pavement surfaces at static scales shall be a smooth broom finish.
6.3 Other pavement surfaces as per CalTrans standards and specifications.
6.4 Any other pavement surfaces items unique to CHP’s needs for mainline WIM station.

7 Signalization
7.1 The overhead signalization in advance of the exit gore shall have red/green directional arrows pointing to their respective lanes (outside lane and ramp lane).
7.2 The overhead signalization in advance of static scale lanes gores shall have
red/green directional arrows pointing to their respective lanes.

7.3 The post-mounted signal at static scales shall be 8’ (from the center of the head) above the pavement surface it serves.

7.4 All signal heads shall be protected for sun glare and visibility control from other lanes.

7.5 Red/green traffic light shall be located at stop bar just upstream of each static scale.

7.6 Red/green traffic light shall be integrated into the CMS so drivers have only one focal point for instructions.

7.7 CMS downstream of static scales shall be centered over the lane it is instructing.

7.8 CMS downstream of static scales shall be capable to show the following: “STOP NOW”, “PULL FORWARD”, “BACK UP”, “GO PARK” and “BRING PAPERS”.

7.9 All signalization shall be controlled by either the WIM or static scale computers with manual overrides.

7.10 Other signalization as per CalTrans standards and specifications.

7.11 Any other signalization items unique to CHP’s needs for mainline WIM station.

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8 Presence detection loops

8.1 Loop shall be located just upstream of the mainline WIM scales.

8.2 Loop shall be located under the overhead signalization for the mainline exit gore.

8.3 Loop shall be located in static scale lanes just downstream of static scales.

8.4 Loop shall be located in lane between parking lot and static scales.

8.5 Please describe any other presence detection loop items unique to CHP’s needs for mainline WIM station.

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9 Surveillance System

9.1 Cameras placed upstream of mainline WIM scales to scan trucks for polluting.

9.2 Cameras placed on mainline WIM lane to monitor trucks running the static station.

9.3 Camera placed as needed to monitor blind spots around building.

9.4 Please describe any other surveillance items unique to CHP’s needs for mainline WIM station.
Building control items:

**10 Sight lines**

10.1 Employees shall be able to see tire contact area on static scales from both a standing and sitting position in the control room.

10.2 Employees shall be able to make eye contact with drives on static scales from both a standing and sitting position in the control room.

10.3 Employees shall be able to make eye contact with drivers in inspection barn lane upstream of inspection barn from both a standing and sitting position in the control room.

10.4 Employees shall be able to see employee parking lot from both a standing and sitting position in the control room.

10.5 Employees shall be able to see truck parking lot from both a standing and sitting position in the control room.

10.6 Employees shall be able to see truck drivers walking from truck parking lot to drivers area in building from both a standing and sitting position in the control room.

10.7 Any other sight line items unique to CHP’s needs for mainline WIM station.

Environmental control system

10.8 Considerations shall be given to the heat gain due to the green house affect.

10.9 Consideration shall be given to radiant heat gain on employees required to work within 2’ of the glazing system.

10.10 Consideration shall be given to the concrete (white reflective thermal mass) around building which can produce an outdoor ambient temperature of about 100 degrees or higher in summers.

10.11 Duct sizes, number of turns, number of returns and air flow rate shall be designed to meet heating and cooling needs as noise free as possible.

10.12 Considerations shall be made to address possibilities of evaporator freezing up due to over design during mild outdoor temperatures with high humidity.

10.13 The building envelope shall be considered closed with no opportunity for opening windows or doors.

10.14 If solar screens are applied to exterior of glazing system for control of heat gain, they shall be removable without the need of tools.

10.15 Any other environmental control items unique to CHP’s needs for mainline WIM station.
11 Functional Adjacencies
11.1 Inspection barn shall be adjacent to administration building.
11.2 Control room shall be adjacent to Driver's room.
11.3 Driver restroom shall be adjacent to driver's room.
11.4 Law enforcement office shall be adjacent to inspection barn.
11.5 Employee restrooms shall be adjacent to locker area.
11.6 Supervisor office shall be adjacent to Control room.
11.7 Driver's room shall be on truck parking side of building, keeping drivers away from static scale area and eliminating drivers crossing between employees in control room and static scale area.
11.8 Mechanical room shall be at rear of administrative building with an entrance from the exterior.
11.9 Electrical room shall be at rear of administrative building with an entrance from the exterior.
11.10 Janitor closet shall be adjacent to hall.
11.11 Evidence storage with a minimum of 80 sq. ft.
11.12 K-9 area with a minimum area of 120 sq. ft.
11.13 Computer room with HAVC to keep equipment cool and dry.
11.14 Any other functional adjacency items unique to CHP’s needs for mainline WIM station.

12 Millwork
12.1 Break area shall have common use drawers.
12.2 Break area shall have overhead cabinets for common use.
12.3 Break area shall have one refrigerator with freezer and ice-maker.
12.4 Break area shall have one microwave mounted to underside of overhead cabinets and one oven range.
12.5 Break area shall have a sink with hot and cold water.
12.6 Any other millwork items unique to CHP’s needs for mainline WIM station.

13 Security Measures
13.1 All exterior glazing shall be bullet resistant.
13.2 All exterior entrance doors shall have electronically controlled access.
13.3 Driver's room walls and ceilings shall have bullet resistant boards.
13.4 Driver's restroom walls and ceiling shall have bullet resistant boards.
13.5 Blind spots around building shall have cameras with monitors in control room.
13.6 Sight line from control room to employee parking, truck parking and walkways.
13.7 Please describe any other security measures unique to CHP’s needs for mainline WIM station.

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Truck Parameters:
14 Truck wheelbase lengths
14.1 Shortest length wheelbase truck for design shall be 4’ (one steering axle and one drive axle) as in CHP Trucking Manual.
14.2 Most common length wheelbase truck for design shall be 75’ (one steering axle, tandem drive axles and tandem trailer axles).
14.3 Longest length wheelbase truck (tractor and trailer) with steering axle on tractor only for design shall be 110’.
14.4 Longest length wheelbase truck (tractor and trailer) with steering on both tractor and trailer shall be 200’.
14.5 Any other truck wheelbase length items unique to CHP’s needs for mainline WIM station.

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15 Number of axles per truck
15.1 Two axles per truck shall be the minimum number of axles for design.
15.2 Five axles per truck shall be the most common number of axles for design.
15.3 Nineteen axles per truck shall be the maximum number of axles for design.
15.4 Please describe any other number of axles per truck unique to CHP’s needs for mainline WIM station.

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16 Weight per axle group
16.1 Minimum weight for a single axle shall be 2500 lb.
16.2 Maximum legal weight for a single axle shall be 20,000 lb.
16.3 Maximum legal weight for a tandem axle shall be 34,000 lb.
16.4 Maximum legal gross weight is 80,000 with 200# of grace
16.5 Any other weight limits per axle type unique to CHP’s needs for mainline WIM station.
17 **Allowable truck heights**
17.1 Standard legal truck height limit shall be 14'-0".
17.2 Any other truck height items unique to CHP’s needs for mainline WIM station.

18 **Allowable truck widths**
18.1 Standard truck width is 8'-6" or 102".
18.2 Maximum wide load is 16' with a maximum cantilever of 7'-6" off either side of truck.
18.3 Any other truck widths unique to CHP’s needs for mainline WIM station.

**WIM / Static Scale System:**
19 **WIM system shall collect and display the following data for each truck:**
19.1 Number of axles, weight of each axle, number of axle groups, weight of each axle group, distance between axles, distance between axle groups, king pin distance, gross weight, classification of truck, over height, external bridge distance, internal bridge distance, speed, off scale, imbalance load between wheels on one axle, imbalance load between axles of a tandem axle group and wheelbase distance, height length and width of truck.
20 Static scales shall collect and display the following data for each truck:
20.1 Weight per axle group, gross weight, internal bridge weight and if entire truck is on static scale.

21 Safety measures for truck traffic through WIM station
21.1 When a truck is stopped over either loop downstream of the static scales gore for a predetermined amount of time the WIM system shall alarm and move incoming traffic to the other static scale.
21.2 When a truck is stopped over either loop downstream of the static scales for a predetermined amount of time the WIM system shall alarm and move incoming traffic to the other static scale.
21.3 When a truck is stopped over the loop just upstream of the static scales gore for predetermined amount of time the WIM system shall alarm and keep trucks on the mainline.
21.4 When a truck is returning to the static scales from the truck parking lot the WIM system shall alarm and move incoming static scale traffic to static scale farthest from building.
21.5 Any other truck traffic safety measures unique to CHP’s needs for mainline WIM station.
22 WIM system shall be able to generate the following reports by the number of trucks by the hour, shift, day, week, month and year for:

22.1 Trucks
22.2 Trucks sent to WIM bypass lane
22.3 Trucks sent to static scales
22.4 Trucks per classification
22.5 Trucks over height limits
22.6 Trucks over gross weight limits
22.7 Trucks over axle weight limits
22.8 Trucks over internal bridge limits
22.9 Trucks over external bridge limits
22.10 Trucks over king pin limits
22.11 Trucks off scale
22.12 Trucks with imbalance wheel load from side to side
22.13 Trucks with imbalance between axles of a tandem axle group
22.14 Trucks speeding
22.15 WIM accuracy compared to static scale
22.16 WIM accuracy compared to static scale per classification
22.17 Any other WIM system reports unique to CHP’s needs for mainline WIM station.
General Concerns
This type of project requires a close attention to each element and what other elements are dependant on it. For example: Static scales are dependant on the following: queue length, stop bar upstream, approach slabs, zero longitudinal slope, zero cross slope, curb, sidewalks, traffic lights, changeable message signs, roadway lighting both horizontal and vertical surfaces, lightning protection, sight lines from building, window locations, window size, elevation of finish floors, angle of windows to the scales and many others... This is just one small example of only one item. To define all the dependencies among all major and minor systems and subsystems that makeup an integrated Weigh-in-Motion station will be a large undertaking.

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The sheer magnitude of trucks on the freeways and streets in the Gateway Cities COG area require a network of truck enforcement systems, virtual stations and Mainline WIM stations. These systems and facilities will need to operate twenty-four hours seven days a week for the effective enforcement of commercial vehicles traveling on the freeways and streets of Gateway Cities COG and surrounding area. There are several freeways and streets for the trucks to use while transporting their load away from and to the ports of Los Angeles and Long Beach. Therefore, just one or two truck enforcement facilities will not be effective for the magnitude of trucks and multiple bypass potentials. The core of this infrastructure strategically needs to be on or as near to these two ports as possible. All permitted and non-permitted commercial vehicles must process themselves through these facilities except if they are escorted by CHP. The trucks will be instructed how to proceed through these facilities by using chargeable message signs, signalization, fixed signs and verbal communication. The virtual stations and mainline WIM stations will cull trucks in excess of predetermined limits and route them to a static scale. Once a truck is on the static scale it will be checked against predetermined limits and processed appropriately by either an automated system or enforcement staff. Trucks not culled by these mainline systems will remain on the freeway. Trucks over on axle weight limits but not over on gross weight limits may be provided an option to park and shift its load, and then be reweighed. Other trucks on static scale may be instructed (by enforcement staff) to the inspection barn for inspection. Once trucks are released from static scale, inspection barn or truck parking area they may precede back to the freeway.
**Glossary:**

**CMS** - Changeable Message Sign  
**Downstream** - moving in the direction, in which the traffic flows to.  
**External bridge** - distance between the center of first axle and center of last axle of a vehicle  
**Internal bridge** - distance between the center of two or more axles (also called “inner-bridge”)  
**King pin** - hitch point between tractor and trailer  
**Upstream** - moving in the direction opposite to that in which the traffic flows to.  
**VDIM** – Vehicle Dimension-in-Motion  
**WIM** - Weigh-in-Motion

The following is a small list of systems, subsystems and items that makeup a WIM station. This is not a complete list and their dependencies are not defined.
Roadway Control Items:

23 Roadway
23.1 WIM control pavements shall be a minimum of 200' from the upstream edge of control pavements to the center line of the WIM.
23.2 WIM control pavements shall be a minimum of 100' from the center line of the WIM to the downstream edge of control pavements.
23.3 WIM control pavements shall have a maximum cross slope of 3%.
23.4 WIM control pavements shall have a fixed cross slope from end to end.
23.5 WIM control pavements shall have a smoothness that meets ASTM E1318-02.
23.6 The distance between downstream edges of WIM control pavement and overhead signals for the exit gore shall be able to process trucks moving at 80 MPH.
23.7 The distance between the overhead signal and gore for the static scale lanes shall be able to process trucks moving at 15 MPH.
23.8 The distance between the static scale gores and each static scale control pavement shall be able to process trucks moving at 15 MPH.
23.9 Static scale control pavements shall be 40 feet long at both ends.
23.10 Static scale control pavements shall have a zero cross slope.
23.11 Static scale control pavements shall have a longitudinal slope of zero.
23.12 Static scale control pavements shall meet the smoothness test of 1/8" thick and 6" diameter disk shall not slide under a 20' straight edge.
23.13 The distance between exiting of static scale control pavements and mainline lane shall be able to process trucks moving at 45 MPH.
23.14 The distance between all parking spaces and the entrance gore back onto the interstate shall provide for acceleration so that trucks can be moving posted minimum 40 MPH at the entrance gore.
23.15 80' of slabs into and out of inspection barns shall be in the same plane as the inspection barn floor.
23.16 Other roadway items as per CalTrans Standards and Specifications.
23.17 Any other roadway control items unique to CHP’s needs for mainline WIM station.

Signage

24.1 A “PREPARE TO STOP” sign shall be just downstream of static scale gore.
24.2 A “STOP” sign shall be located at the downstream end of each static scale.
24.3 Changeable message signs (CMS) downstream of the static scale so that a 110' long truck with its rear axles are on the 3rd scale platform can read the CMS.
24.4 Other signs as per CalTrans standard and specifications
24.5 Any other signage items unique to CHP’s needs for mainline WIM station.
25  **Pavement Markings**

25.1 The pavement marking shall be 12' wide throughout the WIM control pavement area.

25.2 The pavement markings at the static scale are to line up with the inside face of the static scale pit wall (Approximately 12'- 2").

25.3 The pavement markings entering, through and exiting inspection barns shall be 9'-0" apart. Which will allow the trucker to place the outside of their tires on the inside face of the pavement marking, insuring the trucks are centered on the inspection pit.

25.4 Pavement marking shall be used in lieu of raised inlands, allowing 110' trucks to make movements without having to roll over raised areas.

25.5 Other pavement markings as per CalTrans standards and specifications.

25.6 Any other pavement marking items unique to CHP’s needs for mainline WIM station.

---

26  **Drainage**

26.1 Drainage for WIM pits shall be a passive gravity type system.

26.2 The drain pipe for the WIM pits shall have a minimum slope of 1/4" per foot.

26.3 The out fall for the WIM pits drain pipe shall have a tapered end section in the same plane as the sloped earth around it.

26.4 The out fall elevation for the WIM pit drain pipes shall be a minimum of 1' above weir elevation of discharge area.

26.5 Drainage for static scales pits shall be a sump and duplex pump type system.

26.6 The drain pipe for the static scale pits shall have a minimum slope of 1/4" per foot.

26.7 The outfall for the static scale pit drain pipes shall have a tapered end section in the same plane as the sloped earth around it.

26.8 The outfall elevation for the static scale pit drain pipes shall be 1' above the weir elevation of discharge area.

26.9 Drainage for the inspection pits shall be a sump, duplex pump and oil trap type system.

26.10 The inspection pit drain pipes shall have a minimum slope of 1/4" per foot between the pit wall penetration and oil trap inlet.
26.11 Inverted crowns and inlets at midpoints in parking lot shall control truck parking drainage, providing more vertical clear space under trucks for inspections.
26.12 Other drainage items as per Caltrans standards and specifications.
26.13 Any other drainage items unique to CHP’s needs for mainline WIM station.

27 Roadway Lighting
27.1 Trucks at the stop bar prior to the static scales shall have its vertical surfaces illuminated for reading from the building.
27.2 Trucks on the static scales shall have its vertical surfaces illuminated for reading from the building.
27.3 Trucks in the inspection parking spaces for oversized trucks shall have its vertical surfaces illuminated for reading.
27.4 Trucks on the approach slabs before and after inspection barns shall have its vertical surfaces illuminated for reading from this building.
27.5 Other roadway lighting as per CalTrans standards and specifications.
27.6 Any other roadway lighting items unique to CHP’s needs for mainline WIM station.

28 Pavement Surface
28.1 Control pavement surfaces at WIM shall be safe for the posted speed and cause minimum vibration.
28.2 Control pavement surfaces at static scales shall be a smooth broom finish.
28.3 Other pavement surfaces as per CalTrans standards and specifications.
28.4 Any other pavement surfaces items unique to CHP’s needs for mainline WIM station.

29 Signalization
29.1 The overhead signalization in advance of the exit gore shall have red/green directional arrows pointing to their respective lanes (outside lane and ramp lane).
29.2 The overhead signalization in advance of static scale lanes gores shall have
red/green directional arrows pointing to their respective lanes.

29.3 The post-mounted signal at static scales shall be 8’ (from the center of the head) above the pavement surface it serves.

29.4 All signal heads shall be protected for sun glare and visibility control from other lanes.

29.5 Red/green traffic light shall be located at stop bar just upstream of each static scale.

29.6 Red/green traffic light shall be integrated into the CMS so drivers have only one focal point for instructions.

29.7 CMS downstream of static scales shall be centered over the lane it is instructing.

29.8 CMS downstream of static scales shall be capable to show the following: “STOP NOW”, “PULL FORWARD”, “BACK UP”, “GO PARK” and “BRING PAPERS”.

29.9 All signalizaton shall be controlled by either the WIM or static scale computers with manual overrides.

29.10 Other signalization as per CalTrans standards and specifications.

29.11 Any other signalization items unique to CHP’s needs for mainline WIM station.

______________________________________________________________________
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30 Presence detection loops
30.1 Loop shall be located just upstream of the mainline WIM scales.
30.2 Loop shall be located under the overhead signalization for the mainline exit gore.
30.3 Loop shall be located in static scale lanes just downstream of static scales.
30.4 Loop shall be located in lane between parking lot and static scales.
30.5 Please describe any other presence detection loop items unique to CHP’s needs for mainline WIM station.

______________________________________________________________________
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______________________________________________________________________

31 Surveillance System
31.1 Cameras placed upstream of mainline WIM scales to scan trucks for polluting.
31.2 Cameras placed on mainline WIM lane to monitor trucks running the static station.
31.3 Camera placed as needed to monitor blind spots around building.
31.4 Please describe any other surveillance items unique to CHP’s needs for mainline WIM station.
Building control items:

32 Sight lines
32.1 Employees shall be able to see tire contact area on static scales from both a standing and sitting position in the control room.
32.2 Employees shall be able to make eye contact with drives on static scales from both a standing and sitting position in the control room.
32.3 Employees shall be able to make eye contact with drivers in inspection barn lane up stream of inspection barn from both a standing and sitting position in the control room.
32.4 Employees shall be able to see employee parking lot from both a standing and sitting position in the control room.
32.5 Employees shall be able to see truck parking lot from both a standing and sitting position in the control room.
32.6 Employees shall be able to see truck drivers walking from truck parking lot to drivers area in building from both a standing and sitting position in the control room.
32.7 Any other sight line items unique to CHP’s needs for mainline WIM station.

Environmental control system
32.8 Considerations shall be given to the heat gain due to the greenhouse affect.
32.9 Consideration shall be given to radiant heat gain on employees required to work within 2’ of the glazing system.
32.10 Consideration shall be given to the concrete (white reflective thermal mass) around building which can produce an outdoor ambient temperature of about 100 degrees or higher in summers.
32.11 Duct sizes, number of turns, number of returns and air flow rate shall be designed to meet heating and cooling needs as noise free as possible.
32.12 Considerations shall be made to address possibilities of evaporator freezing up due to over design during mild outdoor temperatures with high humidity.
32.13 The building envelope shall be considered closed with no opportunity for opening windows or doors.
32.14 If solar screens are applied to exterior of glazing system for control of heat gain, they shall be removable without the need of tools.
32.15 Any other environmental control items unique to CHP’s needs for mainline WIM station.
33 Functional Adjacencies
33.1 Inspection barn shall be adjacent to administration building.
33.2 Control room shall be adjacent to Driver's room.
33.3 Driver restroom shall be adjacent to driver's room.
33.4 Law enforcement office shall be adjacent to inspection barn.
33.5 Employee restrooms shall be adjacent to locker area.
33.6 Supervisor office shall be adjacent to Control room.
33.7 Driver's room shall be on truck parking side of building, keeping drivers away from static scale area and eliminating drivers crossing between employees in control room and static scale area.
33.8 Mechanical room shall be at rear of administrative building with an entrance from the exterior.
33.9 Electrical room shall be at rear of administrative building with an entrance from the exterior.
33.10 Janitor closet shall be adjacent to hall.
33.11 Evidence storage with a minimum of 80 sq. ft.
33.12 K-9 area with a minimum area of 120 sq. ft.
33.13 Computer room with HAVC to keep equipment cool and dry.
33.14 Any other functional adjacency items unique to CHP’s needs for mainline WIM station.

34 Millwork
34.1 Break area shall have common use drawers.
34.2 Break area shall have overhead cabinets for common use.
34.3 Break area shall have one refrigerator with freezer and ice-maker.
34.4 Break area shall have one microwave mounted to underside of overhead cabinets and one oven range.
34.5 Break area shall have a sink with hot and cold water.
34.6 Any other millwork items unique to CHP’s needs for mainline WIM station.

35 Security Measures
35.1 All exterior glazing shall be bullet resistant.
35.2 All exterior entrance doors shall have electronically controlled access.
35.3 Driver's room walls and ceilings shall have bullet resistant boards.
35.4 Driver's restroom walls and ceiling shall have bullet resistant boards.
35.5 Blind spots around building shall have cameras with monitors in control room.
35.6 Sight line from control room to employee parking, truck parking and walkways.
35.7 Please describe any other security measures unique to CHP’s needs for mainline WIM station.

36 Truck wheelbase lengths
36.1 Shortest length wheelbase truck for design shall be 4’ (one steering axle and one drive axle) as in CHP Trucking Manual.
36.2 Most common length wheelbase truck for design shall be 75’ (one steering axle, tandem drive axles and tandem trailer axles).
36.3 Longest length wheelbase truck (tractor and trailer) with steering axle on tractor only for design shall be 110’.
36.4 Longest length wheelbase truck (tractor and trailer) with steering on both tractor and trailer shall be 200’.
36.5 Any other truck wheelbase length items unique to CHP’s needs for mainline WIM station.

37 Number of axles per truck
37.1 Two axles per truck shall be the minimum number of axles for design.
37.2 Five axles per truck shall be the most common number of axles for design.
37.3 Nineteen axles per truck shall be the maximum number of axles for design.
37.4 Please describe any other number of axles per truck unique to CHP’s needs for mainline WIM station.

38 Weight per axle group
38.1 Minimum weight for a single axle shall be 2500 lb.
38.2 Maximum legal weight for a single axle shall be 20,000 lb.
38.3 Maximum legal weight for a tandem axle shall be 34,000 lb.
38.4 Maximum legal gross weight is 80,000 with 200# of grace
38.5 Any other weight limits per axle type unique to CHP’s needs for mainline WIM station.
39  **Allowable truck heights**
39.1 Standard legal truck height limit shall be 14’-0”.
39.2 Any other truck height items unique to CHP’s needs for mainline WIM station.

40  **Allowable truck widths**
40.1 Standard truck width is 8’-6” or 102”.
40.2 Maximum wide load is 16’ with a maximum cantilever of 7’-6” off either side of truck.
40.3 Any other truck widths unique to CHP’s needs for mainline WIM station.

**WIM / Static Scale System:**
41  **WIM system shall collect and display the following data for each truck:**
41.1 Number of axles, weight of each axle, number of axle groups, weight of each axle group, distance between axles, distance between axle groups, king pin distance, gross weight, classification of truck, over height, external bridge distance, internal bridge distance, speed, off scale, imbalance load between wheels on one axle, imbalance load between axles of a tandem axle group and wheelbase distance, height length and width of truck.

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<td>24500</td>
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<td></td>
</tr>
</tbody>
</table>
42 Static scales shall collect and display the following data for each truck:
42.1 Weight per axle group, gross weight, internal bridge weight and if entire truck is on static scale.

43 Safety measures for truck traffic through WIM station
43.1 When a truck is stopped over either loop downstream of the static scales gore for a predetermined amount of time the WIM system shall alarm and move incoming traffic to the other static scale.
43.2 When a truck is stopped over either loop downstream of the static scales for a predetermined amount of time the WIM system shall alarm and move incoming traffic to the other static scale.
43.3 When a truck is stopped over the loop just upstream of the static scales gore for predetermined amount of time the WIM system shall alarm and keep trucks on the mainline.
43.4 When a truck is returning to the static scales from the truck parking lot the WIM system shall alarm and move incoming static scale traffic to static scale farthest from building.
43.5 Any other truck traffic safety measures unique to CHP’s needs for mainline WIM station.
44 WIM system shall be able to generate the following reports by the number of trucks by the hour, shift, day, week, month and year for:

44.1 Trucks
44.2 Trucks sent to WIM bypass lane
44.3 Trucks sent to static scales
44.4 Trucks per classification
44.5 Trucks over height limits
44.6 Trucks over gross weight limits
44.7 Trucks over axle weight limits
44.8 Trucks over internal bridge limits
44.9 Trucks over external bridge limits
44.10 Trucks over king pin limits
44.11 Trucks off scale
44.12 Trucks with imbalance wheel load from side to side
44.13 Trucks with imbalance between axles of a tandem axle group
44.14 Trucks speeding
44.15 WIM accuracy compared to static scale
44.16 WIM accuracy compared to static scale per classification
44.17 Any other WIM system reports unique to CHP’s needs for mainline WIM station.
APPENDIX C

SITE LOCATIONS AND SKETCHES
FOR PERMANENT TRUCK INSPECTION FACILITIES

The following show aerial maps of the potential sites for truck inspection facilities based on extensive research and the ability of large volumes of trucks to be processed at these sites. Extensive further analysis in the next phase of this study will be made to determine the feasibility of all (or any) of these sites with close coordination and cooperation of Caltrans and CHP.
I-710/Del Amo Blvd. - Aerial Map of Potential Truck Inspection Facilities Sites
COMMERCIAL VEHICAL ENFORCEMENT STRATEGIES, SYSTEMS AND SITES STUDY (CVES) FOR THE GATEWAY CITIES AND SURROUNDING AREAS

I-710/Del Amo Site – Sketch of Potential Northbound Permanent Truck Inspection Facility
I-710/Del Amo Blvd. – Sketch of Potential Southbound Truck Inspection Facility
COMMERCIAL VEHICAL ENFORCEMENT STRATEGIES, SYSTEMS AND SITES
STUDY (CVES) FOR THE GATEWAY CITIES AND SURROUNDING AREAS

I-710/South Gate – Aerial Map of Potential Truck Inspection Facility Site
I-710/South Gate – Sketch of Potential Truck Inspection Facility
I-710/Washington Blvd. Site in Commerce – Aerial Map of Potential Truck Inspection Facility Site
I-710/Washington Blvd. – Sketch of Potential Truck Inspection Facility
I-710/Carson/Del Amo Blvd. – Aerial Map of Potential Sites for Truck Inspection Facilities
I-405/Carson/Del Amo Blvd. – Sketch of Potential Northbound Truck Inspection Facility
I-405/Carson/Del Amo Blvd. – Sketch of Potential Southbound Truck Inspection Facility
B. 2011 Commercial Vehicle Enforcement Facility Inventory of Needs
2011
COMMERCIAL VEHICLE
ENFORCEMENT FACILITY
INVENTORY OF NEEDS

PREPARED BY:
THE DEPARTMENT OF CALIFORNIA HIGHWAY PATROL

AND

THE CALIFORNIA DEPARTMENT OF TRANSPORTATION
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PURPOSE

This Inventory of Needs (ION) is a planning and procedures document for Commercial Vehicle Enforcement Facilities (CVEF). It documents the decision-making process approved by the Director of the California Department of Transportation (Caltrans) and the Commissioner of the Department of the California Highway Patrol (CHP) relating to the identification, prioritization, implementation, and tracking of new facility construction, relocation, and major upgrades.

There are two primary reasons for the CVEF: infrastructure preservation and public safety. Highway pavement and structure life depends upon the weight and frequency of the traffic using the facility. Heavy trucks cause far greater impact on pavement and bridges compared to passenger cars. To illustrate the difference between cars and trucks, a road test sponsored by the American Association of State Highway Officials, many years ago, established that it takes the passage of approximately 9,600 cars to equal the pavement damage caused by one legal truck weighing 80,000 pounds. More recent studies on pavement damage indicate that a 10 percent overload roughly increases the pavement damage by as much as 40 percent. It is important to monitor overweight truck traffic in order to preserve and extend pavement life.

The inspection program enhances commercial vehicle and driver safety. The presence of CVEF improves detection and apprehension of impaired and fatigued commercial vehicle operators, as well as oversized and overweight commercial vehicles, thus prolonging the useful life of the highway and enhancing the safety of the traveling public.

OBJECTIVES

1. Construct new CVEF on highways where none exist, and relocate or upgrade existing facilities which are inadequate for existing traffic volume. Priority is placed on new construction or upgrades at ports of entry. As used in this document, a “port of entry” is defined as any location where goods are transported into the state using commercial vehicles.

2. Conduct engineering and traffic studies to determine the feasibility of construction/upgrade of the CVEF that were identified in the 2001 ION document. Emphasis would be made on conducting studies at ports of entry.

3. Optimize safety, operational needs, and working conditions to ensure the efficient operation of existing facilities.

4. Implement intelligent transportation system technology at the CVEF to help move trucks efficiently and use enforcement personnel effectively.
EXECUTIVE SUMMARY

FUNCTION

The ION document is used to identify, prioritize, implement, and track CVEF projects including new facility construction, relocations, modifications, minor improvements, and maintenance.

PERMANENT COMMERCIAL VEHICLE ENFORCEMENT FACILITIES

There are currently 51 CVEFs in 37 locations operating throughout the state, plus 73 mini-sites. Five classifications have been established to define existing and future facilities: A, B, C, D, and mini-sites. Definitions of the CVEF classifications and mini-sites are shown in Annex B, number 1 through 5. A location map is on page 9 for reference. Since the release of the “2001 ION” document, the following changes have occurred:

- The relocation of the Willits platform scale (PS) was completed and renamed Ridgewood.
- The Tecate CVEF, on State Route (SR) 188 at the Mexican border, which opened for operation in March 2009.
- Temporary trailers were placed at the existing mini-sites on SR-118 near the city of Moorpark.
- The northbound (N/B) Carson PS on Interstate (I) 405 is closed due to damage to the building and inadequacy for future improvements. The southbound (S/B) PS is also closed due to necessary repairs for health reasons.
- The Two Rock PS has been out of service because of problems with outdated equipment. This location has been removed from the list of CVEF.
- The Dunsmuir Grade and Donner Pass facilities were reclassified from class B to class A.
- The westbound (W/B) Livermore facility has been rebuilt to current code and regulations.

PROPOSED NEW FACILITIES AND IMPROVEMENTS

A new CVEF will be added to the existing list of enforcement facilities. The project is located at Mountain Pass on I-15 near the border of Nevada, which is in the final design stage. This project includes construction of an agricultural inspection facility and serves as a joint port of entry for inspection of all trucks entering California.

A new Cordelia eastbound (E/B) CVEF will be built 0.2 miles east from the existing CVEF on I-80, and will be completed in 2013.

A new Otay Mesa N/B CVEF, on I-905, class A facility is in the preliminary design stages.

There is a need to improve and upgrade many of the existing facilities which are inadequate to handle current and future truck traffic volumes. Also, due to the statewide average truck volume increase of 50 percent on major routes over the last two decades, there is a need to construct new facilities to inspect and cite noncompliant trucks on state highways. Table 1, page 5, shows a list of facility projects which are currently being programmed and funded. Table 2, page 7, shows a list of facility locations that are identified as new construction. Table 3, page 7, shows a list of
existing facility locations that are identified as major upgrades. The future construction and programming of these projects are subject to engineering studies and availability of funds.

The terms and conditions of the joint CHP/Caltrans Interagency Agreement (IA) establish the responsibility for specified repairs and maintenance at CVEF.

**FACILITY STAFFING**

Facility staffing levels are based upon the operational objectives of the individual facility and related factors. These factors include facility classification, command status, hours of operation, and enforcement needs. Facility staffing levels are contingent upon the budgetary process and the fiscal well being of the state.

**FUNDING**

Necessary funding for facility projects is obtained by Caltrans through reservations set aside in the State Highway Operation and Protection Program (SHOPP), which is approved by the California Transportation Commission. The current goal for the four years beginning with the state Fiscal Year 2010/2011 to maintain the existing facilities, is 5 million dollars annually. The California Department of Transportation will make a good faith effort to allocate additional funds of ten million dollars annually for new CVEF construction. The construction of the facility at Mountain Pass is funded by SHOPP.

The projects listed on Table 2, page 7, as new construction, and Table 3, page 7, as major upgrades, are not currently programmed in the SHOPP. Their design and construction will be subject to engineering studies, benefit-cost analyses, lifecycle costs, etc.

The California Department of Transportation and CHP recognize the addition of new CVEF will extend the life of highway pavement and improve safety on the highways. The California Department of Transportation and the CHP are constantly evaluating advanced technologies that affect the movement of commercial vehicles. The following list shows examples of advanced technologies that will be investigated and used appropriately when needed:

1. **Remote Sensing Technologies.**
   - Radiation portal monitor.
   - Virtual weigh station.
   - Infrared for tailpipe emissions or brakes.
   - Vehicle size compliance using lasers or radar.
   - Intelligent Transportation Systems Card Advanced Loop Technologies for commercial vehicle identification and tracking.
2. Credentialing Systems.
   - Electronic Bypass Management System.
   - Performance and Registration Information System Management Program.
   - Safety and Fitness Electronic Records.
   - Commercial Vehicle Information System and Networks.

3. Data Exchange and Communication Network.
   - Automatic vehicle identification antennas.
   - Transponders.
   - Dedicated short range communications standards and technologies.

Research for deployment of advanced technology to automate weight and safety inspection/enforcement that could potentially replace the existing practice for truck size, weight and safety inspections would require many years to complete. Weigh-in-motion (WIM) technology cannot yet provide consistent and reliable data.

Facility maintenance is funded by Caltrans and administered by CHP. Currently, Caltrans provides 2 million dollars annually. The CHP is responsible for maintenance of the facilities as defined in the joint CHP/Caltrans IA. The local Caltrans District Maintenance Offices are responsible for resolving all other maintenance issues.
### CURRENT STATUS OF PROGRAMMED COMMERCIAL VEHICLE ENFORCEMENT FACILITY PROJECTS

**TABLE 1**

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<th>Caltrans District</th>
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<th>Mile Post</th>
<th>Location</th>
<th>Fiscal Year</th>
<th>Cap. Cost X $1,000</th>
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<td>Golden Gate</td>
<td>Solano</td>
<td>80</td>
<td>14.4</td>
<td>Cordelia</td>
<td>9/10</td>
<td>925</td>
<td>Completed 7/9/2010</td>
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<td><strong>Description</strong>: Replace 2 platforms, 3 overhead signs, traffic signal conductor, and traffic signal light on E/B (deferred portion of Expenditure Authorization # 1A1100).</td>
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</table>

| 6                 | Central      | Kern | 5    | 11.9      | Grapevine | 9/10        | 1713                | 2010                      |
| **Description**: Replace roof on the administration building; expand building, and remove trailer. |

| 4                 | Golden Gate  | Alameda | 680  | R8.7      | Mission Grade | 9/10        | 466                 | 10/2011                   |
| **Description**: Replace weight display and leaking roof for office area. (Note: Scope cost should be changed - District will prepare a Pavement Conditions Report.) |

| 3                 | Valley       | Nevada | 80   | 18.8      | Donner Pass | 9/10        | 2100                | 10/2011                   |
| **Description**: Rehabilitate truck lanes. Upgrade heating and air conditioning. Replace PS. Relocate the truck counter. Replace the public address (PA) system. Install security camera. |

| 4                 | Golden Gate  | Alameda | 580  | R8.9      | Livermore, W/B | 10/11        | 1979                | 9/2012                    |
| **Description**: Rehabilitate pavement and enlarge the parking area - W/B facility. |

| 4                 | Golden Gate  | Alameda | 880  | 4.2       | Nimitz | 10/11        | 1211                | 6/2012                    |
| **Description**: Replace roof, install weigh station message sign (WSMS) on the S/B side, in-station lane control changeable message sign for both, N/B and S/B, bay overhead ceiling lighting, and sump pump system to pump out groundwater. |

| 10                | Central      | Merced | 5    | 23.4      | Santa Nella | 10/11        | 1723                | 2011                      |
| **Description**: Replace WSMS (N/B and S/B). Install over-height indicator (S/B), directional signals (S/B), and new cameras (N/B and S/B). Relocate WSMS control box to the counter tops (N/B and S/B). Rebuild cabinet/counter top and upgrade electrical (S/B). Replace PA system at S/B. |
**CURRENT STATUS OF PROGRAMMED COMMERCIAL VEHICLE ENFORCEMENT FACILITY PROJECTS (continued)**

**TABLE 1**

<p>| | | | | | | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>8</td>
<td>Border</td>
<td>Riverside</td>
<td>10</td>
<td>R</td>
<td>15.8</td>
<td>Desert Hills</td>
<td>11/12</td>
</tr>
<tr>
<td>Description:</td>
<td>Construct new administration building and septic system.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>

| 7 | Coastal | Ventura | 10 | 1 | 9.0 | Conejo | 11/12 | 512 | 2012 |
| Description: | Install remote overweight display. Install emergency standby generator at N/B only. Remove median island and install mast arm at both facilities. Replace roof on N/B inspection bay. Install security camera on S/B. |

| 3 | Valley | Sacramento/ El Dorado | 80 | 50 | 16.0 | 27.1 | Camino and Antelope | 11/12 | 390 | 11/2011 |
| Description: | Replace WSMS at Camino, and install closed circuit television at the Antelope weigh station. |

| 4 | Golden Gate | Alameda | 58 | 0 | R8.9 | Livermore E/B | 11/12 | 1810 | 6/2013 |
| Description: | Rehabilitate pavement and enlarge parking area - E/B facility. |

| 7 | Southern | Los Angeles | 5 | R | 54.8 | Castaic | 12/13 | 1647 | 2013 |

| 8 | Border | Riverside | 15 | 1.0 | Rainbow N/B | 12/13 | 304 | 2013 |
| Description: | Install sensors for automatic open/close off ramp. Replace over-height detector. Lower exhaust fan. Relocate the blower motor that pressurizes the under-truck lights. |

| 11 | Border | San Diego | 15 | 53.5 | Rainbow S/B | 12/13 | 700 | 2013 |
| Description: | Reconstruct septic tank, upgrade the security camera, install the standby generator, and reconstruct the storage/office space. |
PRIORITY FOR NEW COMMERCIAL VEHICLE ENFORCEMENT FACILITIES

**TABLE 2**

<table>
<thead>
<tr>
<th>Priority No.</th>
<th>Location</th>
<th>Caltrans Dist.</th>
<th>CHP Div.</th>
<th>Co.</th>
<th>Rte.</th>
<th>Mile Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I-710 N/B*</td>
<td>7</td>
<td>Southern</td>
<td>Los Angeles</td>
<td>710</td>
<td>TBD</td>
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<tr>
<td>2</td>
<td>Needles</td>
<td>8</td>
<td>Border</td>
<td>San Bernardino</td>
<td>40</td>
<td>131.0</td>
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<td>3</td>
<td>Moorpark</td>
<td>7</td>
<td>Southern</td>
<td>Ventura</td>
<td>118</td>
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<td>4</td>
<td>Blythe</td>
<td>8</td>
<td>Border</td>
<td>Riverside</td>
<td>10</td>
<td>144.5</td>
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<td>5</td>
<td>Chowchilla River S/B</td>
<td>10</td>
<td>Central</td>
<td>Merced</td>
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*Construction of a conventional weigh station is not feasible. Additional discussion is necessary for other options.*

---

PRIORITY FOR MAJOR UPGRADES TO EXISTING COMMERCIAL VEHICLE ENFORCEMENT FACILITIES

**TABLE 3**

<table>
<thead>
<tr>
<th>Priority No.</th>
<th>Location</th>
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<th>Rte.</th>
<th>Mile Post</th>
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<td>7</td>
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<td>Siskiyou</td>
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<td>Peralta W/B</td>
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<tr>
<td>5</td>
<td>Peralta E/B</td>
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<td>6</td>
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<td>6</td>
<td>Inland</td>
<td>Kern</td>
<td>58</td>
<td>81.0</td>
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<td>Cottonwood S/B</td>
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<td>Tehama</td>
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<td>Susanville (Town Hill)</td>
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<td>9</td>
<td>Solemint</td>
<td>7</td>
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### PRIORITIES FOR NEW WEIGH-IN-MOTION SITES

**TABLE 4**

<table>
<thead>
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<th>Priority No.</th>
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<tbody>
<tr>
<td>1</td>
<td>Install WIM System</td>
<td>N</td>
<td>4</td>
<td>Coastal</td>
<td>Santa Clara</td>
<td>152</td>
<td>R25,5</td>
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<td>Sonoma</td>
<td>37</td>
<td>2.6</td>
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<tr>
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<td>N</td>
<td>4</td>
<td>Coastal</td>
<td>Golden</td>
<td></td>
<td>VAR</td>
</tr>
<tr>
<td>4</td>
<td>Install WIM System</td>
<td>N</td>
<td>4</td>
<td>Coastal</td>
<td>Santa Clara</td>
<td>17</td>
<td>7.7</td>
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</table>

Note: Caltrans is currently exploring funding options for these facilities.
LOCATION MAP OF EXISTING AND PROPOSED COMMERCIAL VEHICLE ENFORCEMENT FACILITIES

STATE OF CALIFORNIA

INSPECTION FACILITIES AND PLATFORM SCALES

Legend
- Case A
- Case B
- Case C
- Case D
- Out of service
- In Design or Under Construction

Commercial Vehicle Enforcement Facilities

Department of Transportation
Office of Traffic Operations
August 2003
ROLES AND RESPONSIBILITIES

A. Decision-Making.

All decisions pertaining to improvements, repairs, maintenance, and future projects, will be made by Caltrans, and Executive Management from CHP, and will be disseminated to the appropriate Caltrans District and CHP Division. The Districts will implement decisions in a timely manner. The CHP and Caltrans will coordinate all phases of decision-making in emergencies and routine operations, especially in the following areas:

1. Maintaining and improving existing facilities.
2. Future projects.
3. Research and implementation of advance technology.
4. Expenditure of funds.

Final decisions regarding new construction, relocation, and upgrades are made by the Director/Commissioner.

B. Facility Improvement Projects.

All projects are identified and prioritized based on a process developed by Caltrans and CHP. The process is detailed in Annex E. Some of the considerations include input from Caltrans and CHP personnel, average daily truck traffic, proximity to other facilities, and availability of right-of-way easements.

a) Responsibilities of Caltrans:

1. Centralize the prioritization and programming of CVEF projects in their headquarters office, and address improvements from a statewide perspective.

2. Designate, in headquarters and in each Caltrans District, a program advisor and maintenance coordinator for all improvement projects.

3. Develop an annual priority list of projects for existing facilities by using the criteria developed jointly with CHP.

4. Develop and maintain priority lists of projects for new construction and major upgrading by using criteria developed jointly with CHP.

5. Closely monitor the status of CVEF improvement projects.

6. Conduct traffic and engineering studies to determine the feasibility of building new CVEF and upgrading existing CVEF, and investigate deploying advanced technologies for development of future projects.
7. Design, prepare contract documents, advertise, and administer construction of projects funded from SHOPP. Projects funded from sources other than SHOPP may be designed, developed and constructed by other state and local agencies or private entities by agreements, or under encroachment permits.

8. Allocate $5 million dollars annually from SHOPP for four years beginning 2010/11 for the construction of improvement projects to maintain and upkeep existing facilities. Funding to upgrade existing facilities and new facility construction will be subject to the availability of SHOPP funds. The California Department of Transportation will make a good faith effort to allocate additional funds of $10 million a year for new CVEF construction. In addition, Caltrans will fund the installation of radiation portal monitor structures at new CVEF subject to availability of funds from SHOPP. Funding for construction of radiation portal monitor structures at existing facilities will be subject to available funds in SHOPP for improvement projects.

9. If Caltrans is unable to allocate funds as stated in number eight above, the Director of Caltrans, or a designated representative, shall communicate the facts in writing to the Commissioner of the CHP.

10. Administer funding for all projects that are designed and constructed by Caltrans.

11. Promptly notify CHP of unforeseen problems delaying maintenance activities on projects.

12. Provide maintenance of the CVEF not delegated to CHP under the IA.

13. Upon completion of the construction of the radiation portal monitor structures, Caltrans will issue necessary encroachment permits at no cost to CHP, and CHP's contractor, for installation of radiation detector devices and for maintenance of related devices, equipment, and appurtenances.

14. Continue to pursue long term goals of securing funding approval for new CVEF.

b) Responsibilities of CHP:

1. Accept responsibility for maintenance, repair, or modification of CVEF, as provided within the parameters of the IA.

2. Coordinate all maintenance activities not covered under the IA between the local CHP commander with control over the facility and the designated District Maintenance Coordinator. A CHP 280, Caltrans Maintenance Request for Commercial Vehicle Inspection Facility and Platform Scales form, shall be prepared by the commander or facility supervisor for each maintenance request and then forwarded to the District Maintenance Coordinator, and a copy to CHP Facilities Section.
3. Coordinate the development of improvement projects and the development of priority lists with Caltrans Headquarters and District Weigh Station Program Advisors, and CHP, Commercial Vehicle Section.

4. Assign a CHP Headquarters coordinator to meet with the Caltrans Headquarters Program Advisor on a periodic and regular basis, to facilitate the resolution of CVEF concerns.

5. Provide a list of CHP contacts to coordinate with the Caltrans District Program advisors and maintenance coordinators.

6. Provide funding for preparing plans and contract documents, and administering the installation of radiation portal monitor equipment at new and existing CVEF when deemed an operational necessity by the CHP. The structures for this equipment will be subject to available SHOPP funds. The CHP shall be solely responsible for maintaining (including but not limited to repairing, replacing, removing, or protecting) all such materials, equipment, and appurtenances, excluding the radiation portal monitor structures.

c) Mutual responsibilities of CHP and Caltrans:

1. Cooperate in maintaining and improving the existing CVEF and in the construction of new facilities.

2. Annually develop and update the list of priorities for CVEF improvement projects.

3. Determine the specific location and configuration of any new facility based on operational needs, traffic volumes, engineering studies, environmental considerations, and right-of-way concerns.

4. Maintain routine contact between CHP and Caltrans on CVEF matters covered by this document through the designated Caltrans Headquarters Programs Advisor and the CHP Headquarters Coordinator.

5. Hold regular meetings with the CHP Headquarters coordinator and the Caltrans Headquarters Program Advisor, on an agreed upon schedule, to review the status of projects and maintenance needs.

FACILITY MAINTENANCE

Within this context, “maintenance” is defined as “the preservation, upkeep, and restoration of the roadway structures and appurtenant facilities as nearly as possible in the condition in which they have been constructed” and, additionally, as “the preservation and keeping of right-of-ways, and each type of roadway structure, safety, convenience of device, planting, illumination equipment and other facilities, in the safe and usable condition to which it has been improved or constructed, but does not include reconstruction or other improvements.” Also included is “the
special or emergency maintenance or repair necessitated by accidents or by storms, or other weather conditions, slides, settlements, or other unusual or unexpected damage to a roadway, structure, or facility."

A listing of Caltrans and CHP maintenance responsibilities and procedures for initiating required maintenance work is provided in the IA.

A. Facility Maintenance - Caltrans Responsibilities.

The California Department of Transportation is responsible for all maintenance and repair items within Caltrans right-of-ways, which is not specifically identified as a CHP responsibility. The CHP commanders, or their designated alternates, are to ensure maintenance work deemed the responsibility of Caltrans is coordinated through the local Caltrans District Maintenance Coordinator, or the Maintenance Area supervisor. Annex H shows a list of telephone numbers for District Maintenance coordinators.

Procedures for requesting Caltrans maintenance work is included in Annex F. A copy of the Maintenance Request for CVEFs is also included in Annex G.

B. Facility Maintenance - CHP Responsibilities.

Under the terms of the joint CHP/Caltrans IA, the CHP has primary responsibility for specified repair and maintenance at facilities. Facility commanders, Division Special Services commanders, or their designated representatives shall coordinate these responsibilities with the Division analyst at the CHP Facilities Section.

Also, not withstanding the radiation portal monitor structure, the CHP is responsible for maintaining (including but not limited to repairing, replacing, removing, or protecting) all such materials, equipment, and appurtenances as part of the radiation portal monitor system. Enforcement and inspection areas/facilities that are located out of Caltrans’ right-of-way are not covered by this agreement.

TRACKING AND CONTROLLING COMMERCIAL VEHICLE ENFORCEMENT FACILITY IMPROVEMENT PROJECTS

The California Department of Transportation and CHP are jointly responsible for the tracking and controlling of major and minor improvements and new CVEF projects. Both agencies have agreed to meet every two months to ensure open lines of communication between the agencies and to enhance their ability to effectively communicate their needs.

Representatives from Caltrans, Office of Truck Services, and CHP, Facilities Section, shall meet regularly to review the status of ongoing projects. The status of projects is updated by Caltrans with their District Weigh Station Program Advisor's input on a regular basis. New projects may be introduced, and changes in minor project priority may be executed as needed. Participants should include input from CHP's field Division Special Services commanders and Caltrans District Weigh Station Program advisors as appropriate.
A CHP Facility Section representative should meet regularly with a Caltrans representative (of the appropriate managerial level) for a complete program review and update. Projects currently under way, as well as those under consideration, will be evaluated on the basis of progress, priority, and/or feasibility, as appropriate. Any mutually agreed upon changes can be instituted as a result.

FACILITY DESIGN

The California Department of Transportation, Office of Truck Services, Office of Structural Design, and CHP, Facilities Section representatives should review and approve design proposals for future facilities and, if necessary, develop and approve any design changes or modifications.
# ANNEX A

## EXISTING COMMERCIAL VEHICLE ENFORCEMENT FACILITIES

<table>
<thead>
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<th>No.</th>
<th>Name</th>
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</tr>
</thead>
<tbody>
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<tr>
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# ANNEX A

**EXISTING COMMERCIAL VEHICLE ENFORCEMENT FACILITIES (continued)**

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<td>Ridgewood (Old Willits)</td>
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<td>52.</td>
<td>Carson (Out of Service)</td>
<td>N/B I-405</td>
<td>07-LA-405-12.2</td>
</tr>
<tr>
<td>53.</td>
<td>Carson (Out of Service)</td>
<td>S/B I-405</td>
<td>07-LA-405-12.2</td>
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</tbody>
</table>
ANNEX A

PROPOSED COMMERCIAL VEHICLE ENFORCEMENT FACILITIES

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Route</th>
<th>Dist-Co-Rte- PM</th>
</tr>
</thead>
</table>
ANNEX B

FACILITY DEFINITIONS

Definitions have been developed for Commercial Vehicle Enforcement Facilities (CVEF) based upon primary function, staffing needs, size, location, and physical configuration. Five classifications have been established to define existing and future facilities: A, B, C, D, and mini-sites.

There are currently 51 CVEF in 37 locations operating throughout the state, plus 73 mini-sites. Five classifications have been established to define existing and future facilities: A, B, C, D, and mini-sites. Of the 51 facilities in operation, there are four class “A,” 15 class “B,” 15 class “C,” and 17 class “D.” Two class “D” facilities are out of service.

A Facility Location List and Facility Features and Equipment List are included in Annexes A and C, respectively.

1. CLASS “A”

Class “A” facilities are located at strategic ports of entry into the state and have independent California Highway Patrol (CHP) command identity.

Class “A” facilities normally operate 24 hours per day, seven days per week, or match the hours of operation of federal ports of entries when located at international borders with Mexico. Class “A” facilities may be used by other state or local agencies as well as jointly used by bordering state representatives at the CHP commander’s discretion. Therefore, they should include in their design administrative office space designated for agencies such as the Air Resources Board (ARB), Board of Equalization (BOE), Department of Motor Vehicles (DMV), and the county court clerk. Accommodations and funding should also be included for the installation of the mainline electronic bypass management system. The California Department of Food and Agriculture (CDFA) may co-locate at identified sites.

Class “A” facilities generally have weigh-in-motion (WIM) and static scales for weighing vehicles, and covered areas for inspection of vehicles and equipment. The covered inspection areas should be constructed with three or more bays (at least one designed without inspection pits). The number of bays is determined by the average daily truck traffic and projected long-term needs for the location. The facility should have an open storage area for legalizing loads, a parking area, and an area to permit the turning of trucks for reweighing. Class “A” facilities are designed and staffed for a primary focus on the inspection of vehicle size, weight, equipment, and loads during all hours of operation.

Class “A” facilities should include a secured room for weapons storage/maintenance, a room for storage of evidence and other sensitive items, a break room, a briefing room, a training room, and a work area for maintaining state vehicles.
Class “A” commercial facilities are typically commanded by a lieutenant and staffed by sergeants, officers, Commercial Vehicle Inspection Specialists (CVIS), clerical staff, maintenance workers and/or janitors and may include automotive technicians.

Class “A” Facility at Calexico, CA
ANNEX B

FACILITY DEFINITIONS (continued)

2. CLASS “B”

Class “B” facilities are located along major highway routes and have an independent CHP command identity.

Class “B” facilities may operate up to 24 hours per day, seven days per week. Class “B” facilities may be used by other state or local agencies such as the ARB, BOE, DMV, CDFA, and the county court clerk. Administrative office space should be included in the facility design to accommodate allied agency use on a permanent or frequent basis. Accommodations and funding should also be included for the installation of the mainline electronic bypass management system.

Class “B” facilities generally have WIM and static scales for the weighing of vehicles and covered inspection areas for the inspection of vehicles and equipment. The covered inspection areas should be constructed with two or more bays (at least one designed without an inspection pit). The number of bays is determined by the average daily truck traffic and projected long-term needs for the location. The facility should have an open storage area for legalizing loads, a parking area, and an area to permit the turning of trucks for reweighing. Class “B” facilities are designed and staffed for a primary focus on the inspection of vehicle size, weight, equipment, and loads during all hours of operation.

Class “B” facilities should include a secured room for weapons storage/maintenance, a room for storage of evidence and other sensitive items, a separate break room, and briefing/training rooms.

Class “B” facilities are typically commanded by a lieutenant and staffed by sergeants, officers, CVIS, clerical staff, and maintenance workers and/or janitors.
ANNEX B

FACILITY DEFINITIONS (continued)

3. CLASS “C”

Class “C” facilities are located at strategic points on major highway routes. These facilities may operate 24 hours per day, five or seven days per week, predicated upon variable factors such as the average daily truck traffic and peak commercial traffic hours. These facilities may have WIM systems and should have static scales designed for vehicle weighing, areas for the inspection of vehicle equipment, an open storage area for legalizing loads, a parking area, and an area to permit the turning of trucks for reweighing. Accommodations and funding should also be included for the installation of the mainline electronic bypass management system.

Class “C” facilities are designed and staffed for a primary focus on the inspection of vehicle size, weight, equipment, and loads. Class “C” facilities not equipped with a covered inspection area and/or under-truck lighting, direct their primary focus on vehicle inspections during daylight hours. During nighttime and periods of inclement weather, this focus is redirected toward size, weight, and loading enforcement, as well as conducting inspections of driver qualifications and topside vehicle equipment.

Class “C” facilities are staffed by officers and may be staffed by sergeants and CVIS, depending on the size, function, and location of the facility. Class “C” facilities located in close proximity to class “A” or “B” facilities will become a portion of that command structure. Remaining class “C” facilities are under the direct command of the respective Division Special Services commander, and, in those instances where a sergeant has not been specifically assigned to the facility, are supervised by the Division commercial sergeant.

A class “C” special facility has all the features and equipment of a class “C” facility, plus a covered inspection area containing up to three inspection bays. Due to its remote location, a class “C” special facility may have additional items such as a sergeant’s office, break room, weapons room, and evidence room.
Class “C” Facility at Santa Nella, CA
ANNEX B

FACILITY DEFINITIONS (continued)

4. CLASS “D”

Class “D” facilities are located at strategic points on major and secondary highway routes. Operational hours of these facilities are based on such factors as: the average daily truck traffic, peak truck traffic hours, and seasonal needs. These facilities shall have scales designed for the weighing of vehicles and may have a limited open area for the inspection of vehicle equipment. Accommodations should be made for the installation of the mainline electronic bypass management system.

Class “D” facilities are designed and staffed for a primary focus on the weighing of vehicles.

Class “D” facilities are staffed by officers. Class “D” facilities located in close proximity to class “A” or “B” facilities will become a portion of that command structure. Remaining class “D” facilities are under the direct command of the respective Division Special Services commander, and are supervised by the Division commercial sergeant.

Class “D” Facility at Livermore, CA
5. MINI-SITE

Mini-sites are designed as safe locations for portable scale operations and are strategically located on highways with an above-average volume of commercial vehicle traffic, to screen vehicles that may use alternative routes to avoid the CVEF.

The site should include an area designed for truck inspections, and may be randomly used by mobile road enforcement officers.

Operational equipment for mini-sites is normally transported to the site. Truck traffic is directed into the site by traffic control signs and devices. Mini-site locations are under the command of the facility commander or Division Special Services commander who has supervisory responsibility for the officers using the site.

Mini-Site Facility on Route 37 in Sonoma County, CA
ANNEX C

FACILITY FEATURES AND EQUIPMENT LIST

The following minimum features and equipment are necessary for the safe and efficient operation of all CVEF. Facility needs are listed by class of facility and supplying agency.

CLASS “D” FACILITY

Supplied by the California Department of Transportation (Caltrans):

- Static scales.
- Loop counters.
- Height sensor.
- Length sensor.
- Public address system.
- Protective barrier between scale grounds and highway traffic.
- Public restrooms.
- Adequate counter space for scale readout, computer, printing, radiological monitor, radio, and traffic control equipment.
- Digital weight display (scale head) and printer.
- Overweight alarm.
- Bullet-resistant glass and under-glass wall panels on all windows facing the highway.
- Drinking fountains in the office, inspection, and public areas.
- Office and counter space for enforcement activities.
- Storage area for California Highway Patrol (CHP) forms.
- Central heating and air conditioning system.
- Adequate storage area to house communication equipment (radio, telephone, Management Information System [MIS]).
- Window coverings.
- Janitor closet with mop, sink, and storage cabinets for supplies.
- Facility utility equipment storage room.
- Outdoor security lighting.
- Under-counter storage shelving and drawers for enforcement supplies.
- Emergency eye wash.
- Emergency shower.
- Traffic control lights in scale lanes.
- Highway sign (changeable message, also known as Weigh Station Message Sign).
  1. “ALL TRUCKS STOP AT SCALES.”
  2. “SCALES CLOSED DO NOT ENTER.”
  3. “BUSES ONLY STOP AT SCALES.” - (This is an optional feature that may be considered for installation at selected locations when replacing nonfunctioning signs.)
ANNEX C

FACILITY FEATURES AND EQUIPMENT LIST (continued)

The following may be included:

- Video traffic and security monitoring system.
- Flag pole with base light.
- Communication tower.

Supplied by CHP (Caltrans preparation work may be required to facilitate installation):

- Telephone system for employees and the public.
- Printer and MIS system.
- Personal computer workstation including printer.
- Citation imprinter.
- Rechargeable flashlight unit.
- Portable CHP radio and charger.
- Filing cabinets.
- Bookcases.
- Tables.
- Side chairs.
- Adding machine.
- Supply/storage lockers.
- Counter stools.
- Antenna and related equipment for CHP communication.

CLASS "C" FACILITY

All features and equipment of a class "D" facility, plus:

Supplied by Caltrans:

- Video traffic and security monitoring system.
- In-office storage space for Commercial Vehicle Inspection Specialist equipment.

The following may be included:

- One to three inspection bays.
- Inspection pit or under truck lights.
- Bay doors.
- Traffic lights (interior and exterior of bays).
- Emergency signaling system.
ANNEX C

FACILITY FEATURES AND EQUIPMENT LIST (continued)

• Truck request/cancel system.
• Exhaust fume removal system.
• Individual heating systems for CVIS and officer inspection bay work stations.
• Flag pole with base light.
• Panic alarm system for the CVIS.
• Generator (installed only at ports of entry to maintain operation at full capacity during a power outage).

Supplied by CHP (Caltrans preparation work may be required to facilitate installation):

• Copy machine.
• Microwave oven.
• Refrigerator/freezer.
• Safety step ladders.
• Large wall-mounted fans (for inspection bay summer cooling in high heat areas).
• Fax machine.
• Base station with CHP radio console.

CLASS "B" FACILITY

All features and equipment of a class “C” facility, plus:

Supplied by Caltrans:

• Inspection bays.
• Inspection pits and bay doors, may include under truck lights.
• Commander’s office (one occupant).
• Public counter and enforcement office.
• Supervisors’ office (three-four occupants).
• Sufficient office space for clerical positions assigned (1.5) and file storage.
• Conference/training room with chalk boards and storage.
• Weapons/evidence security room(s).
• Men’s and women’s locker rooms equipped with restrooms and showers of sufficient size to account for fluctuations in employee gender representation. (Where possible, provide a moveable wall separating men’s and women’s locker rooms that can be adjusted when significant fluctuation occurs.)
• Employee break/lunch room with storage cabinets.
• Combined briefing/training room (that can be separated with a floor to ceiling accordion divider) with storage cabinets.
ANNEX C

FACILITY FEATURES AND EQUIPMENT LIST (continued)

- Built-in kitchen unit (sink, garbage disposal, stove, and refrigerator/freezer).
- Water faucets in inspection bays (one for each bay).
- Compressed air system.
- Compressed air hook-ups in each bay and in weapons room.
- Employee mail slots.
- Office and counter space for interagency personnel.
- Flag pole with base light.
- Generator (maintain the operation of emergency/security lighting for the office and parking area. At ports of entry, maintain operation at full capacity during power outage).

Supplied by CHP (Caltrans preparation work may be required to facilitate installation):

- Radio/monitor speakers.
- Television/VCR.
- A 35mm or digital camera.
- Polaroid camera.
- Personal computer and workstation equipment, including printer and modem.
- Executive wood desk and chair.
- Metal desks (with and without typing pedestals) and chairs.
- Ergonomic chairs for clerical work stations.
- Executive wood bookcases.
- Evidence locker.
- Shotgun/ammunition locker.
- Weapons clearing tube.
- Briefing tables.
- Stacking chairs.
- Typewriter.
- Postage scale and meter.
- Date/time clock.

CLASS “A” FACILITY

All features and equipment of a class “B” facility, plus:

Supplied by Caltrans:

- Sufficient office, scale head and business counter space for allied agency personnel.
- Generator, (maintain operation at full capacity during power outage).
ANNEX C

FACILITY FEATURES AND EQUIPMENT LIST (continued)

Supplied by CHP (Caltrans preparation work may be required to facilitate installation):

- Comprehensive computer database for use by CHP and other state agencies assigned to the facility.
ANNEX D

PROJECT PROCEDURES AND FUNDING PROCESS FOR COMMERCIAL VEHICLE ENFORCEMENT FACILITIES

A. Identification

Projects may be identified through input from California Highway Patrol (CHP) field Division Special Services commanders, California Department of Transportation (Caltrans) District Weigh Station Program advisors, local CHP commanders, Caltrans maintenance personnel, CHP and/or Caltrans Headquarters.

Projects may be identified as a result of biennial facility inspections conducted by Caltrans and/or CHP.

The California Department of Transportation Weigh Station Maintenance coordinators and/or CHP Headquarters personnel may reclassify a project originally submitted as maintenance or a major/minor improvement project.

New facility construction projects may be identified by outside sources such as other governmental agencies, legislative bodies, and citizen groups.

B. Prioritization

1. Projects for new construction or major upgrading of existing facilities.

   These projects are prioritized jointly based upon criteria including: average daily truck traffic; bypass capability; proximity to existing facilities; proposed highway improvements; high speed weigh-in-motion (WIM) information; and, traffic collision trends. Additional items considered, although not in priority order, include whether or not:

   a. The site will be cost-effective.
   b. The climate and geographical terrain may limit effectiveness of the facility.
   c. The appearance of the facility and the operational noise level are acceptable to the community.
   d. An adequate right-of-way can be acquired to accommodate the facility.
   e. Effective measures can be taken to eliminate bypass routes.
   f. The water supply and utilities needed for efficient operation of the facilities are reasonably available.

The network of facilities must provide maximum protection for as many highways as possible; however, commercial vehicle traffic passing through an installation should not be subject to duplicate control by other facilities within close proximity.
ANNEX D

PROJECT PROCEDURES AND FUNDING PROCESS FOR COMMERCIAL VEHICLE ENFORCEMENT FACILITIES (continued)

2. Projects to upkeep and maintain existing facilities.

These projects are prioritized by use of a Caltrans/CHP developed project priority rating process. (Annex E)

C. Approval

The approval for new Commercial Vehicle Enforcement Facilities (CVEF) projects is made jointly between the CHP and Caltrans.

D. Expenditure/authorization and program initiated by Caltrans

1. Project scope of work and cost estimate are prepared by Caltrans.
2. A project initiate document is prepared by the Caltrans District.
3. A project is programmed by Caltrans, Office Truck Services.

E. Procedures

1. Projects for new construction or major upgrading of existing facilities.
   a. Requests for major facility improvement projects, including relocation and new construction, shall be routed through the appropriate Division chief to Commercial Vehicle Section (CVS) and Facilities Section, and subsequently to Caltrans, Office of Truck Services.

2. Projects to upkeep and maintain existing facilities.
   a. Requests for facility improvement projects shall be routed through the appropriate CHP field Division Special Services commander, to CVS, and Facilities Section. Facilities Section will forward them to Caltrans, Office of Truck Services.
   b. The California Department of Transportation Headquarters, and CVS will jointly prioritize approved projects and schedule for their completion.
   c. The California Department of Transportation District Weigh Station Program advisors may be used as a resource for local development projects.
   d. The improvement list will be updated on a yearly basis unless an emergency situation requires modification of the current year’s list.
ANNEX D

PROJECT PROCEDURES AND FUNDING PROCESS FOR COMMERCIAL VEHICLE ENFORCEMENT FACILITIES (continued)

Annex F provides additional information and steps that should be taken to process projects to upkeep and maintain the existing facilities.

   a. Application for State Highway Operation and Protection Program (SHOPP) candidacy.
   b. Project, alternatives, and costs discussed.

4. State Highway Operation and Protection Program approval.
   a. Approval presented to California Transportation Commission (CTC) for funding.
   b. Funding includes only right-of-way and construction costs.

5. Project report.
   a. Detailed project discussion.
   b. Specific alternative identified.
   c. Environmental clearances obtained.
   d. Right-of-way purchased.

   b. Specifications – material specifications, costs, and payments.

7. Funds approval.
   a. Funding approval reaffirmed by CTC.

8. Advertisement of project.
   a. Bid packages prepared, released, advertised.
   b. Bids returned.
   c. Contracts awarded.
   d. Time limits defined.
   e. Direction on meeting specifications.
ANNEX D

PROJECT PROCEDURES AND FUNDING PROCESS FOR COMMERCIAL VEHICLE ENFORCEMENT FACILITIES (continued)


10. Completed project accepted by CHP and Caltrans.

11. Funding.

a. Projects for new construction or major upgrading of existing facilities.

Necessary funding for major facility projects is obtained by Caltrans through federal funding, or the SHOPP in conjunction with the CTC.

b. Projects to upkeep and maintain existing facilities.

The California Department of Transportation sets aside funds from their Department project budget specifically for weigh station and WIM improvements. These funds are administered through Caltrans Headquarters.
ANNEX E

PROJECTS PRIORITY RATING TO UPKEEP AND MAINTAIN EXISTING FACILITIES

This calculation worksheet was designed and will be used by the California Department of Transportation and California Highway Patrol staff to help evaluate the need and priority of minor improvement projects.

<table>
<thead>
<tr>
<th>NO</th>
<th>ITEM</th>
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<tbody>
<tr>
<td>I.</td>
<td>Categories of Work.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.</td>
<td>40</td>
<td>Personnel safety with California Occupational Safety and Health Administration.</td>
<td></td>
</tr>
<tr>
<td>B.</td>
<td>32</td>
<td>Operations safety (video cameras, lengthen approach lanes, etc.).</td>
<td></td>
</tr>
<tr>
<td>C.</td>
<td>30</td>
<td>Upgrade to command status.</td>
<td></td>
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<tr>
<td>D.</td>
<td>22</td>
<td>Truck control and movement (signals, signing, striping, out-of-service parking, etc.).</td>
<td></td>
</tr>
<tr>
<td>E.</td>
<td>18</td>
<td>Weighing capability enhancements (audible alarms, speakers, printers, etc.).</td>
<td></td>
</tr>
<tr>
<td>F.</td>
<td>15</td>
<td>Remodel for interagency clerical need.</td>
<td></td>
</tr>
<tr>
<td>G.</td>
<td>10</td>
<td>Personnel/staff enhancements (staff room, lockers, showers, etc.).</td>
<td></td>
</tr>
<tr>
<td>H.</td>
<td>5</td>
<td>Increased space needs (files, storage, etc.).</td>
<td></td>
</tr>
<tr>
<td>I.</td>
<td>4</td>
<td>Public improvements (restrooms, telephones, vending machines, etc.).</td>
<td></td>
</tr>
<tr>
<td>II.</td>
<td>Type of Facility.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.</td>
<td>20</td>
<td>Port of entry inspection facility (POE).</td>
<td></td>
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<tr>
<td>B.</td>
<td>15</td>
<td>Inspection facility.</td>
<td></td>
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<tr>
<td>C.</td>
<td>10</td>
<td>Platform scale with commercial vehicle inspection specialist (CVIS) assigned.</td>
<td></td>
</tr>
<tr>
<td>D.</td>
<td>5</td>
<td>Platform scale without CVIS, includes mini-sites.</td>
<td></td>
</tr>
<tr>
<td>III.</td>
<td>Hours of Operation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A.</td>
<td>10</td>
<td>24 hours, 7 days/week.</td>
<td></td>
</tr>
<tr>
<td>B.</td>
<td>8</td>
<td>24 hours, 5 days/week.</td>
<td></td>
</tr>
<tr>
<td>C.</td>
<td>6</td>
<td>16 hours, 5 days/week.</td>
<td></td>
</tr>
<tr>
<td>D.</td>
<td>4</td>
<td>8 hours, 5 days/week.</td>
<td></td>
</tr>
<tr>
<td>E.</td>
<td>2</td>
<td>Seasonal/random.</td>
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</tbody>
</table>
ANNEX E

PROJECTS PRIORITY RATING TO UPKEEP AND MAINTAIN EXISTING FACILITIES (continued)

IV. Type of Roadway.
   A. 10 Freeway > 4 lanes.
   B.  8 Freeway <= 4 lanes.
   C.  6 Conventional highway 4 lanes.
   D.  4 Conventional highway 2 lanes.

V. Average Daily Truck Traffic.
   A.  20 >6,000.
   B.  16 4,000 – 6,000.
   C.  14 500 – 4,000.
   D.  6 < 500.
ANNEX F

CALIFORNIA DEPARTMENT OF TRANSPORTATION
MAINTENANCE PROCEDURES

Procedures.

The CHP 280, California Maintenance Request for Commercial Vehicle Inspection Facility and Platform Scales (Annex G) has been developed to improve communications between the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans) by providing the ability to track requests for maintenance and ensure timely response to requests. The CHP 280 shall only be used for those requests not already covered by the current interagency agreement (IA) between CHP and Caltrans.

A. Commanders shall indicate the location, facility name, and a brief description of the maintenance or repair being requested, and sign and date the form. The original CHP 280 shall be forwarded to the local Caltrans District Weigh Station Maintenance Coordinator with a copy sent to CHP Facilities Section for use in recording and tracking repair requests.

B. Upon receipt of a response from Caltrans, the commander shall provide a copy of the response regarding the work completion schedule directly to CHP Facilities Section for use in follow-up coordination and tracking at Headquarters level with Caltrans.

C. The California Department of Transportation District Weigh Station Maintenance Coordinator will evaluate requests and coordinate maintenance projects.

D. Any maintenance or repair work that is questionable as to responsibility (CHP or Caltrans) will be resolved by the CHP Facility Maintenance Coordinator at CHP Facilities Section in cooperation with Caltrans.

Funding

Necessary funding for facility maintenance is provided as part of a joint CHP/Caltrans IA. Under the terms of the agreement, Caltrans transfers an agreed upon sum (currently $2 million annually) to CHP. These funds are administered by CHP’s Fiscal Management Section.
## ANNEX H

### TELEPHONE NUMBERS

OF THE CALIFORNIA DEPARTMENT OF TRANSPORTATION

WEIGH STATION PROGRAM ADVISORS

<table>
<thead>
<tr>
<th>CALTRANS DISTRICT</th>
<th>WEIGH STATION PROGRAM ADVISOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>HQ</td>
<td>(916) 654-6914</td>
</tr>
<tr>
<td>1</td>
<td>(707) 445-6382</td>
</tr>
<tr>
<td>2</td>
<td>(530) 225-3251</td>
</tr>
<tr>
<td>3</td>
<td>(530) 741-5712</td>
</tr>
<tr>
<td>4</td>
<td>(510) 286-4560</td>
</tr>
<tr>
<td>5</td>
<td>(805) 549-3473</td>
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<td>(559) 444-2559</td>
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<td>7</td>
<td>(213) 897-3400</td>
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<tr>
<td>8</td>
<td>(909) 383-7959</td>
</tr>
<tr>
<td>9</td>
<td>(760) 872-0674</td>
</tr>
<tr>
<td>10</td>
<td>(209) 948-7373</td>
</tr>
<tr>
<td>11</td>
<td>(619) 688-3368</td>
</tr>
<tr>
<td>12</td>
<td>(949) 724-2929</td>
</tr>
</tbody>
</table>
ANNEX I

THE DEPARTMENT OF CALIFORNIA HIGHWAY PATROL MAINTENANCE RESPONSIBILITIES AND PROCEDURES

A. The California Department of Transportation (Caltrans) will be responsible for all maintenance and repair items not specifically identified as California Highway Patrol (CHP) responsibility under the terms of the current interagency agreement (IA).

B. The California Department of Transportation is not responsible for facilities built outside of Caltrans’ right-of-way.

PROCEDURES

A. Commanders or their designated representatives shall direct requests for repair, maintenance, or contract services included in the IA to the Facility Maintenance Coordinator assigned to Facilities Section at (916) 843-3400.

B. When approving maintenance or repair work, the Facility Maintenance Coordinator will supply a contract number or “X” number to the individual requesting the work. The following procedures outline the responsibilities of commanders, or their designated representative, and steps required to obtain an “X” number:

1. DEFINITION: “X” numbers are electronic mail (e-mail) authorizations to contract for services/repairs.

2. SECURING BIDS: Commanders are responsible for securing bids for necessary service.

a. For service estimated to cost $4,999.99 or less, three bids are required. If a certified small business is used, only two bids are required. Price quotes are obtained by telephone. Record the contractor information on a CHP 78X, X Number Service Order.

b. Only one bid is required for emergency repair/service. Emergency is defined as “necessary for the immediate preservation of life or state property.” Record the contractor information on a CHP 78X, and provide an explanation of the emergency.

c. In cases where only one bid can be obtained, record the information on a CHP 78X and provide an explanation as to why only one bid was obtained.

3. Service of $5,000 or more: A contract must be negotiated as “X” numbers will not be issued for service of $5,000, or more. Contact the Facility Maintenance Coordinator at Facilities Section if it is anticipated the repair, or service will exceed $5,000.

4. Obtaining “X” numbers: “X” numbers are approved by the commander in Facilities Section.
ANNEX I

THE DEPARTMENT OF CALIFORNIA HIGHWAY PATROL
MAINTENANCE RESPONSIBILITIES AND PROCEDURES (continued)

5. All requests for an “X” number shall be forwarded in writing, in the form of an e-mail, to
the commander at Facilities Section and shall contain the following:

a. Name of facility.
b. Name of requestor.
c. Name of vendor.
d. Estimated cost.
e. Reason/Description.

6. Receipt of “X” number: Upon receipt of the “X” number, the facility commander shall
enter the “X” number on the CHP 78X and contact the contractor to begin service.
Instruct the contractor to:

a. Place the “X” number on the invoice.
b. Send an itemized invoice, in duplicate, to the facility commander for approval. An
   itemized invoice consists of the materials/parts/supply costs, sales tax, labor costs, and
   total amount.
c. The invoice should be on a preprinted billhead or the contractor must sign the invoice
   prior to sending it to the facility.

7. Receipt of the Invoice: Upon receipt of the itemized invoice the facility commander shall:

a. Ensure the invoice is itemized, and in duplicate.
b. Retain the postmarked envelope, and staple it to the invoice.
c. Approve, initial, and date the copy of the invoice.
d. Ensure the “X” number is on the invoice.
e. Forward the original plus one approved copy of the invoice with the contractor’s
   postmarked envelope, and a copy of the e-mail showing approval for the X number
   and the CHP 78X form, to the Facility Division Analyst at CHP Facilities Section
   within three working days of receipt. Retain a copy of the invoice in local files.
8. Duplicate Invoices: Commanders should ensure duplicate invoices are not approved for payment. If a questionable invoice is received, attach a route slip with a notation “Possible Duplicate” and the “X” number that was assigned to the service/repair. Forward the invoice and the postmarked envelope to the Facility Division Analyst in CHP Facilities Section.

9. Payment Inquiries: Facilities receiving inquiries on invoice payment should contact the Facility Division Analyst. The following information must be available.
   a. “X” number.
   b. Contractor’s name.

   If necessary, the facility Division Analyst will contact Fiscal Management Section to resolve payment inquiries.

10. In the event a situation arises that requires immediate emergency repair and the commander of Facility Section cannot be contacted, the commander or designated representative may obtain the emergency repair from a private vendor. However, the commander of Facilities Section must be notified of the work done as soon as practical.

11. Commanders or their designated representative shall ensure all maintenance and repair work is done in a timely and complete manner before payment is authorized.

12. The CHP 280, Caltrans Maintenance Request for Commercial Vehicle Inspection Facility and Platform Scales, is to be used exclusively for requesting maintenance work from Caltrans not covered by the IA.