Evaluation of the National CVISN Deployment Program

Volume 3
Appendices D–I

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APPENDIX D. BENEFIT-COST ANALYSIS SUPPORTING INFORMATION

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APPENDIX D.1
LITERATURE REVIEW ON VALUATION OF BENEFIT MEASURES

This appendix describes the results of an updated literature review that was conducted to ascertain published values of CVISN benefits. Many of these benefits are in natural units other than dollars (e.g., reduction in the number of accidents), and this appendix also discusses how these values have been converted to dollar terms (monetized) for the purposes of this BCA.

CVISN involves improvements to the process of obtaining permits and selecting and processing trucks for inspections through electronic screening (ES), weigh-in-motion (WIM) devices, and checking for compliance with permits issued. Therefore, it can be expected that CVISN will lead to a reduction in the number of truck-related *crashes* and to a reduction in the number of *vehicle hours* traveled as eligible trucks are allowed to by-pass various types of inspections. Savings in vehicle hours traveled affects the cost of operating the trucks, the time value of the goods being transported, and the *air* and *noise pollution* emitted by the trucks. Information on these unit costs is a necessary input to valuing the benefits of the CVISN program. Therefore, the following is a list of the measures for which unit values have been found in this literature review:

- Truck Crash (total value)
- Truck Value of Time
- Air and Greenhouse Gas Emissions
- Noise Pollution.
-

We begin by reporting the results of a detailed review of the literature on the unit dollar value of a reduction in truck crashes (or accidents).

VALUE OF TRUCK CRASHES[1]

This section reports monetary values found in the literature on the unit cost of a truck crash. There have been many studies to estimate the costs of highway crashes involving cars, whereas the literature concerning truck crashes more specifically is sparse. Nevertheless, in the past 10 years, efforts have been made by the Federal Motor Carrier Safety Administration (FMCSA) to sponsor "comprehensive and economically sophisticated reports" that estimate the unit costs of truck crashes in a consistent way. Based on the latest data available on truck crashes in the US and advanced research lead by the Federal Motor Carrier Safety Administration (FMCSA), the estimated unit cost of crashes involving large trucks recommended by the FHWA was estimated to average $94,051 (in 2006 dollars) (Zaloshnja & Miller, 2007, Final report to the FHWA). What follow is a summary of the literature on this topic.

[1] At the outset, it is useful to note that a key finding of the literature search is that the amount of research on the value of crashes involving *trucks* (although increasing) has been limited. Much more literature is devoted to crashes involving automobiles than trucks. Nevertheless, an average truck crash value that *includes* all the significant benefit measures has been obtained (except for property damage to highway infrastructure, which, in any event, is relatively very small and can be ignored as "in the noise").

Based on crash data spanning the years 1988-1997, Zaloshnja & Miller (2000) estimated cost of police-reported crashes involving trucks with a gross weight rating of more than 10,000 pounds averaged $75,637 (in 1999 dollars), while an alternative scenario in the same study estimated the same measure to be of $64,985 (in 1999 dollars), depending on the input values. Such a wide range of unit value of truck crashes can be found in the literature in part because truck crash cost depends on many factors to which there is no single value that one can assign. These costs generally represent the present value (computed at a 4% discount rate in the case of Miller study) of all costs over the victims' expected life spans that result from a crash. They may include measures such as medically related costs, emergency services costs, property damage costs, lost productivity, the monetized value of the pain, suffering, and quality of life that the family loses because of a death or injury. Assigning a single monetary value to pain, suffering and quality of life is not trivial and leads to a wide range of unit value of truck crashes.

Another factor playing a major role in determining a value of truck crash is the definition of truck used to build the database of truck crashes. The National Highway Traffic Safety Administration (NHTSA) defines a large truck as a vehicle with a gross weight rating of more than 10,000 pounds, including single unit trucks and truck tractors of 2 or more trailers. This is the definition that has been adopted in most FHWA sponsored studies in the US. Finally, the unit cost of a truck crash depends on factors directly related with the accident specificities (type of accidents, type of vehicle involved and so on).

Nevertheless, as long as consistency is maintained in the estimation process, in the database selection, and the definition used in following updates, an average truck crash value that includes all the significant cost measures can be obtained.

Early work undertaken by the National Public Services Research Institute (NPSRI) estimated the cost of crashes[2] of "large trucks" as $3.258 million *per incident* if it involved a fatality; $51,881 *per incident* involving a personal injury, and $3,295 *per incident* for a large truck crash involving property damage sufficient to require a tow-away situation (all expressed in 1993 dollars; italics added).[3] After accounting for peculiarities in the data, and weighting by the frequencies of different types of crashes from the *Truck and Bus Accident Fact Book for 1994* produced by the Office of Motor Carriers (OMC), [4] the Volpe Center derived a weighted average (large) truck crash cost of $130,833 (in 1993 dollars). In arriving at this figure, the distribution of crashes used (based on data from the 1994 Accident Fact Book) were:

- Truck crashes with fatalities – 4,795
- Truck crashes with a personal injury – 56,000

[2] For consistency purposes, a few basic definitions are useful. Unless stated to the contrary, an *incident* or a *crash* is defined as an accident of any type or severity that involves any number of vehicles. A *crashed-vehicle* is defined as that amount of the total value of a crash (incident) that has been assigned or allocated to each vehicle involved in the crash. Thus, an accident involving two trucks (say) would imply 1 accident (or crash) and 2 crashed-vehicles.
[3] Ted R. Miller, R.S. Spicer, D.T. Levy, and D.C. Lestina, "The Costs of Motor Vehicle Crashes: Cars, Trucks, Buses, Pedacycles, and Pedestrians," Working Paper, National Public Services Research Institute, October 1996, as cited in Volpe National Transportation Systems Center "OMC Safety Program Performance Measures", (Draft) 12/18/98.
[4] Office of Motor Carriers, *Truck and Bus Accident Factbook 1994*, prepared by the Center for National Truck Statistics (University of Michigan Transportation Research Institute), October 1996.

- Truck crashes involving a tow-away – 90,000.

Note that this source provides no information for truck crashes involving "property damage only" that did *not* involve a tow-away. It can be expected that there were many "fender-benders" for which the property damage was small. Consequently, in comparing the total accidents used in this study with other sources, we conclude that that the value used for property damage-only accidents appears not to include many such minor accidents. Accounting for this factor implies that this figure represents an upper limit to the average value of a truck crash. It also highlights the importance of using a consistent definition of a crash.

Although the definition of a "large truck" is not stated in this study, it is likely to be similar to the type of truck that would benefit the most from the CVISN program. The National Highway Traffic Safety Administration (NHTSA) defines a large truck as a vehicle with a gross weight rating of over 10,000 pounds, including single unit trucks and truck tractors.[5] Rates for fatalities, injuries, and property-damage only crashes were based on the Fatality Analysis Reporting System (FARS) and the National Automotive Sampling System General Estimates System (GES).

For completeness, the weighting from the 1994 edition of the *Truck and Bus Accident Fact Book* is based on a frequency distribution in which trucks are defined as "a motor vehicle equipped for carrying property and having at least two axles and six tires or a vehicle displaying a hazardous materials placard." This definition of a truck may be broader than what would be considered a "large truck". In any event, it is useful to note that the Federal Motor Carrier Safety Administration (FMCSA) has discontinued publication of the Factbook and relies strictly on statistics reported annually in its Large Truck Profile series.

Miller, Viner et al. (1991) made a first attempt to estimate truck and bus crash costs. They first computed costs by threat-to-life severity measured by Maximum Abbreviated Injury Score (AAAM, 1985). By multiplying average costs per highway crash victim by MAIS times the MAIS distribution of victims in crashes sorted by the heaviest vehicle involved, Miller, Viner et al. (1991) estimated costs by vehicle type. Property damage and crash-related travel delay costs were tailored to truck and bus crashes. This study leaded Moses and Savage (1997) to derive a value of $118,211 (in 1992 dollars) for an average truck crash.

Moses and Savage[6] derived a value of $118,211 (in 1992 dollars) for an average truck crash. Their estimate was based on the 1991 study by Miller[7], and also appears to be on a per incident rate with unit costs that are calculated on something other than a per incident basis. The unit costs for a typical truck accident reported by Moses and Savage are given in Table D.1-1.

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[5] National Highway Traffic Safety Administration, "Traffic Safety Facts 1998: A Compilation of Motor Vehicle Crash Data from the Fatality Analysis Reporting System and the General Estimates System", October 1999.
[6] Leon N. Moses and Ian Savage, "A Cost-Benefit Analysis of US Motor Carrier Safety Programmes", *Journal of Transport Economics and Policy*, January 1997.
[7] Ted Miller et al. (The Urban Institute), *The Costs of Highway Crashes*, Report No. FHWA-RD-91-055, October 1991.

Table D.1-1. Costs Associated with Truck Crashes Reported (Moses and Savage, 1997)

Type of Cost	Unit Cost (in 1992 dollars)
Fatality	$2,835,693
Incapacitation injury	$200,885
Non-incapacitating injury	$39,378
Possible injury	$20,181
Persons not injured	$2,055
Property damage	$11,960
Delays to other traffic	$758

Source: Leon N. Moses and Ian Savage, "A Cost-Benefit Analysis of US Motor Carrier Safety Programmes", *Journal of Transport Economics and Policy*, January 1997.

Based on the amounts shown in Table D.1-1, it is clear that "delays to other traffic", at only $758 per incident (in 1992 dollars) is quite small. Subsequent discussions on this subject[8] confirmed that this cost component of a truck crash is relatively inconsequential. Nevertheless, whenever possible, it should be included in the cost of a crash involving a large truck. Property damage associated with truck crashes is not small, and was estimated at $11,960 per incident. It is difficult to determine whether this value includes damage to highway infrastructure—one of the initial measures for which we sought disaggregate information.

Although encumbered by transferability concerns, an Australian study on the cost of truck accidents involving casualties recommended the use of values shown in Table D.1-2. This study reported an average truck crash value of $84,500 (in 1990 US dollars), but was also able to disaggregate the information on truck crashes by truck type and location[9]:

Table D.1-2. Costs Associated with Truck Accidents by Location and Type (Cairney, 1991)

Type of Truck Accident	Australian Dollars	Unit Amount (in 1990 US dollars)
All types	$130,000	$84,500
Rigid truck, metropolitan accident	$90,000	$58,500
Rigid truck, rural accident	$130,000	$84,500
Semi-trailer, metropolitan accident	$130,000	$84,500
Semi-trailer, rural accident	$200,000	$130,000

Note: Conversion Rate: 1$ AU = 0.65$ US

Source: P.T. Cairney, "The Cost of Truck Accidents in Australia: Australian Truck Safety Study: Task 4", *Australian Road Research Board*, Research Report ARR No. 204, June 1991.

Losses to cargo were included in the unit values shown in Table D.1-2 and averaged about $13,000 (AU) or $8,500 (US). This is higher than the results of a study of the value of cargo loss

[8] Telephone conversation with Ted Miller by Tom Parody, CRA, 11/23/99.
[9] P.T. Cairney, "The Cost of Truck Accidents in Australia: Australian Truck Safety Study: Task 4", *Australian Road Research Board*, Research Report ARR No. 204, June 1991.

in Canada which determined a very approximate value of CN $8,000[10] (or approximately $5,600 in US dollars[11]). The Canadian value is similar to the loss of cargo value of $5,000 per truck accident included in Moses and Savage's $118,211 average cost per crash (in 1992 dollars).

A more recent analysis[12] of the cost of crashes by vehicle type along the lines of the work described by Miller, and by Moses and Savage above, developed an overall estimate of $72,000 per crash (in September 1995 dollars) for "other single trucks" (defined as "other single medium and heavy trucks … (with) gross vehicle weight exceeding 10,000 pounds)". This average value is substantially less than the average value of a large truck crash cited above and appears to reflect differences in definitions of what constitutes a crash. That is, the universe of truck crashes in the database used in this later study is reported to be four times as large as other truck-related crash databases. This suggests that it includes many more minor accidents. This later study with the lower crash costs does not break down costs by the categories used in earlier studies (e.g., property damage, personal injury, etc.), which then could be used to develop independent cost estimates or to undertake a benefit-cost analysis at a more disaggregate level.

The $72,000 truck crash value reported by Miller et al. conveniently falls between a value of $66,370 for crashes involving single unit trucks and $89,400 for crashes involving combination unit trucks (both in 1997 dollars) reported by Wang, Knipling, and Blincoe.[13] Using average truck crash statistics that they report as being an average for the 1989-1993 period, the weighted average value for these two categories of truck crashes is $79,762. As with most other studies reported here, these estimates were derived using a 4% annual discount rate to reflect the decreased value of future economic loses (e.g., lost wages).

A continuation and further refinement of the Miller at al. (1999) work is reported in a very recent study for the FMCSA.[14] In particular, based on what they describe as "comprehensive, economically sophisticated estimates of the costs of highway crashes involving large trucks…", *police-reported* crashes involving trucks with a gross weight of more than 10,000 pounds were computed to be $75,637 (in 1999 dollars). Great care was taken in this study to adjust the various input databases for known anomalies. Unfortunately, since cost categories were defined as medical cost, emergency services, property damage (defined to include "the cost to repair damaged vehicles, cargo, and other property…"), lost productivity from delays and other factors, and monetized "Quality-Adjusted Life Years (QALYS)", it is not possible to make a direct comparison to truck accident figures reported in the Truck and Bus Factbook or by the FMCSA.[15] However, as approximately 320,000 annual truck accidents are implied in the

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[10] D. Andreassen, "Trucks, Semi-trailers, and Motorcycles: Accident Costs", *Australian Road Research Board*, Research Report ARR No. 232, 1992.
[11] Although the year was not reported, it is likely to be 1990 or 1991.
[12] Ted R. Miller, Rebecca S. Spicer, Diane C. Lestina, and David T. Levy, "Is It Safest to Travel by Bicycle, Car, or Big Truck?", *Journal of Prevention and Injury Control*, Vol. 1(1), 1999.
[13] Jing-Shiarn Wang, Ronald R. Knipling, and Lawrence J. Blincoe, "The Dimensions of Motor Vehicle Crash Risk", *Journal of Transportation and Statistics*, Vol. 2, Number 1, May 1999.
[14] Eduard Zaloshnja, Ted Miller, and Rebecca Spicer (Pacific Institute for Research and Evaluation), "Costs of Large Truck- and Bus-Involved Crashes", prepared for the Federal Motor Carrier Safety Administration, November 30, 2000.
[15] Federal Motor Carrier Safety Administration, "Large Truck Crash Profile: The 1998 National Picture", January 2000.

calculations reported, the database is more consisted with the latest FMCSA data, which has been used in this evaluation to calculate numbers of truck accidents avoided by CVISN. Thus, as long as consistency is maintained in the definitions used in this CVISN evaluation, this most recent Miller study appears to be the most reliable and useful source of the value of an average truck crash.

Table D.1-3 shows the results from Zaloshnja, Miller, and Spicer (2000). It reports an estimated cost of $75,637 per large truck crash, or $64,985 with a scenario where the "*Delays to other traffic*" is constraint to its 1991 value (all in 1999 dollars).

Table D.1-3. Values of Factors Associated with Truck Crashes (Zaloshnja, Miller, and Spicer, 2000)

Type of Cost	Unit Cost (in 1999 dollars)	
	Main study	Alternative hypothesis for delays to traffic measure (Annex A)
Fatality	$3,358,240	$3,358,240
Incapacitating injury	$298,927	$298,927
Non-incapacitating injury	$69,407	$69,407
Possible injury	$26,527	$26,527
Persons not injured	$1,596	$1,596
Property damage	$3,913	$3,913
Delays to other traffic	*$10,993**	*$341**
Unknown severity	$52,606	$52,606
Unknown if injured	$12,278	$12,278
Average value of a large truck crash	**$75,637**	**$64,985**

Note: The alternative scenario examined in this study constrained travel delay costs to the values reported in Miller et al. (1991).

Source: Edward Zaloshnja, Ted Miller, and Rebecca Spicer (Pacific Institute for Research and Evaluation), "Costs of large Truck- and Bus-Involved Crashes", prepared for the Federal Motor Carrier Safety Administration, November 30, 2000, with additional calculations.

Most striking, however, is the increase in the value of "delays to other traffic" from the earlier 1992 result. As an alternative hypothesis, therefore, the authors elected to constrain the values for the delay component of truck crashes to those reported in Miller at al. (1991). After doing so, the average value of a large truck crash was reported to be $64,985 (in 1999 dollars). Additional phone conversations with the study authors revealed that the authors favor this value, even though it can only be found in the appendix to the study and is not reported or referred to on the abstract page for this work.

The largest component of truck crash costs by far involves the value of a life for accidents involving a fatality. Based on a review and analysis of 50 reasonably credible studies that examined the value that people place on survival, Miller arrived at a $3 million figure for

lifetime work and quality of life combined (in 1995 dollars).[16] This value appears to have been used in both the Miller and the Moses and Savage studies cited above.

In the previous BCA for the CVISN MDI, the $64,985 value was adopted as the average unit costs of a large truck crash (in 1999 dollars).

Further refinement of the Miller *et al.* studies were performed between 2000 and 2007. In 2004, Edward Zaloshnja and Ted Miller published in Accident Analysis and Prevention a new study providing updated estimates of the costs of highway crashes involving large trucks. The unit costs for each factor were updated with the most recent data available. Table D.1-4 shows the values of factors associated with truck crashes from the updated 2004 study of Zaloshnja and Miller.

Table D.1-4. Values of Factors Associated with Truck Crashes (Zaloshnja and Miller, 2004)

Type of Cost	Unit Cost (in 2000 dollars)
Property damage	$6,035
Delays to other traffic	$4,800
Average value of a large truck crash	**$59,153**

Source: Edward Zaloshnja and Ted Miller (Pacific Institute for Research and Evaluation), "Costs of Large Truck-Involved Crashes in the United States", *Accident Analysis and Prevention 36 (2004) 801-808*.

This study updates and improves on Miller (2000). Notably, "costs per non-fatally injured victim were estimated by Maximum Abbreviated Injury Score (MAIS), body part, and whether the victim suffered a fracture/dislocation". Also, the accuracy of the estimates was increased by using updated medical cost, wage, and income data. Finally, Property damage costs were updated using insurance data on commercial vehicle.

The same categories of costs were used: a) Medically related costs, b) Emergency services costs, c) Property damage costs, c) Lost productivity, and d) The monetized value of quality of life that the family loses because of a death or injury.

The estimated cost of police-reported crashes involving trucks with a gross weight rating of more than 10,000 pounds averaged US$ 59,153 (in 2000 dollars). The changes in methodology and the use of newer sources of cost data explains the noticeable difference with the costs reported in the Miller et al. 2000 study. The monetary costs represent an improvement over the previous study. In particular, the property damage costs looks better as they differentiate truck type within the analysis. The delays to other traffic cost also appear more appropriate.

In March 2007, Edward Zaloshnja and Ted Miller published for the FMCSA an updated report on the Unit Costs of Medium/Heavy Truck Crashes. The main difference with the 2004 paper comes from the input database of crashes used to estimates the unit cost. The previous report's

[16] Miller, Ted R., The plausible range for the value of life: red herrings among the mackerel., *Journal of Forensic Economics*, Vol. 3, 1990.

estimates (Zaloshnja and Miller, 2004) was based on the injury severity profile of truck crashes from the 1982-86 period, whereas the estimates presented in the 2007 report to the FHWA are based mainly on the injury severity profile from the 2001-03 period.

Also, the accuracy of the estimates was increased by using updated medical cost, wage, and income data, as well as new sources of cost data (in particular for the occupants' life span). Travel delay and property damage costs were updated directly from the previous study using the wage index for the first and the consumer price index for the second.

Similarly to the previous studies, the 2007 report provides the latest estimates of unit costs for highway crashes involving medium/heavy trucks by severity. These costs, similarly to the past studies, represent the present value, computed at a 4% discount rate, of all costs over the victims' expected life span that result from a crash. They include medically related costs, emergency services costs, property damage costs, lost productivity, and the monetized value of the pain, suffering, and quality of life that the family loses because of a death or injury.

The estimated unit cost of a crash involving trucks with a gross weight rating of more than 10,000 pounds was estimated to average $94,051 (in 2006 dollars). Table D.1-5 shows the results from the 2007 Zaloshnja and Miller study.

Table D.1-5. Values of Factors Associated with Truck Crashes (Zaloshnja and Miller, 2007)

Type of Cost	Unit Cost (in 2006 dollars)
Fatality	$3,669,694
Incapacitating injury	$513,343
Non-incapacitating injury	$164,646
Possible injury	$56,503
Persons not injured	$4,012
Property damage	$8,100
Delays to other traffic	$6,432
Unknown severity	$21,901
Unknown if injured	$9,313
Average value of a large truck crash	**$94,051**

Source: Edward Zaloshnja and Ted Miller (Pacific Institute for Research and Evaluation), "Unit Costs of Medium/Heavy Truck Crashes", prepared for the Federal Motor Carrier Safety Administration, March 13, 2007.

On average, the total cost per large truck crash reported here is about 50% higher than that reported in Zaloshnja and Miller (2004).

A large portion of this increase is explained by the different dollar years used - from 2000 to 2006. For example, Zaloshnja and Miller (2007) report that the medical expenditure index rose 40% whereas the consumer price index rose 17%.

Miller (2007) explains the remaining increase by the change in the injury severity profile. As mentioned earlier, the 2004 study based cost estimates on the injury severity profile of truck crashes in the 1982-86 NASS file, whereas the estimates presented in the 2007 report are based mainly on the injury severity profile in the 2001-03 LTCCS file. It is also noted that the average number of people involved in a crash was only slightly increased – from 1.21 to 1.25.

Table D.1-6 compares truck crash cost values from the Miller et. al studies, all in 2006 dollars. We used the CPI for all items to convert the unit costs in 2006 dollars (this is only an approximate way to remove portion of the difference that is explained by the different dollar years used).

Table D.1-6. Summary of Unit Cost Values of Truck Crash from Miller et al Studies (2006 dollars)

Study	Value of Large Truck Crashes
1999 Study	$91,527
1999 Study (Alternative Hypothesis)	$78,637
2004 Study	$69,252
2007 Study	$94,051

Note: Updated values in 2006 dollars were calculated using the yearly average CPI for All items

The FHWA unit highway crash costs published on line are based on Zaloshnja and Miller studies, similar in methodology to the large truck crash cost estimate. Also, the recommended estimate of the cost of a crash in a 2004 report for Transport Canada[17] draws on Miller methodology and findings. The report highlights the fact that "These [Millers'] cost estimates are comprehensive in their scope of costs covered and take due consideration of potential double counting".

In summary, both the total value and the components of crash costs involving trucks can vary in the literature based on a number of factors, including basic definitional issues. However, the overall value of $94,051 (in 2006 dollars) per truck crash derived by Miller et al. (2007) appears to be the most consistent with the definitions being used in this study and is based on the latest research. Given the several updates and the care to provide further refinements to the unit cost of crash by Miller *et al*, this most recent Miller study appears to be the most reliable and trustworthy source of an average truck crash cost. In our previous CVISN work, we used the results obtained by Zaloshnja and Miller (2000), and the methodology used in their current study is consistent with that employed in that earlier effort. We have therefore adopted the updated value of $94,051 (in 2006 dollars) per large truck crash from Zaloshnja and Miller (2007) for the current CVISN BCA.

Note that the recommended average crash cost of $94,051 includes all the costs associated with a truck crash, with the possible exception of "property damage to highway infrastructure from an

[17] Zhang, Anming; Boardman, Anthony; Gillen, David & Waters, W.G. (2004) "Towards Estimating the Social and Environmental Costs of Transportation in Canada" Center for Transportation Studies, Sauder School of Business, University of British Columbia.

accident involving a CV". The most recent literature will not support separate cost estimates for this impact, nor will it support more precise (but not more accurate) crash cost estimates that vary by state, calculated assuming that the distribution of CVs involved in crashes varies with the state specific commercial vehicle fleet composition.[18]

VALUE OF COMMERCIAL VEHICLE TRANSIT TIME

There is a small but growing body of literature on the value of time (VOT) associated with intercity auto trips.[19] However, there is very little published on the VOT of trucks, perhaps because these are private costs in a competitive market. Truck VOT should include driver wages, truck operating and maintenance costs (including depreciation), and the time value of the freight being transported. Typically, the values of truck travel time in the CVISN literature are limited to the cost of the driver of the truck. For example, the benefit-cost study of the Maryland CVISN program[20] used a driver wage value of $23 per hour (year not stated, but likely in 1996 dollars) obtained from a TRB report.[21]. This is more than the average driver wage of $14.49 per hour (in 1993 dollars) used in the ATA Foundation study of the dollar value of benefits for electronic clearance.[22]

In addition, a study by Titus[23] gives the VOT for truckload (TL) trips as being either 1) the simple driver wage rate of $13.00 per hour (year not stated) or 2) the distance equivalent charge of $0.23 per mile (in 1991 dollars). This latter figure reflects the more common practice of using distance-based costs methods for TL travel. Titus states that less-than-truckload (LTL) wages are higher at $24.60 per hour (in 1991 dollars), although a different source is cited for this statistic. Restated in 1999 dollars, this time based value is $30 per hour – very similar to the $30.38 (in 1995 dollars) used for combination truck VOT in an ITS program evaluation in Indiana.[24]

As noted above, a *total* truck VOT should include truck operating and maintenance (O + M) costs (including depreciation) along with the time value of the freight being carried. In a recent

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[18] Also, the CVISN *Evaluation Strategy and Plan* dated August 27, 1997, called for reducing accident costs by the amount covered by insurance. Upon further reflection, this subtraction is not appropriate since reduced accident rates can reduce insurance premiums to everyone. BCA is a public sector evaluation tool, and subtracting insurance payments would not reflect the value of safety benefits to the *public* (i.e., to all carriers, with the savings passed on to shareholders, shippers and the costs to the public of the shipped goods).

[19] See for example, Brand, Daniel, "The Values of Time Savings for Intercity Air and Auto Travelers for Trips Under 500 miles in the U.S.," Prepared for U.S. DOT, Office of the Secretary, Panel on the Value of Time for Use in Transportation Investment Valuation, June 1, 1996.

[20] Bapna, Sanjay, Jigish Zaveri, and Z. Andrew Farkas (Morgan State University), "Benefit-Cost Assessment of the Commercial Vehicle Information Systems and Networks (CVISN) in Maryland", November 1998.

[21] Transportation Research Board, "Assessing the Economic Impact of Transportation Projects: How to Choose the Appropriate Technique for Your Project", *Transportation Research Circular No. 477*, October 1997.

[22] The ATA Foundation, "Assessment of Intelligent Transportation Systems/Commercial Vehicle Operations (ITS/CVO) User Services Qualitative Benefit/Cost Analysis", Report No. FHWA-MC-96-028, August 1996.

[23] Titus, Matthew J., "Benefits of Electronic Clearance for Enforcement of Motor Carrier Regulations", *Transportation Research Record* 1522, 1996.

[24] Latoski, Stephen, Raktim Pal, and Kumares Sinha, "A Cost-Effectiveness Evaluation of the Hoosier Helper Freeway Service Patrol", Purdue University, February 1998.

study[25], truck O + M costs (including depreciation) for TL carriers were given as $1.25 per vehicle-mile or 8.42 cents per ton mile (in 1994 dollars) based on operating and financial data compiled by the American Trucking Associations (ATA).[26] At an average speed of 50 mph, this implies a variable cost of $62.50 per hour (in 1994 dollars) or $70 (in 1999 dollars).

Inventory costs are available from a study that presented an innovative method of estimating the effects of carrier transit-time performance on logistics cost and service.[27] That study estimated that for just-in-time service delivery, an average shipper is willing to expend $310 to reduce transit time by 24 hours (i.e., from 3 to 2 days). This implies an average unit cost of $12.90 per hour.

It is well known that just-in-time service implies a higher VOT, and that higher value goods are more likely to be transported by air.[28] Still, over all modes (i.e., but not including local package carriers and multiple mode goods), trucks represent the overwhelming majority (87%) of the value of all goods shipped,[29] with about 63% of the value of trucking and courier service being truckload shipments.[30] Thus, it is reasonable to use $10 per hour to represent the time value of goods shipped by truck. This is the same as Brand's 1994 time value for goods in large trucks of $10 per hour.[31] Adding this to the $70 presented above yields a value of $80 per hour for the *total* value of time savings of a truck. This is larger than the value of $50 per hour (year and components not explicitly stated, but the year is likely 1997) for commercial vehicles used in an evaluation of the CVISN pilot project in Washington State.[32]

In a more recent study[33], baseline per-mile costs in 2003 cents for operating a commercial vehicle (including fuel, maintenance and repair, tires and depreciation) was given as 43.4 cents per mile (in 2003 dollars). The total per mile cost for trucks (truck operating and maintenance costs along with the time value of the freight being carried) is estimated to average $1.8 per mile (in 2003 dollars). This implies a *total* truck VOT of $90 per hour (in 2003 dollars). This value is derived from a composite average taken from the variety of sources, including Forkenbrock's work cited earlier. Inflating the $80 per hour VOT derived from Forkenbrock to 2003 dollars yields a comparable cost. As a result, the $90 per hour (in 2003 dollars) VOT derived here, or

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[25] Forkenbrock, David, "External Costs of Intercity Truck Freight Transportation", *Transportation Research A*, Vol. 33, No. 7/8, Sept./Nov. 1999.
[26] American Trucking Associations, *1994 Motor Carrier Annual Report: Financial and Operating Statistics*, (Alexandria, VA), 1995.
[27] Tyworth, John and Amy Zeng, "Estimating the Effects of Carrier Transit-Time Performance on Logistics Cost and Service", *Transportation Research A*, Vol. 32, No. 2, February 1998.
[28] For example, see Federal Highway Administration, "U.S. Freight: Economy in Motion", FHWA-PL-98-034, May 1998.
[29] U.S. Department of Transportation and the U.S. Department of Commerce, "1997 Commodity Flow Survey", December 1999.
[30] U.S. Department of Commerce, "Motor Freight Transportation and Warehousing Survey: 1995", issued February 1997.
[31] Brand, Daniel, "Criteria and Methods for Evaluating Intelligent Transportation System Plans and Operational Tests", *Transportation Research Record No. 1453*, 1994.
[32] Washington Department of Transportation, "Information Technology Feasibility Study for the Washington State Commercial Vehicle Information Systems and Networks (CVISN) Pilot Project, January 8, 1998.
[33] Gary Barnes and Peter Langworthy, "The Per-mile Costs of Operating Automobiles and Trucks", MN/RC 2003-19 , June 2003 *http://www.lrrb.gen.mn.us/PDF/200319.pdf*.

$98.61 in 2006 dollars, is reasonable and is therefore the value we have used in the current CVISN BCA.

For reference, the 2004 Urban Mobility Report[34] identified value of travel time delay for a commercial vehicle as $71.05 per hour (in 2004 dollars). An October 2007 report[35] for the FMCSA provides time and cost estimates for an average roadside inspection of a commercial motor vehicle. The underlying value of travel time delay for a truck is $98.60 (in 2006 dollars).

VALUE OF AIR POLLUTANTS

With regard to the air pollution costs that are to be applied to the time savings per truck, it is important to note that the amount of air pollutants emitted from trucks is dependent on a variety of factors such as engine size and design, vehicle condition, speed, frequency of acceleration and deceleration, temperature, etc. In addition, the (dollar) values in the literature for truck emission rates are highly site specific and vary by significant amounts from study to study. In almost all instances, unit costs in the literature for amounts of air pollution are expressed either as a function of 1) vehicle miles traveled or 2) weight times distance traveled.

With regard to the *rate* at which different types of air pollutants are emitted, ICF Consulting[36] used EPA's Mobile 6.2 model to develop emission rates for a diesel heavy truck moving at a speed of 52 mph. The resulting values are shown in Table D.1-7.

These emission rates are based on a heavy truck in motion. However, for heavy-duty diesel trucks that are idling (e.g., waiting for an inspection), EPA[37] has estimated the following average values (i.e., over summer and winter conditions) in *grams per hour* for a heavy-duty diesel vehicle: NO_x = 55.8, CO = 94.3, VOC = 12.6, and PM10 = 2.57. Fuel consumption for a typical truck that is idling has been estimated at 0.5 gallons per hour.[38]

Others have calculated emission *rates* for heavy-duty diesel trucks that are comparable to those above, but they add carbon dioxide (CO_2) in a separate category – "greenhouse gas (GHG) emissions" -- since some do not view CO_2 as air pollution. Recognizing the great uncertainty of the cost to society of GHG emissions, Forkenbrock[39] has estimated a GHG (only) emissions value due to truck operations of 0.15 cents per ton-mile (in 1994 dollars) based on the amount of CO_2 discharged for each gallon of diesel fuel used (22.8 pounds), the fuel economy of an average truck (5.2 mpg), and the GHG value of CO_2 ($10 per ton). After inflating the 0.15 cents per ton-

[34] The 2004 Urban Mobility Report David Schrank and Tim Lomax, Texas Transportation Institute, The Texas A&M University System, September 2004. Accessed from: http://mobility.tamu.edu.
[35] *Roadside Inspection Costs*, for the Federal Motor Carrier Safety Administration, October 2007. http://www.fmcsa.dot.gov/facts-research/research-technology/report/Roadside-Inspection-Costs-Oct2007.pdf
[36] ICF Consulting, *Assessing the Effects of Freight Movement on Air Quality at the National and Regional Level*, Table 2-6. 2005. 13 May 2008.
[37] Environmental Protection Agency (http://www.epa.gov/oms/consumer/f98014.htm).
[38] "Electronic Diesels and Other Ways to Improve Fuel Economy", *Commercial Carrier Journal*, April 1993, as cited in Office of Technology Assessment, *Saving Energy in U.S. Transportation*, OTA-ETI-589, July 1994.
[39] Forkenbrock, David, "External Costs of Intercity Truck Freight Transportation", *Transportation Research A*, Vol. 33, No. 7/8, Sept./Nov. 1999.

mile into 2002 dollars, the GHG only emissions value due to truck operations becomes 0.18 cents per ton-mile.

Table D.1-7. Fleet Average Heavy Duty Truck Emission Factors, Urban Freeway

		Urban Freeway Emission Factors (grams/mile)				
	Year	VOC	CO	NOx	PM-10 (total)	PM-10 (exhaust only)
Single-Unit Gasoline Truck	2002	1.31	51.39	8.12	0.13	0.11
	2010	0.35	12.24	5.60	0.09	0.07
	2020	0.12	7.74	2.17	0.047	0.025
Single-Unit Diesel Truck	2002	0.42	2.21	22.69	0.42	0.38
	2010	0.28	1.10	8.06	0.17	0.13
	2020	0.27	0.28	1.24	0.071	0.032
Combination Diesel Truck	2002	0.43	2.48	25.65	0.41	0.37
	2010	0.28	1.14	8.38	0.17	0.13
	2020	0.20	0.25	1.28	0.073	0.034

Notes:
VOC = Volatile organic compounds
CO = Hydrocarbons/carbon monoxide
NO_x = Nitrogen oxides
PM10 = Particulate matter less than 10 microns in diameter

Source: ICF Consulting. *Assessing the Effects of Freight Movement on Air Quality at the National and Regional Level*. Table 2-6. 2005. 13 May 2008.

In order to develop a dollar value for the non-GHG emissions shown in Table D.1-7, it is necessary to determine the dollar cost per unit weight for different pollutants. This has been done in a number of studies, but they typically deal with urban area values since "nonattainment" is mostly an urban or metropolitan area concern. Inspection stations, however, are in rural areas. To highlight the differences, Table D.1-8 summarizes "damage value" estimates for various air pollution emissions in urban as well as rural areas derived by the Victoria Transport Policy Institute[40] based on standard vehicle emission rates and mileage.

[40] Victoria Transport Policy Institute. *Transportation Cost and Benefit Analysis – Air Pollution Costs*. Table 5.10-7. 2007. 13 May 2008. < http://www.vtpi.org/tca/tca0510.pdf>.

Table D.1-8. Estimated Vehicle Air Pollution Costs for Heavy Vehicles (in 2002 dollars per ton)

Emission Type	Urban	Rural
CO	$435	$0
NOx	$11,209	$6,389
VOC	$8,963	$7,350
PM	$7,391	$3,622

Note: reflects on standard unit cost values for US vehicle fleet.

Source: Victoria Transport Policy Institute. *Transportation Cost and Benefit Analysis – Air Pollution Costs*. Table 5.10-7. 2007. 13 May 2008.

Given the earlier data on emission rates, we can combine these with the air pollution values and the separate estimate of the value of CO_2 emissions. Using the emission values for rural areas, a heavy duty combination diesel truck in 2002 traveling at 52 mph emits air pollutants (including GHG) at a rate of 1.29 cents per ton-mile or $11.05 per hour (in 2002 dollars) assuming an average truck load of 14.8 tons.[41] Conversely, an idling heavy-duty diesel truck emits air pollutants with a value of $0.099 per hour (in 1999 dollars), a significantly lower figure resulting from the fact that no energy is being expended to move the truck and its freight. Converted to 2006 dollars these values are $12.39 and $0.120 for the values of emission in motion and idling, respectively.

VALUE OF NOISE

There is general agreement in the literature that transportation is a major cause of noise pollution. Similarly, there is agreement that the value of noise pollution is greatly influenced by factors such as traffic characteristics, roadway geometry, vehicle type, speed, and land use/density. It has been noted that trucks have significantly different noise patterns compared to automobiles because of engine size, number of axles, and vehicle weight. There is less agreement, however, on the cost that should be attributable to noise levels produced by truck travel.

A 1996 study by Haling and Cohen[42] found that noise damage costs can vary from 0 to 11.48 cents per mile (in 1993 dollars) for different truck configuration, operating weights, and land use conditions. The damage calculation is based on the reduction of property values caused by vehicle noise emissions.

The 1997 Federal Highway Cost Allocation Study[43] estimates the marginal highway noise costs for Trucks (Single Unit Trucks and Combination Trucks) to be between 0.1 and 3.73 cents per vehicle mile (in 1997 dollars). This reflects the marginal cost of an additional vehicle on major highways.

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[41] ATA, 1995, op. cit.
[42] Haling, David and Harry Cohen, "Residential Noise Damage Costs Caused by Motor Vehicles", *Transportation Research Record 1559*, 1996.
[43] 1997 Federal Highway Cost Allocation Study, USDOT (www.fhwa.dot.gov/policy/hcas/summary/index.htm), Table V-22

Delucchi and Shi-Ling Hsu (1998) [44] calculate marginal noise costs for trucks between 0 and 3.08 cents per vehicle mile (in 1991 dollars).

Based on a consideration of the types of trucks providing intercity freight service, Forkenbrock has estimated a value of 0.045 cents per ton-mile (in 1994 dollars).[45] This value falls within this range, and given the uncertainty associated with this estimate, it is recommended that this value be used in the CVISN evaluation without a further adjustment for CPI changes.

The marginal cost of noise due to light duty vehicles (up to 3.5 tonne gross weight) was 0.03244 Euro per tonne kilometer (in 2000 euros, metric tonne) or about 0.047 Euro per ton-mile (in 2000 euros) in a 2004 European study.[46] The study on the external costs of transport was commissioned by the UIC (International Union of Railways) and the CER (Community of European Railway and Infrastructure Companies) to two independent institutes, INFRAS (Zurich) and IWW (University of Karlsruhe). The study is an update of the initial study carried out to assess the external costs of transport carried out by the same two institutes in 2000.

In 2001, a study prepared for the BTS reported the noise cost between $0.01756 and $0.01053 per vehicle-mile .[47] It is unclear whether trucks are included or not but these fall in the range derived by Delucchi and Shi-Ling Hsu (1998) and we thus confirm the use of Forkenbrock values of 0.045 cents per ton-mile (in 1994 dollars) or $0.00055 per ton-mile (in 2006 dollars).

SUMMARY OF UNIT COST VALUES USED IN CVISN BCA

Table D.1-9 presents a summary of the unit cost values that have been used in the CVISN BCA. They are consistently reported in 2006 dollars. The reader should refer to the relevant section(s) of the preceding text for further information on each item along with the relevant citations.

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[45] Forkenbrock, David, "External Costs of Intercity Truck Freight Transportation", *Transportation Research A*, Vol. 33, No. 7/8, Sept./Nov. 1999.

[46] INFRAS / IWW Karlsruhe "External Costs of Transport", October 2004 update (INFRAS - Zurich /IWW Karlsruhe) ISBN nr 2-7461-0891-7

[47] Kaan Ozbay, Bekir Bartin, and Joseph Berechman, "Paper 6 - Estimation and Evaluation of Full Marginal Costs of Highway Transportation in New Jersey" Journal of Transportation and Statistics Volume 4 Number 1 April 2001 ISSN 1094-8848
http://www.bts.gov/publications/journal_of_transportation_and_statistics/volume_04_number_01/paper_06/html/table10.html

Table D.1-9. Summary Unit Cost Values Used in CVISN BCA

Item	Unit Amount (in 2006 dollars)
Truck crash (total)	$94,051 per incident
Truck VOT (total)	$98.61 per hour
Air and greenhouse gas (in motion)	$12.39 per hour
Air and greenhouse gas (idling)	$0.120 per hour
Noise	$0.00055 per ton-mile

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APPENDIX D.2
TIMES AND COSTS OF TRUCK INSPECTION ACTIVITIES

This Appendix reports the results of research conducted for this BCA on times associated with various aspects of truck inspections that CVISN is expected to avoid or shorten (e.g., inspection times, out of service times, etc.). We also report here our calculated valuations in dollar terms of the value of these time savings.

An October 2007 report for the FMCSA provides time and cost estimates for an average roadside inspection of a commercial motor vehicle. [48] The average roadside inspection time is the average time associated with all types of roadway inspections, which includes Level I through Level V. The study reports a total cost to the motor carrier averaged over all types of roadside inspections is approximately of $49.31 (in 2006 dollars), as shown in Table D.2-1.

Table D.2-1. Comparison of Component Costs by Roadside Inspection Level

	Level I Inspection	Level II Inspection	Level III Inspection	Average Roadside Inspection
Average time per inspection (minutes)	36	30	22	29
Driver labor	$12.65	$10.54	$7.73	$10.19
Carrier administrative staff (fixed fee)	$3.19	$3.19	$3.19	$3.19
Idling cost (opportunity cost)	$44.59	$37.16	$27.25	$35.92
Average Roadside Inspection Cost	**$60.44**	**$50.90**	**$38.17**	**$49.31**

Notes: The average time needed to perform a roadside inspection in 2005 was 29 minutes. Driver labor cost is $21.09 per hour and idling cost is $74.32 per hour.

Source: Federal Motor Carrier Safety Administration, *Roadside Inspection Costs*, October 2007, with additional calculations.

The table shows that the study breaks out costs to motor carriers associated with roadside inspections into three components:

- *Driver labor*, including wages, nonwage benefits such as health insurance and pension contributions, and overhead. The table shows that overall these costs averaged $10.19.
- *Clerical costs* required to maintain safety records, which the study reports as averaging $3.12 per inspection.
- *Idling costs* during an inspection, which was estimated at $35.92 per inspection.

Another FMCSA study published in 2007 examined compliance review costs for commercial vehicles.[49] The study reports that an average onsite compliance review inspection takes 15.9 hours, and costs $385.96 in manager and clerk labor costs, as shown in Table D.2-2.

[48] Federal Motor Carrier Safety Administration *Roadside Inspection Costs*, October 2007.
[49] Econometrica, Inc., *Compliance Review Cost Estimation*, prepared for the Federal Motor Carrier Safety Administration, October 2007.

Table D.2-2. Costs of Compliance Review Inspection

Motor Carrier Costs	Compliance Review Cost (in 2006 dollars)
Manager Labor Cost	$223.67
Clerk Labor Cost	$162.29
Total	**$385.96**

Source: *Compliance Review Cost Estimation*, for the Federal Motor Carrier Safety Administration, October 2007, with additional calculations.

Table D.2-3 shows the average times associated the truck inspection activities, along with two estimates of their associated costs (implied values). The table compares cost values estimated for this study with those reported in the *Roadside Inspection Costs* published by FMCSA in 2007. The values estimated for this study are calculated by multiplying the time associated with each activity by the appropriate value per hour. For example, if 29 minutes is the time associated with a roadside inspection, the value of this benefit is simply the value of time of $98.61 per hour times 29 minutes or $47.66. As the table shows the two estimates of the costs are very close. Our results are slightly more conservative, and we therefore recommend using these values.

Table D.2-3. Times and Estimated Implied Costs of Various Truck Inspection Activities

Activity	Time	Value Estimated for This Study ($2006)	Value Reported in 2007 Roadside Inspection Costs Report ($2006)
Roadside inspection (minutes)	29	$47.66	$49.31
Level I Inspection (minutes)	36	$59.17	$60.44
Level II Inspection (minutes)	30	$49.31	$50.90
Level III Inspection (minutes)	22	$36.16	$38.17
Onsite compliance review (hours)	15.9	NA	$385.96
Roadside size/weight inspection (minutes)	22	$36.16	NA

Notes:

Values Estimated for This Study are derived by multiplying the time savings (or time differential) involved in an activity by the appropriate value per hour.

Roadside Inspection Time is the average time associated with all types of roadway inspections, which includes Level I through Level V.

Level I inspection is North American Standard Inspection. Level II inspection is a walk-around driver/vehicle Inspection. Level III inspection is a driver-only inspection.

Sources:

Times for roadside and Level I, II, and III inspections and Values Reported in 2007 Roadside Inspection Costs Report from Federal Motor Carrier Safety Administration, *Roadside Inspection Costs*, October 2007. Time for onsite compliance review from Federal Motor Carrier Safety Administration, *Compliance Review Cost Estimation,* October 2007. Time for roadside size/weight inspection from ATA Foundation, *Assessment of Intelligent Transportation Systems/Commercial Vehicle Operations (ITS/CVO) User Services Qualitative Benefit/Cost Analysis*, prepared for FHWA, August 1996, p. 18.

A 2005 study by SAIC examined travel time savings at weigh stations that would accrue to motor carriers from the ability to bypass the weigh station's scales.[50] The study examined travel times at six stations, four in Maryland and two in Connecticut. At the Maryland sites time savings were measured by comparing the time required to enter the station and cross the WIM with the time required to stop at the static scale. The results are shown in Table D.2-4, which shows that the time savings ranged from 56 to 109 seconds. The table also shows the implied value of these time savings, computed using value of time for a commercial vehicle of $71.05 per hour reported in the study.

Table D.2-4. Per Event Average Time Savings from Use of WIM Rather than Static Scale

Weigh Station	Time savings (seconds)	Value of Time Savings
Perryville, MD	64	$1.26
Hyattstown, MD	77	$1.52
West Friendship, MD	56	$1.11
New Market, MD	109	$2.15

Source: SAIC, *Electronic Toll Collection/Electronic Screening Interoperability Pilot Test Final Report Synthesis,* prepared for the US DOT, July 29, 2005 FHWA-OP-03.

At the Connecticut sites, time savings were measured by comparing the time required to enter the station and cross the WIM to mainline travel times that obtained for trucks bypassing the weigh station altogether. These results are presented in Table D.2-5, which shows that the time savings averaged 32 seconds at the Union station and 68 seconds at the Greenwich station, with the associated values of these time savings being $0.63 and $1.34, respectively.

Table D.2-5. Per Event Average Time Savings: Mainline Bypass vs. WIM

Weigh Station	Time savings (seconds)	Value of Time Savings
Union, CT	32	$0.63
Greenwich, CT	68	$1.34

Source: SAIC, *Electronic Toll Collection/Electronic Screening Interoperability Pilot Test Final Report Synthesis,* prepared for the US DOT, July 29, 2005 FHWA-OP-03.

The SAIC study also reported mainline travel times (for bypassing the station altogether) for one of the Maryland stations, and time required to stop at the static scales for the two Connecticut stations. These measurements were based on very small samples, but they do at least provide a data point that allows us to impute a time savings for bypassing the static scale at mainline speeds. Table D.2-6 shows the calculation of these values, based on the limited data in the SAIC report.

The table shows that if an E-screening system allowed trucks to bypass the WIM at free-flow mainline speeds, the average time saved based on the data available in the SAIC report would be

[50] Science Applications International Corporation (SAIC), *Electronic Toll Collection/Electronic Screening Interoperability Pilot Test Final Report Synthesis*, July 29, 2005 FHWA-OP-03.

50 seconds (or 0.84 minutes). The table also shows that based on the available data, the average time savings of the WIM compared to the static scale would be 145 seconds. Adding these values together produces an estimate of the time savings of bypassing at mainline speed rather than stopping at the static scale of 196 seconds (or 3.26 minutes).

Table D.2-6. Per Event Time Savings from Bypass of Weigh Station at Mainline Speed

Weigh Station	Time (seconds)			Time Saved (seconds)		
	Mainline	WIM	Static Scale	Mainline relative to WIM	WIM relative to static scale	Mainline relative to static scale
Perryville, MD	44	70	145	26	75	101
Hyattstown, MD	N/A	50	135	N/A	85	N/A
West Friendship, MD	N/A	31	130	N/A	99	N/A
New Market, MD	N/A	86	194	N/A	108	N/A
Union, CT	42	76	233	34	157	191
Greenwich, CT	22	113	461	91	348	439
Average				50	145	196

Note: average time saved for mainline relative to static scale is sum of time saved mainline relative to WIM and time saved WIM relative to static scale.

Source: SAIC, *Electronic Toll Collection/Electronic Screening Interoperability Pilot Test Final Report Synthesis, Attachment 1: Appendices - Electronic Toll Collection/Electronic Screening Interoperability Pilot Test Supplement to the Final Report,* prepared for the US DOT, July 29, 2005 FHWA-OP-03, with additional calculations.

A 1998 study examining the CVISN deployment in Maryland reports average delays for commercial vehicles and drivers placed out-of-service as a result of inspections.[51] As in the previous CVISN BCA for the MDI evaluation, we have adopted these values for this study. A summary of the time values used in the current BCA is provided in Table D.2-7.

Table D.2-7. Summary of Time Factors Used in BCA Calculations

Factor (Item)	Time
Time savings per station bypassed (mainline vs. static)	3.26 min
Time savings per station bypassed (mainline vs. WIM)	0.84 min
Vehicle Out-of-Service time (hours)	1.5 hours
Driver Out-of-Service time (hours)	4 hours

Sources: time savings per station bypassed from Table A.8. Vehicle out-of-service and driver out-of-service times from Bapna, et. al., *Benefit-Cost Assessment of the Commercial Vehicle Information Systems and Networks (CVISN) in Maryland*, November 1998.

Table D.2-8 summarizes the respective dollar valuations used in this BCA in the calculation of time savings benefits and costs to motor carriers of vehicles and drivers being placed out of

[51] Bapna, Sanjay, Jigish Zaveri, Z. Andrew Farkas (Morgan State University), *Benefit-Cost Assessment of the Commercial Vehicle Information Systems and Networks (CVISN) in Maryland*, November 1998, p.60.

service. The figures in the table are computed using the values in Table D.2-7 and monetizing them according to the factors in Table D.1-9.

Table D.2-8. Summary of Dollar Valuations of Time Factors used in BCA Calculations

Factor (Item) [a]	Value ($2006)
Time savings per station bypassed (mainline vs. static)	$5.36
Total cost savings including time, air, and noise, per station bypassed (mainline vs. static)	$5.72
Time savings per station bypassed (mainline vs. WIM)	$1.38
Total cost savings including time, air, and noise per station bypassed (mainline vs. WIM)	$1.55
Vehicle Out-of-Service time (hours)	$147.87
Driver Out-of-Service time (hours)	$394.32

The values of total cost savings including air pollution and noise are calculated using the factors for air pollution and noise in Table D.1-9, and adding the result to the value of the time savings. The calculation of air pollution uses the in motion factor in Table D.1-9 for the case of mainline vs. WIM, and the average of the in motion and idling factors in Table D.1-9 for the case of mainline vs. static.

The calculation of the value of noise pollution savings is based on the principle that, other things being equal, if a truck is on the road for less time, it will generate less noise. It is therefore based on the time savings associated with the bypassing of stations, as described above. The dollars per ton-mile factor in Table D.1-9 is first converted to dollars per hour using the assumption that a truck travels at an average of 50 mph and carries 14.80 tons, based on the ATA data cited in a 1999 study.[52] The resulting dollars per hour factor is then multiplied by the estimated time savings to arrive at a dollar value of noise avoided.

[52] Forkenbrock, David J., "External Costs of Intercity Truck Freight Transportation", *Transportation Research Part A*, 1999.

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APPENDIX D.3
TOTAL BENEFITS AND COSTS BY STATE

Table D.3-1. Total Benefits and Costs by State, Discounted at 7% ($2006)
Roadside Enforcement Scenario RE-2

State	Benefits	Costs
Alabama	N/A	$4,660,213
Alaska	N/A	$19,447,792
Arizona	N/A	$43,309,149
Arkansas	N/A	$27,732,059
California	N/A	$106,981,645
Colorado	N/A	$32,170,220
Connecticut	N/A	$19,845,807
Delaware	N/A	$4,660,213
District of Columbia	N/A	$2,805,157
Florida	N/A	$57,513,550
Georgia	N/A	$41,761,332
Hawaii	N/A	$2,805,157
Idaho	N/A	$30,129,411
Illinois	N/A	$58,456,835
Indiana	N/A	$21,355,716
Iowa	N/A	$30,630,996
Kansas	N/A	$19,500,660
Kentucky	N/A	$34,341,108
Louisiana	N/A	$41,761,332
Maine	N/A	$41,761,332
Maryland	N/A	$34,545,154
Massachusetts	N/A	$36,196,164
Michigan	N/A	$30,630,996
Minnesota	N/A	$16,287,609
Mississippi	N/A	$67,732,115
Missouri	N/A	$43,618,582
Montana	N/A	$68,646,185
Nebraska	N/A	$27,031,866
Nevada	N/A	$13,935,492
New Hampshire	N/A	$12,080,437
New Jersey	N/A	$31,015,558
New Mexico	N/A	$33,644,422
New York	N/A	$37,590,199
North Carolina	N/A	$39,906,276
North Dakota	N/A	$21,339,745
Ohio	N/A	$38,051,220
Oklahoma	N/A	$19,439,915
Oregon	N/A	$104,817,589
Pennsylvania	N/A	$6,515,269
Puerto Rico	N/A	$2,805,157
Rhode Island	N/A	$19,500,660
South Carolina	N/A	$17,131,216
South Dakota	N/A	$65,266,521
Tennessee	N/A	$20,170,058
Texas	N/A	$93,702,898
Utah	N/A	$28,003,584
Vermont	N/A	$6,515,269
Virginia	N/A	$45,110,801
Washington	N/A	$90,323,194
West Virginia	N/A	$15,790,548
Wisconsin	N/A	$32,117,563
Wyoming	N/A	$62,131,271
Non-state specific	$8,906,875,937	$2,287,434,445
Total	$8,906,875,937	$4,110,657,662

Table D.3-2. Total Benefits and Costs by State, Discounted at 7% ($2006)
Roadside Enforcement Scenario RE-3A

State	Benefits	Costs
Alabama	N/A	$4,660,213
Alaska	N/A	$19,447,792
Arizona	N/A	$43,309,149
Arkansas	N/A	$27,732,059
California	N/A	$106,981,645
Colorado	N/A	$32,170,220
Connecticut	N/A	$19,845,807
Delaware	N/A	$4,660,213
District of Columbia	N/A	$2,805,157
Florida	N/A	$57,513,550
Georgia	N/A	$41,761,332
Hawaii	N/A	$2,805,157
Idaho	N/A	$30,129,411
Illinois	N/A	$58,456,835
Indiana	N/A	$21,355,716
Iowa	N/A	$30,630,996
Kansas	N/A	$19,500,660
Kentucky	N/A	$34,341,108
Louisiana	N/A	$41,761,332
Maine	N/A	$41,761,332
Maryland	N/A	$34,545,154
Massachusetts	N/A	$36,196,164
Michigan	N/A	$30,630,996
Minnesota	N/A	$16,287,609
Mississippi	N/A	$67,732,115
Missouri	N/A	$43,618,582
Montana	N/A	$68,646,185
Nebraska	N/A	$27,031,866
Nevada	N/A	$13,935,492
New Hampshire	N/A	$12,080,437
New Jersey	N/A	$31,015,558
New Mexico	N/A	$33,644,422
New York	N/A	$37,590,199
North Carolina	N/A	$39,906,276
North Dakota	N/A	$21,339,745
Ohio	N/A	$38,051,220
Oklahoma	N/A	$19,439,915
Oregon	N/A	$104,817,589
Pennsylvania	N/A	$6,515,269
Puerto Rico	N/A	$2,805,157
Rhode Island	N/A	$19,500,660
South Carolina	N/A	$17,131,216
South Dakota	N/A	$65,266,521
Tennessee	N/A	$20,170,058
Texas	N/A	$93,702,898
Utah	N/A	$28,003,584
Vermont	N/A	$6,515,269
Virginia	N/A	$45,110,801
Washington	N/A	$90,323,194
West Virginia	N/A	$15,790,548
Wisconsin	N/A	$32,117,563
Wyoming	N/A	$62,131,271
Non-state specific	$14,422,099,019	$5,015,699,002
Total	$14,422,099,019	$6,838,922,219

Table D.3-3. Total Benefits and Costs by State, Discounted at 7% ($2006)
Roadside Enforcement Scenario RE-3B

State	Benefits	Costs
Alabama	N/A	$4,660,213
Alaska	N/A	$19,447,792
Arizona	N/A	$43,309,149
Arkansas	N/A	$27,732,059
California	N/A	$106,981,645
Colorado	N/A	$32,170,220
Connecticut	N/A	$19,845,807
Delaware	N/A	$4,660,213
District of Columbia	N/A	$2,805,157
Florida	N/A	$57,513,550
Georgia	N/A	$41,761,332
Hawaii	N/A	$2,805,157
Idaho	N/A	$30,129,411
Illinois	N/A	$58,456,835
Indiana	N/A	$21,355,716
Iowa	N/A	$30,630,996
Kansas	N/A	$19,500,660
Kentucky	N/A	$34,341,108
Louisiana	N/A	$41,761,332
Maine	N/A	$41,761,332
Maryland	N/A	$34,545,154
Massachusetts	N/A	$36,196,164
Michigan	N/A	$30,630,996
Minnesota	N/A	$16,287,609
Mississippi	N/A	$67,732,115
Missouri	N/A	$43,618,582
Montana	N/A	$68,646,185
Nebraska	N/A	$27,031,866
Nevada	N/A	$13,935,492
New Hampshire	N/A	$12,080,437
New Jersey	N/A	$31,015,558
New Mexico	N/A	$33,644,422
New York	N/A	$37,590,199
North Carolina	N/A	$39,906,276
North Dakota	N/A	$21,339,745
Ohio	N/A	$38,051,220
Oklahoma	N/A	$19,439,915
Oregon	N/A	$104,817,589
Pennsylvania	N/A	$6,515,269
Puerto Rico	N/A	$2,805,157
Rhode Island	N/A	$19,500,660
South Carolina	N/A	$17,131,216
South Dakota	N/A	$65,266,521
Tennessee	N/A	$20,170,058
Texas	N/A	$93,702,898
Utah	N/A	$28,003,584
Vermont	N/A	$6,515,269
Virginia	N/A	$45,110,801
Washington	N/A	$90,323,194
West Virginia	N/A	$15,790,548
Wisconsin	N/A	$32,117,563
Wyoming	N/A	$62,131,271
Non-state specific	$11,715,250,483	$3,951,485,921
Total	$11,715,250,483	$5,774,709,138

Table D.3-4. Total Benefits and Costs by State, Discounted at 7% ($2006)
Roadside Enforcement Scenario RE-3C

State	Benefits	Costs
Alabama	N/A	$4,660,213
Alaska	N/A	$19,447,792
Arizona	N/A	$43,309,149
Arkansas	N/A	$27,732,059
California	N/A	$106,981,645
Colorado	N/A	$32,170,220
Connecticut	N/A	$19,845,807
Delaware	N/A	$4,660,213
District of Columbia	N/A	$2,805,157
Florida	N/A	$57,513,550
Georgia	N/A	$41,761,332
Hawaii	N/A	$2,805,157
Idaho	N/A	$30,129,411
Illinois	N/A	$58,456,835
Indiana	N/A	$21,355,716
Iowa	N/A	$30,630,996
Kansas	N/A	$19,500,660
Kentucky	N/A	$34,341,108
Louisiana	N/A	$41,761,332
Maine	N/A	$41,761,332
Maryland	N/A	$34,545,154
Massachusetts	N/A	$36,196,164
Michigan	N/A	$30,630,996
Minnesota	N/A	$16,287,609
Mississippi	N/A	$67,732,115
Missouri	N/A	$43,618,582
Montana	N/A	$68,646,185
Nebraska	N/A	$27,031,866
Nevada	N/A	$13,935,492
New Hampshire	N/A	$12,080,437
New Jersey	N/A	$31,015,558
New Mexico	N/A	$33,644,422
New York	N/A	$37,590,199
North Carolina	N/A	$39,906,276
North Dakota	N/A	$21,339,745
Ohio	N/A	$38,051,220
Oklahoma	N/A	$19,439,915
Oregon	N/A	$104,817,589
Pennsylvania	N/A	$6,515,269
Puerto Rico	N/A	$2,805,157
Rhode Island	N/A	$19,500,660
South Carolina	N/A	$17,131,216
South Dakota	N/A	$65,266,521
Tennessee	N/A	$20,170,058
Texas	N/A	$93,702,898
Utah	N/A	$28,003,584
Vermont	N/A	$6,515,269
Virginia	N/A	$45,110,801
Washington	N/A	$90,323,194
West Virginia	N/A	$15,790,548
Wisconsin	N/A	$32,117,563
Wyoming	N/A	$62,131,271
Non-state specific	$8,899,068,198	$2,802,878,310
Total	$8,899,068,198	$4,626,101,527

Table D.3-5. Total Benefits and Costs by State, Discounted at 7% ($2006)
Roadside Enforcement Scenario RE-4A

State	Benefits	Costs
Alabama	N/A	$4,660,213
Alaska	N/A	$19,447,792
Arizona	N/A	$43,309,149
Arkansas	N/A	$27,732,059
California	N/A	$106,981,645
Colorado	N/A	$32,170,220
Connecticut	N/A	$19,845,807
Delaware	N/A	$4,660,213
District of Columbia	N/A	$2,805,157
Florida	N/A	$57,513,550
Georgia	N/A	$41,761,332
Hawaii	N/A	$2,805,157
Idaho	N/A	$30,129,411
Illinois	N/A	$58,456,835
Indiana	N/A	$21,355,716
Iowa	N/A	$30,630,996
Kansas	N/A	$19,500,660
Kentucky	N/A	$34,341,108
Louisiana	N/A	$41,761,332
Maine	N/A	$41,761,332
Maryland	N/A	$34,545,154
Massachusetts	N/A	$36,196,164
Michigan	N/A	$30,630,996
Minnesota	N/A	$16,287,609
Mississippi	N/A	$67,732,115
Missouri	N/A	$43,618,582
Montana	N/A	$68,646,185
Nebraska	N/A	$27,031,866
Nevada	N/A	$13,935,492
New Hampshire	N/A	$12,080,437
New Jersey	N/A	$31,015,558
New Mexico	N/A	$33,644,422
New York	N/A	$37,590,199
North Carolina	N/A	$39,906,276
North Dakota	N/A	$21,339,745
Ohio	N/A	$38,051,220
Oklahoma	N/A	$19,439,915
Oregon	N/A	$104,817,589
Pennsylvania	N/A	$6,515,269
Puerto Rico	N/A	$2,805,157
Rhode Island	N/A	$19,500,660
South Carolina	N/A	$17,131,216
South Dakota	N/A	$65,266,521
Tennessee	N/A	$20,170,058
Texas	N/A	$93,702,898
Utah	N/A	$28,003,584
Vermont	N/A	$6,515,269
Virginia	N/A	$45,110,801
Washington	N/A	$90,323,194
West Virginia	N/A	$15,790,548
Wisconsin	N/A	$32,117,563
Wyoming	N/A	$62,131,271
Non-state specific	$23,493,346,042	$3,721,737,892
Total	$23,493,346,042	$5,544,961,109

Table D.3-6. Total Benefits and Costs by State, Discounted at 7% ($2006)
Roadside Enforcement Scenario RE-4B

State	Benefits	Costs
Alabama	N/A	$4,660,213
Alaska	N/A	$19,447,792
Arizona	N/A	$43,309,149
Arkansas	N/A	$27,732,059
California	N/A	$106,981,645
Colorado	N/A	$32,170,220
Connecticut	N/A	$19,845,807
Delaware	N/A	$4,660,213
District of Columbia	N/A	$2,805,157
Florida	N/A	$57,513,550
Georgia	N/A	$41,761,332
Hawaii	N/A	$2,805,157
Idaho	N/A	$30,129,411
Illinois	N/A	$58,456,835
Indiana	N/A	$21,355,716
Iowa	N/A	$30,630,996
Kansas	N/A	$19,500,660
Kentucky	N/A	$34,341,108
Louisiana	N/A	$41,761,332
Maine	N/A	$41,761,332
Maryland	N/A	$34,545,154
Massachusetts	N/A	$36,196,164
Michigan	N/A	$30,630,996
Minnesota	N/A	$16,287,609
Mississippi	N/A	$67,732,115
Missouri	N/A	$43,618,582
Montana	N/A	$68,646,185
Nebraska	N/A	$27,031,866
Nevada	N/A	$13,935,492
New Hampshire	N/A	$12,080,437
New Jersey	N/A	$31,015,558
New Mexico	N/A	$33,644,422
New York	N/A	$37,590,199
North Carolina	N/A	$39,906,276
North Dakota	N/A	$21,339,745
Ohio	N/A	$38,051,220
Oklahoma	N/A	$19,439,915
Oregon	N/A	$104,817,589
Pennsylvania	N/A	$6,515,269
Puerto Rico	N/A	$2,805,157
Rhode Island	N/A	$19,500,660
South Carolina	N/A	$17,131,216
South Dakota	N/A	$65,266,521
Tennessee	N/A	$20,170,058
Texas	N/A	$93,702,898
Utah	N/A	$28,003,584
Vermont	N/A	$6,515,269
Virginia	N/A	$45,110,801
Washington	N/A	$90,323,194
West Virginia	N/A	$15,790,548
Wisconsin	N/A	$32,117,563
Wyoming	N/A	$62,131,271
Non-state specific	$18,649,740,936	$2,981,015,089
Total	$18,649,740,936	$4,804,238,306

Table D.3-7. Total Benefits and Costs by State, Discounted at 7% ($2006)
Roadside Enforcement Scenario RE-4C

State	Benefits	Costs
Alabama	N/A	$4,660,213
Alaska	N/A	$19,447,792
Arizona	N/A	$43,309,149
Arkansas	N/A	$27,732,059
California	N/A	$106,981,645
Colorado	N/A	$32,170,220
Connecticut	N/A	$19,845,807
Delaware	N/A	$4,660,213
District of Columbia	N/A	$2,805,157
Florida	N/A	$57,513,550
Georgia	N/A	$41,761,332
Hawaii	N/A	$2,805,157
Idaho	N/A	$30,129,411
Illinois	N/A	$58,456,835
Indiana	N/A	$21,355,716
Iowa	N/A	$30,630,996
Kansas	N/A	$19,500,660
Kentucky	N/A	$34,341,108
Louisiana	N/A	$41,761,332
Maine	N/A	$41,761,332
Maryland	N/A	$34,545,154
Massachusetts	N/A	$36,196,164
Michigan	N/A	$30,630,996
Minnesota	N/A	$16,287,609
Mississippi	N/A	$67,732,115
Missouri	N/A	$43,618,582
Montana	N/A	$68,646,185
Nebraska	N/A	$27,031,866
Nevada	N/A	$13,935,492
New Hampshire	N/A	$12,080,437
New Jersey	N/A	$31,015,558
New Mexico	N/A	$33,644,422
New York	N/A	$37,590,199
North Carolina	N/A	$39,906,276
North Dakota	N/A	$21,339,745
Ohio	N/A	$38,051,220
Oklahoma	N/A	$19,439,915
Oregon	N/A	$104,817,589
Pennsylvania	N/A	$6,515,269
Puerto Rico	N/A	$2,805,157
Rhode Island	N/A	$19,500,660
South Carolina	N/A	$17,131,216
South Dakota	N/A	$65,266,521
Tennessee	N/A	$20,170,058
Texas	N/A	$93,702,898
Utah	N/A	$28,003,584
Vermont	N/A	$6,515,269
Virginia	N/A	$45,110,801
Washington	N/A	$90,323,194
West Virginia	N/A	$15,790,548
Wisconsin	N/A	$32,117,563
Wyoming	N/A	$62,131,271
Non-state specific	$13,519,716,327	$2,335,614,576
Total	$13,519,716,327	$4,158,837,793

Table D.3-8. Total Benefits and Costs by State, Discounted at 7% ($2006)
Roadside Enforcement Scenario RE-5A

State	Benefits	Costs
Alabama	N/A	$4,847,682
Alaska	N/A	$20,947,547
Arizona	N/A	$47,433,474
Arkansas	N/A	$29,981,691
California	N/A	$117,104,989
Colorado	N/A	$35,169,730
Connecticut	N/A	$20,783,154
Delaware	N/A	$4,847,682
District of Columbia	N/A	$2,805,157
Florida	N/A	$62,950,161
Georgia	N/A	$45,698,188
Hawaii	N/A	$2,805,157
Idaho	N/A	$33,691,328
Illinois	N/A	$64,080,915
Indiana	N/A	$23,230,410
Iowa	N/A	$33,443,036
Kansas	N/A	$21,187,884
Kentucky	N/A	$37,528,087
Louisiana	N/A	$45,698,188
Maine	N/A	$45,698,188
Maryland	N/A	$37,732,133
Massachusetts	N/A	$39,570,612
Michigan	N/A	$33,443,036
Minnesota	N/A	$17,599,894
Mississippi	N/A	$74,293,542
Missouri	N/A	$47,742,907
Montana	N/A	$74,270,265
Nebraska	N/A	$29,468,967
Nevada	N/A	$15,060,308
New Hampshire	N/A	$13,017,783
New Jersey	N/A	$34,390,006
New Mexico	N/A	$35,706,585
New York	N/A	$40,964,647
North Carolina	N/A	$43,655,662
North Dakota	N/A	$23,401,907
Ohio	N/A	$41,613,137
Oklahoma	N/A	$21,127,139
Oregon	N/A	$115,128,402
Pennsylvania	N/A	$6,890,207
Puerto Rico	N/A	$2,805,157
Rhode Island	N/A	$21,187,884
South Carolina	N/A	$18,818,440
South Dakota	N/A	$67,703,623
Tennessee	N/A	$21,857,282
Texas	N/A	$102,888,896
Utah	N/A	$29,690,808
Vermont	N/A	$6,890,207
Virginia	N/A	$49,422,595
Washington	N/A	$100,071,600
West Virginia	N/A	$17,102,834
Wisconsin	N/A	$34,554,665
Wyoming	N/A	$67,567,882
Non-state specific	$26,617,363,372	$1,621,479,976
Total	$26,617,363,372	$3,607,051,636

Table D.3-9. Total Benefits and Costs by State, Discounted at 7% ($2006)
Roadside Enforcement Scenario RE-5B

State	Benefits	Costs
Alabama	N/A	$4,847,682
Alaska	N/A	$20,947,547
Arizona	N/A	$47,433,474
Arkansas	N/A	$29,981,691
California	N/A	$117,104,989
Colorado	N/A	$35,169,730
Connecticut	N/A	$20,783,154
Delaware	N/A	$4,847,682
District of Columbia	N/A	$2,805,157
Florida	N/A	$62,950,161
Georgia	N/A	$45,698,188
Hawaii	N/A	$2,805,157
Idaho	N/A	$33,691,328
Illinois	N/A	$64,080,915
Indiana	N/A	$23,230,410
Iowa	N/A	$33,443,036
Kansas	N/A	$21,187,884
Kentucky	N/A	$37,528,087
Louisiana	N/A	$45,698,188
Maine	N/A	$45,698,188
Maryland	N/A	$37,732,133
Massachusetts	N/A	$39,570,612
Michigan	N/A	$33,443,036
Minnesota	N/A	$17,599,894
Mississippi	N/A	$74,293,542
Missouri	N/A	$47,742,907
Montana	N/A	$74,270,265
Nebraska	N/A	$29,468,967
Nevada	N/A	$15,060,308
New Hampshire	N/A	$13,017,783
New Jersey	N/A	$34,390,006
New Mexico	N/A	$35,706,585
New York	N/A	$40,964,647
North Carolina	N/A	$43,655,662
North Dakota	N/A	$23,401,907
Ohio	N/A	$41,613,137
Oklahoma	N/A	$21,127,139
Oregon	N/A	$115,128,402
Pennsylvania	N/A	$6,890,207
Puerto Rico	N/A	$2,805,157
Rhode Island	N/A	$21,187,884
South Carolina	N/A	$18,818,440
South Dakota	N/A	$67,703,623
Tennessee	N/A	$21,857,282
Texas	N/A	$102,888,896
Utah	N/A	$29,690,808
Vermont	N/A	$6,890,207
Virginia	N/A	$49,422,595
Washington	N/A	$100,071,600
West Virginia	N/A	$17,102,834
Wisconsin	N/A	$34,554,665
Wyoming	N/A	$67,567,882
Non-state specific	$23,074,475,556	$1,096,417,358
Total	$23,074,475,556	$3,081,989,018

Table D.3-10. Total Benefits and Costs by State, Discounted at 7% ($2006)
Roadside Enforcement Scenario RE-5C

State	Benefits	Costs
Alabama	N/A	$4,847,682
Alaska	N/A	$20,947,547
Arizona	N/A	$47,433,474
Arkansas	N/A	$29,981,691
California	N/A	$117,104,989
Colorado	N/A	$35,169,730
Connecticut	N/A	$20,783,154
Delaware	N/A	$4,847,682
District of Columbia	N/A	$2,805,157
Florida	N/A	$62,950,161
Georgia	N/A	$45,698,188
Hawaii	N/A	$2,805,157
Idaho	N/A	$33,691,328
Illinois	N/A	$64,080,915
Indiana	N/A	$23,230,410
Iowa	N/A	$33,443,036
Kansas	N/A	$21,187,884
Kentucky	N/A	$37,528,087
Louisiana	N/A	$45,698,188
Maine	N/A	$45,698,188
Maryland	N/A	$37,732,133
Massachusetts	N/A	$39,570,612
Michigan	N/A	$33,443,036
Minnesota	N/A	$17,599,894
Mississippi	N/A	$74,293,542
Missouri	N/A	$47,742,907
Montana	N/A	$74,270,265
Nebraska	N/A	$29,468,967
Nevada	N/A	$15,060,308
New Hampshire	N/A	$13,017,783
New Jersey	N/A	$34,390,006
New Mexico	N/A	$35,706,585
New York	N/A	$40,964,647
North Carolina	N/A	$43,655,662
North Dakota	N/A	$23,401,907
Ohio	N/A	$41,613,137
Oklahoma	N/A	$21,127,139
Oregon	N/A	$115,128,402
Pennsylvania	N/A	$6,890,207
Puerto Rico	N/A	$2,805,157
Rhode Island	N/A	$21,187,884
South Carolina	N/A	$18,818,440
South Dakota	N/A	$67,703,623
Tennessee	N/A	$21,857,282
Texas	N/A	$102,888,896
Utah	N/A	$29,690,808
Vermont	N/A	$6,890,207
Virginia	N/A	$49,422,595
Washington	N/A	$100,071,600
West Virginia	N/A	$17,102,834
Wisconsin	N/A	$34,554,665
Wyoming	N/A	$67,567,882
Non-state specific	$19,956,124,446	$702,620,394
Total	$19,956,124,446	$2,688,192,054

Table D.3-11. Total Benefits and Costs by State, Discounted at 7% ($2006)
Electronic Credentialing

State	Benefits	Costs
Alabama	$119,075,210	$94,219,764
Alaska	$21,367,375	$9,287,921
Arizona	$200,164,997	$33,184,351
Arkansas	$120,329,194	$31,823,059
California	$502,835,037	$138,966,167
Colorado	$167,152,635	$69,193,846
Connecticut	$83,190,166	$50,217,108
Delaware	$64,240,472	$12,667,035
District of Columbia	$39,205,003	$3,554,451
Florida	$361,114,871	$178,095,466
Georgia	$312,440,692	$168,854,768
Hawaii	$40,152,986	$3,008,186
Idaho	$155,854,112	$25,208,878
Illinois	$275,108,202	$104,968,694
Indiana	$263,887,445	$118,978,067
Iowa	$122,625,708	$57,399,535
Kansas	$107,479,079	$39,527,112
Kentucky	$130,823,450	$84,386,992
Louisiana	$83,250,632	$39,098,429
Maine	$43,468,943	$32,396,270
Maryland	$138,047,020	$78,269,137
Massachusetts	$172,571,058	$54,320,363
Michigan	$190,785,150	$90,707,010
Minnesota	$273,311,867	$150,034,056
Mississippi	$78,249,903	$33,731,312
Missouri	$169,734,555	$61,857,675
Montana	$42,541,069	$20,117,504
Nebraska	$89,749,577	$56,549,517
Nevada	$63,858,125	$14,981,926
New Hampshire	$56,149,400	$23,570,291
New Jersey	$327,784,019	$87,222,483
New Mexico	$124,350,064	$22,030,166
New York	$464,193,487	$177,883,768
North Carolina	$193,295,341	$77,150,816
North Dakota	$27,654,467	$16,990,537
Ohio	$186,022,710	$90,525,065
Oklahoma	$121,073,971	$47,698,435
Oregon	$297,285,186	$49,509,311
Pennsylvania	$273,374,520	$114,002,890
Puerto Rico	$39,035,753	$3,706,328
Rhode Island	$48,678,365	$16,544,783
South Carolina	$87,942,527	$42,891,981
South Dakota	$63,509,882	$18,697,655
Tennessee	$226,254,718	$71,589,579
Texas	$447,336,601	$101,135,040
Utah	$105,810,708	$39,381,526
Vermont	$45,317,416	$10,817,573
Virginia	$101,584,875	$56,786,438
Washington	$162,017,245	$40,106,572
West Virginia	$148,816,876	$35,730,202
Wisconsin	$185,851,252	$102,045,446
Wyoming	$54,267,228	$15,208,003
Total	$8,220,221,144	$3,116,829,485

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APPENDIX D.4
YEARLY BENEFITS AND COSTS BY CATEGORY

Table D.4-1. Crashes Avoided ($2006)
Roadside Enforcement Scenario RE-2

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$94,427,204	$94,427,204	$94,427,204
2007	$94,427,204	$90,795,388	$88,249,723
2008	$94,427,204	$87,303,258	$82,476,377
2009	$94,427,204	$83,945,441	$77,080,726
2010	$94,427,204	$80,716,770	$72,038,062
2011	$94,427,204	$77,612,279	$67,325,291
2012	$94,427,204	$74,627,191	$62,920,833
2013	$94,427,204	$71,756,914	$58,804,517
2014	$94,427,204	$68,997,033	$54,957,492
2015	$94,427,204	$66,343,301	$51,362,142
2016	$94,427,204	$63,791,636	$48,002,002
2017	$94,427,204	$61,338,111	$44,861,684
2018	$94,427,204	$58,978,953	$41,926,808
2019	$94,427,204	$56,710,532	$39,183,933
2020	$94,427,204	$54,529,357	$36,620,498
2021	$94,427,204	$52,432,074	$34,224,764
2022	$94,427,204	$50,415,456	$31,985,761
2023	$94,427,204	$48,476,400	$29,893,235
2024	$94,427,204	$46,611,923	$27,937,602
2025	$94,427,204	$44,819,157	$26,109,909
2026	$94,427,204	$43,095,343	$24,401,784
2027	$94,427,204	$41,437,830	$22,805,406
2028	$94,427,204	$39,844,067	$21,313,463
2029	$94,427,204	$38,311,603	$19,919,124
2030	$94,427,204	$36,838,080	$18,616,004
Total	$2,360,680,100	$1,534,155,303	$1,177,444,345

Table D.4-2. Transit Time Savings (including O&M and air and noise pollution) ($2006)
Roadside Enforcement Scenario RE-2

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$619,875,255	$619,875,255	$619,875,255
2007	$619,875,255	$596,033,899	$579,322,668
2008	$619,875,255	$573,109,518	$541,423,054
2009	$619,875,255	$551,066,844	$506,002,854
2010	$619,875,255	$529,871,966	$472,899,864
2011	$619,875,255	$509,492,275	$441,962,490
2012	$619,875,255	$489,896,418	$413,049,056
2013	$619,875,255	$471,054,248	$386,027,155
2014	$619,875,255	$452,936,777	$360,773,042
2015	$619,875,255	$435,516,132	$337,171,067
2016	$619,875,255	$418,765,511	$315,113,147
2017	$619,875,255	$402,659,145	$294,498,268
2018	$619,875,255	$387,172,255	$275,232,026
2019	$619,875,255	$372,281,015	$257,226,193
2020	$619,875,255	$357,962,514	$240,398,311
2021	$619,875,255	$344,194,725	$224,671,319
2022	$619,875,255	$330,956,466	$209,973,195
2023	$619,875,255	$318,227,372	$196,236,631
2024	$619,875,255	$305,987,857	$183,398,721
2025	$619,875,255	$294,219,094	$171,400,673
2026	$619,875,255	$282,902,975	$160,187,545
2027	$619,875,255	$272,022,091	$149,707,986
2028	$619,875,255	$261,559,703	$139,914,006
2029	$619,875,255	$251,499,714	$130,760,753
2030	$619,875,255	$241,826,648	$122,206,311
Total	$15,496,881,371	$10,071,090,417	$7,729,431,591

Table D.4-3. One-time Start-up Cost to States ($2006)
Roadside Enforcement Scenario RE-2

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$543,368,309	$543,368,309	$543,368,309
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$0	$0	$0
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$0	$0	$0
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$0	$0	$0
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$0	$0	$0
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$543,368,309	$543,368,309	$543,368,309

Table D.4-4. Replacement Capital Costs to States ($2006)
Roadside Enforcement Scenario RE-2

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$0	$0	$0
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$47,643,237	$39,159,268	$33,968,970
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$520,311,665	$351,503,918	$264,500,067
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$47,643,237	$26,454,598	$17,268,102
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$520,311,665	$237,463,452	$134,458,422
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$1,135,909,804	$654,581,236	$450,195,560

Table D.4-5. Increased Operating Costs to States ($2006)
Roadside Enforcement Scenario RE-2

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$66,535,979	$66,535,979	$66,535,979
2007	$66,535,979	$63,976,903	$62,183,158
2008	$66,535,979	$61,516,253	$58,115,101
2009	$66,535,979	$59,150,243	$54,313,179
2010	$66,535,979	$56,875,234	$50,759,980
2011	$66,535,979	$54,687,725	$47,439,234
2012	$66,535,979	$52,584,351	$44,335,732
2013	$66,535,979	$50,561,876	$41,435,264
2014	$66,535,979	$48,617,188	$38,724,546
2015	$66,535,979	$46,747,296	$36,191,164
2016	$66,535,979	$44,949,324	$33,823,518
2017	$66,535,979	$43,220,503	$31,610,764
2018	$66,535,979	$41,558,176	$29,542,770
2019	$66,535,979	$39,959,785	$27,610,066
2020	$66,535,979	$38,422,870	$25,803,800
2021	$66,535,979	$36,945,067	$24,115,701
2022	$66,535,979	$35,524,103	$22,538,038
2023	$66,535,979	$34,157,792	$21,063,587
2024	$66,535,979	$32,844,030	$19,685,595
2025	$66,535,979	$31,580,798	$18,397,753
2026	$66,535,979	$30,366,152	$17,194,161
2027	$66,535,979	$29,198,223	$16,069,310
2028	$66,535,979	$28,075,215	$15,018,046
2029	$66,535,979	$26,995,399	$14,035,557
2030	$66,535,979	$25,957,114	$13,117,343
Total	$1,663,399,481	$1,081,007,602	$829,659,348

Table D.4-6. Increased Operating Costs to Carriers ($2006)
Roadside Enforcement Scenario RE-2

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$298,489,666	$298,489,666	$298,489,666
2007	$123,709,422	$118,951,367	$115,616,282
2008	$123,709,422	$114,376,314	$108,052,600
2009	$123,709,422	$109,977,225	$100,983,738
2010	$123,709,422	$105,747,332	$94,377,325
2011	$123,709,422	$101,680,127	$88,203,108
2012	$123,709,422	$97,769,353	$82,432,811
2013	$123,709,422	$94,008,993	$77,040,010
2014	$123,709,422	$90,393,263	$72,000,010
2015	$123,709,422	$86,916,599	$67,289,729
2016	$123,709,422	$83,573,653	$62,887,597
2017	$123,709,422	$80,359,281	$58,773,455
2018	$123,709,422	$77,268,540	$54,928,463
2019	$123,709,422	$74,296,673	$51,335,012
2020	$123,709,422	$71,439,109	$47,976,647
2021	$123,709,422	$68,691,450	$44,837,987
2022	$123,709,422	$66,049,472	$41,904,661
2023	$123,709,422	$63,509,107	$39,163,235
2024	$123,709,422	$61,066,449	$36,601,154
2025	$123,709,422	$58,717,740	$34,206,686
2026	$123,709,422	$56,459,365	$31,968,865
2027	$123,709,422	$54,287,851	$29,877,444
2028	$123,709,422	$52,199,857	$27,922,845
2029	$123,709,422	$50,192,170	$26,096,117
2030	$123,709,422	$48,261,702	$24,388,894
Total	$3,267,515,786	$2,184,682,658	$1,717,354,342

Table D.4-7. Increased OOS Costs to Carriers ($2006)
Roadside Enforcement Scenario RE-2

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$45,718,569	$45,718,569	$45,718,569
2007	$45,718,569	$43,960,162	$42,727,634
2008	$45,718,569	$42,269,387	$39,932,368
2009	$45,718,569	$40,643,641	$37,319,971
2010	$45,718,569	$39,080,424	$34,878,477
2011	$45,718,569	$37,577,331	$32,596,708
2012	$45,718,569	$36,132,049	$30,464,213
2013	$45,718,569	$34,742,355	$28,471,227
2014	$45,718,569	$33,406,110	$26,608,623
2015	$45,718,569	$32,121,260	$24,867,872
2016	$45,718,569	$30,885,827	$23,241,002
2017	$45,718,569	$29,697,910	$21,720,563
2018	$45,718,569	$28,555,683	$20,299,591
2019	$45,718,569	$27,457,388	$18,971,581
2020	$45,718,569	$26,401,334	$17,730,449
2021	$45,718,569	$25,385,898	$16,570,513
2022	$45,718,569	$24,409,518	$15,486,461
2023	$45,718,569	$23,470,690	$14,473,328
2024	$45,718,569	$22,567,971	$13,526,475
2025	$45,718,569	$21,699,972	$12,641,565
2026	$45,718,569	$20,865,358	$11,814,547
2027	$45,718,569	$20,062,844	$11,041,633
2028	$45,718,569	$19,291,196	$10,319,283
2029	$45,718,569	$18,549,227	$9,644,190
2030	$45,718,569	$17,835,795	$9,013,261
Total	$1,142,964,217	$742,787,900	$570,080,103

Table D.4-8. Crashes Avoided ($2006)
Roadside Enforcement Scenario RE-3A

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$437,901,456	$437,901,456	$437,901,456
2007	$437,901,456	$421,059,092	$409,253,697
2008	$437,901,456	$404,864,512	$382,480,091
2009	$437,901,456	$389,292,800	$357,458,029
2010	$437,901,456	$374,320,000	$334,072,924
2011	$437,901,456	$359,923,077	$312,217,686
2012	$437,901,456	$346,079,882	$291,792,230
2013	$437,901,456	$332,769,117	$272,703,019
2014	$437,901,456	$319,970,305	$254,862,634
2015	$437,901,456	$307,663,754	$238,189,378
2016	$437,901,456	$295,830,533	$222,606,895
2017	$437,901,456	$284,452,436	$208,043,827
2018	$437,901,456	$273,511,957	$194,433,483
2019	$437,901,456	$262,992,267	$181,713,536
2020	$437,901,456	$252,877,180	$169,825,735
2021	$437,901,456	$243,151,134	$158,715,640
2022	$437,901,456	$233,799,168	$148,332,374
2023	$437,901,456	$224,806,892	$138,628,387
2024	$437,901,456	$216,160,473	$129,559,240
2025	$437,901,456	$207,846,609	$121,083,402
2026	$437,901,456	$199,852,508	$113,162,058
2027	$437,901,456	$192,165,873	$105,758,932
2028	$437,901,456	$184,774,878	$98,840,124
2029	$437,901,456	$177,668,152	$92,373,947
2030	$437,901,456	$170,834,762	$86,330,792
Total	$10,947,536,400	$7,114,568,815	$5,460,339,514

Table D.4-9. Transit Time Savings (including O&M and air and noise pollution) ($2006)
Roadside Enforcement Scenario RE-3A

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$718,703,942	$718,703,942	$718,703,942
2007	$718,703,942	$691,061,483	$671,685,927
2008	$718,703,942	$664,482,195	$627,743,857
2009	$718,703,942	$638,925,188	$586,676,502
2010	$718,703,942	$614,351,142	$548,295,796
2011	$718,703,942	$590,722,252	$512,425,978
2012	$718,703,942	$568,002,165	$478,902,783
2013	$718,703,942	$546,155,928	$447,572,695
2014	$718,703,942	$525,149,931	$418,292,238
2015	$718,703,942	$504,951,857	$390,927,325
2016	$718,703,942	$485,530,631	$365,352,640
2017	$718,703,942	$466,856,376	$341,451,066
2018	$718,703,942	$448,900,362	$319,113,146
2019	$718,703,942	$431,634,963	$298,236,585
2020	$718,703,942	$415,033,619	$278,725,780
2021	$718,703,942	$399,070,787	$260,491,383
2022	$718,703,942	$383,721,911	$243,449,891
2023	$718,703,942	$368,963,376	$227,523,262
2024	$718,703,942	$354,772,477	$212,638,563
2025	$718,703,942	$341,127,381	$198,727,629
2026	$718,703,942	$328,007,097	$185,726,756
2027	$718,703,942	$315,391,440	$173,576,408
2028	$718,703,942	$303,261,000	$162,220,942
2029	$718,703,942	$291,597,115	$151,608,357
2030	$718,703,942	$280,381,842	$141,690,053
Total	$17,967,598,558	$11,676,756,460	$8,961,759,504

Table D.4-10. One-time Start-up Cost to States ($2006)
Roadside Enforcement Scenario RE-3A

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$543,368,309	$543,368,309	$543,368,309
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$0	$0	$0
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$0	$0	$0
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$0	$0	$0
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$0	$0	$0
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$543,368,309	$543,368,309	$543,368,309

Table D.4-11. Replacement Capital Costs to States ($2006)
Roadside Enforcement Scenario RE-3A

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$0	$0	$0
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$47,643,237	$39,159,268	$33,968,970
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$520,311,665	$351,503,918	$264,500,067
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$47,643,237	$26,454,598	$17,268,102
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$520,311,665	$237,463,452	$134,458,422
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$1,135,909,804	$654,581,236	$450,195,560

Table D.4-12. Increased Operating Costs to States ($2006)
Roadside Enforcement Scenario RE-3A

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$66,535,979	$66,535,979	$66,535,979
2007	$66,535,979	$63,976,903	$62,183,158
2008	$66,535,979	$61,516,253	$58,115,101
2009	$66,535,979	$59,150,243	$54,313,179
2010	$66,535,979	$56,875,234	$50,759,980
2011	$66,535,979	$54,687,725	$47,439,234
2012	$66,535,979	$52,584,351	$44,335,732
2013	$66,535,979	$50,561,876	$41,435,264
2014	$66,535,979	$48,617,188	$38,724,546
2015	$66,535,979	$46,747,296	$36,191,164
2016	$66,535,979	$44,949,324	$33,823,518
2017	$66,535,979	$43,220,503	$31,610,764
2018	$66,535,979	$41,558,176	$29,542,770
2019	$66,535,979	$39,959,785	$27,610,066
2020	$66,535,979	$38,422,870	$25,803,800
2021	$66,535,979	$36,945,067	$24,115,701
2022	$66,535,979	$35,524,103	$22,538,038
2023	$66,535,979	$34,157,792	$21,063,587
2024	$66,535,979	$32,844,030	$19,685,595
2025	$66,535,979	$31,580,798	$18,397,753
2026	$66,535,979	$30,366,152	$17,194,161
2027	$66,535,979	$29,198,223	$16,069,310
2028	$66,535,979	$28,075,215	$15,018,046
2029	$66,535,979	$26,995,399	$14,035,557
2030	$66,535,979	$25,957,114	$13,117,343
Total	$1,663,399,481	$1,081,007,602	$829,659,348

Table D.4-13. Increased Operating Costs to Carriers ($2006)
Roadside Enforcement Scenario RE-3A

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$497,482,777	$497,482,777	$497,482,777
2007	$206,182,369	$198,252,278	$192,693,803
2008	$206,182,369	$190,627,191	$180,087,667
2009	$206,182,369	$183,295,376	$168,306,230
2010	$206,182,369	$176,245,553	$157,295,542
2011	$206,182,369	$169,466,878	$147,005,180
2012	$206,182,369	$162,948,921	$137,388,019
2013	$206,182,369	$156,681,655	$128,400,017
2014	$206,182,369	$150,655,438	$120,000,016
2015	$206,182,369	$144,860,998	$112,149,548
2016	$206,182,369	$139,289,421	$104,812,662
2017	$206,182,369	$133,932,136	$97,955,758
2018	$206,182,369	$128,780,900	$91,547,438
2019	$206,182,369	$123,827,788	$85,558,353
2020	$206,182,369	$119,065,181	$79,961,078
2021	$206,182,369	$114,485,751	$74,729,979
2022	$206,182,369	$110,082,453	$69,841,102
2023	$206,182,369	$105,848,512	$65,272,058
2024	$206,182,369	$101,777,416	$61,001,923
2025	$206,182,369	$97,862,900	$57,011,143
2026	$206,182,369	$94,098,942	$53,281,442
2027	$206,182,369	$90,479,752	$49,795,740
2028	$206,182,369	$86,999,761	$46,538,075
2029	$206,182,369	$83,653,617	$43,493,528
2030	$206,182,369	$80,436,170	$40,648,157
Total	$5,445,859,643	$3,641,137,764	$2,862,257,237

Table D.4-14. Increased OOS Costs to Carriers ($2006)
Roadside Enforcement Scenario RE-3A

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$172,699,020	$172,699,020	$172,699,020
2007	$172,699,020	$166,056,750	$161,400,954
2008	$172,699,020	$159,669,952	$150,842,013
2009	$172,699,020	$153,528,800	$140,973,844
2010	$172,699,020	$147,623,846	$131,751,256
2011	$172,699,020	$141,946,006	$123,132,015
2012	$172,699,020	$136,486,544	$115,076,649
2013	$172,699,020	$131,237,062	$107,548,270
2014	$172,699,020	$126,189,483	$100,512,402
2015	$172,699,020	$121,336,041	$93,936,824
2016	$172,699,020	$116,669,270	$87,791,425
2017	$172,699,020	$112,181,990	$82,048,060
2018	$172,699,020	$107,867,299	$76,680,430
2019	$172,699,020	$103,718,556	$71,663,954
2020	$172,699,020	$99,729,381	$66,975,658
2021	$172,699,020	$95,893,636	$62,594,072
2022	$172,699,020	$92,205,419	$58,499,133
2023	$172,699,020	$88,659,057	$54,672,087
2024	$172,699,020	$85,249,093	$51,095,408
2025	$172,699,020	$81,970,282	$47,752,718
2026	$172,699,020	$78,817,578	$44,628,709
2027	$172,699,020	$75,786,133	$41,709,073
2028	$172,699,020	$72,871,282	$38,980,442
2029	$172,699,020	$70,068,540	$36,430,320
2030	$172,699,020	$67,373,596	$34,047,028
Total	$4,317,475,507	$2,805,834,617	$2,153,441,765

Table D.4-15. Crashes Avoided ($2006)
Roadside Enforcement Scenario RE-3B

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$234,939,398	$234,939,398	$234,939,398
2007	$234,939,398	$225,903,267	$219,569,531
2008	$234,939,398	$217,214,680	$205,205,169
2009	$234,939,398	$208,860,269	$191,780,532
2010	$234,939,398	$200,827,182	$179,234,142
2011	$234,939,398	$193,103,060	$167,508,544
2012	$234,939,398	$185,676,019	$156,550,041
2013	$234,939,398	$178,534,634	$146,308,449
2014	$234,939,398	$171,667,917	$136,736,869
2015	$234,939,398	$165,065,305	$127,791,466
2016	$234,939,398	$158,716,639	$119,431,277
2017	$234,939,398	$152,612,153	$111,618,016
2018	$234,939,398	$146,742,455	$104,315,902
2019	$234,939,398	$141,098,514	$97,491,498
2020	$234,939,398	$135,671,648	$91,113,549
2021	$234,939,398	$130,453,508	$85,152,850
2022	$234,939,398	$125,436,065	$79,582,102
2023	$234,939,398	$120,611,601	$74,375,797
2024	$234,939,398	$115,972,694	$69,510,090
2025	$234,939,398	$111,512,205	$64,962,701
2026	$234,939,398	$107,223,274	$60,712,805
2027	$234,939,398	$103,099,302	$56,740,939
2028	$234,939,398	$99,133,945	$53,028,915
2029	$234,939,398	$95,321,101	$49,559,734
2030	$234,939,398	$91,654,904	$46,317,508
Total	$5,873,484,950	$3,817,051,740	$2,929,537,824

Table D.4-16. Transit Time Savings (including O&M and air and noise pollution) ($2006)
Roadside Enforcement Scenario RE-3B

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$704,585,558	$704,585,558	$704,585,558
2007	$704,585,558	$677,486,114	$658,491,176
2008	$704,585,558	$651,428,956	$615,412,314
2009	$704,585,558	$626,373,996	$575,151,695
2010	$704,585,558	$602,282,688	$537,524,949
2011	$704,585,558	$579,117,969	$502,359,765
2012	$704,585,558	$556,844,201	$469,495,108
2013	$704,585,558	$535,427,117	$438,780,475
2014	$704,585,558	$514,833,766	$410,075,210
2015	$704,585,558	$495,032,467	$383,247,860
2016	$704,585,558	$475,992,757	$358,175,570
2017	$704,585,558	$457,685,343	$334,743,523
2018	$704,585,558	$440,082,061	$312,844,414
2019	$704,585,558	$423,155,828	$292,377,957
2020	$704,585,558	$406,880,604	$273,250,427
2021	$704,585,558	$391,231,350	$255,374,231
2022	$704,585,558	$376,183,990	$238,667,506
2023	$704,585,558	$361,715,375	$223,053,744
2024	$704,585,558	$347,803,245	$208,461,443
2025	$704,585,558	$334,426,197	$194,823,778
2026	$704,585,558	$321,563,651	$182,078,297
2027	$704,585,558	$309,195,819	$170,166,633
2028	$704,585,558	$297,303,672	$159,034,237
2029	$704,585,558	$285,868,915	$148,630,128
2030	$704,585,558	$274,873,957	$138,906,661
Total	$17,614,638,960	$11,447,375,597	$8,785,712,660

Table D.4-17. One-time Start-up Cost to States ($2006)
Roadside Enforcement Scenario RE-3B

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$543,368,309	$543,368,309	$543,368,309
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$0	$0	$0
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$0	$0	$0
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$0	$0	$0
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$0	$0	$0
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$543,368,309	$543,368,309	$543,368,309

Table D.4-18. Replacement Capital Costs to States ($2006)
Roadside Enforcement Scenario RE-3B

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$0	$0	$0
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$47,643,237	$39,159,268	$33,968,970
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$520,311,665	$351,503,918	$264,500,067
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$47,643,237	$26,454,598	$17,268,102
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$520,311,665	$237,463,452	$134,458,422
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$1,135,909,804	$654,581,236	$450,195,560

Table D.4-19. Increased Operating Costs to States ($2006)
Roadside Enforcement Scenario RE-3B

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$66,535,979	$66,535,979	$66,535,979
2007	$66,535,979	$63,976,903	$62,183,158
2008	$66,535,979	$61,516,253	$58,115,101
2009	$66,535,979	$59,150,243	$54,313,179
2010	$66,535,979	$56,875,234	$50,759,980
2011	$66,535,979	$54,687,725	$47,439,234
2012	$66,535,979	$52,584,351	$44,335,732
2013	$66,535,979	$50,561,876	$41,435,264
2014	$66,535,979	$48,617,188	$38,724,546
2015	$66,535,979	$46,747,296	$36,191,164
2016	$66,535,979	$44,949,324	$33,823,518
2017	$66,535,979	$43,220,503	$31,610,764
2018	$66,535,979	$41,558,176	$29,542,770
2019	$66,535,979	$39,959,785	$27,610,066
2020	$66,535,979	$38,422,870	$25,803,800
2021	$66,535,979	$36,945,067	$24,115,701
2022	$66,535,979	$35,524,103	$22,538,038
2023	$66,535,979	$34,157,792	$21,063,587
2024	$66,535,979	$32,844,030	$19,685,595
2025	$66,535,979	$31,580,798	$18,397,753
2026	$66,535,979	$30,366,152	$17,194,161
2027	$66,535,979	$29,198,223	$16,069,310
2028	$66,535,979	$28,075,215	$15,018,046
2029	$66,535,979	$26,995,399	$14,035,557
2030	$66,535,979	$25,957,114	$13,117,343
Total	$1,663,399,481	$1,081,007,602	$829,659,348

Table D.4-20. Increased Operating Costs to Carriers ($2006)
Roadside Enforcement Scenario RE-3B

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$497,482,777	$497,482,777	$497,482,777
2007	$206,182,369	$198,252,278	$192,693,803
2008	$206,182,369	$190,627,191	$180,087,667
2009	$206,182,369	$183,295,376	$168,306,230
2010	$206,182,369	$176,245,553	$157,295,542
2011	$206,182,369	$169,466,878	$147,005,180
2012	$206,182,369	$162,948,921	$137,388,019
2013	$206,182,369	$156,681,655	$128,400,017
2014	$206,182,369	$150,655,438	$120,000,016
2015	$206,182,369	$144,860,998	$112,149,548
2016	$206,182,369	$139,289,421	$104,812,662
2017	$206,182,369	$133,932,136	$97,955,758
2018	$206,182,369	$128,780,900	$91,547,438
2019	$206,182,369	$123,827,788	$85,558,353
2020	$206,182,369	$119,065,181	$79,961,078
2021	$206,182,369	$114,485,751	$74,729,979
2022	$206,182,369	$110,082,453	$69,841,102
2023	$206,182,369	$105,848,512	$65,272,058
2024	$206,182,369	$101,777,416	$61,001,923
2025	$206,182,369	$97,862,900	$57,011,143
2026	$206,182,369	$94,098,942	$53,281,442
2027	$206,182,369	$90,479,752	$49,795,740
2028	$206,182,369	$86,999,761	$46,538,075
2029	$206,182,369	$83,653,617	$43,493,528
2030	$206,182,369	$80,436,170	$40,648,157
Total	$5,445,859,643	$3,641,137,764	$2,862,257,237

Table D.4-21. Increased OOS Costs to Carriers ($2006)
Roadside Enforcement Scenario RE-3B

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$87,352,595	$87,352,595	$87,352,595
2007	$87,352,595	$83,992,880	$81,637,939
2008	$87,352,595	$80,762,385	$76,297,140
2009	$87,352,595	$77,656,139	$71,305,738
2010	$87,352,595	$74,669,364	$66,640,877
2011	$87,352,595	$71,797,466	$62,281,193
2012	$87,352,595	$69,036,025	$58,206,723
2013	$87,352,595	$66,380,793	$54,398,806
2014	$87,352,595	$63,827,686	$50,840,006
2015	$87,352,595	$61,372,775	$47,514,024
2016	$87,352,595	$59,012,283	$44,405,630
2017	$87,352,595	$56,742,580	$41,500,589
2018	$87,352,595	$54,560,173	$38,785,597
2019	$87,352,595	$52,461,705	$36,248,221
2020	$87,352,595	$50,443,947	$33,876,842
2021	$87,352,595	$48,503,795	$31,660,600
2022	$87,352,595	$46,638,265	$29,589,346
2023	$87,352,595	$44,844,485	$27,653,595
2024	$87,352,595	$43,119,697	$25,844,481
2025	$87,352,595	$41,461,248	$24,153,720
2026	$87,352,595	$39,866,584	$22,573,571
2027	$87,352,595	$38,333,254	$21,096,795
2028	$87,352,595	$36,858,898	$19,716,631
2029	$87,352,595	$35,441,248	$18,426,758
2030	$87,352,595	$34,078,123	$17,221,269
Total	$2,183,814,879	$1,419,214,394	$1,089,228,685

Table D.4-22. Crashes Avoided ($2006)
Roadside Enforcement Scenario RE-3C

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$51,445,897	$51,445,897	$51,445,897
2007	$51,445,897	$49,467,209	$48,080,278
2008	$51,445,897	$47,564,624	$44,934,839
2009	$51,445,897	$45,735,215	$41,995,176
2010	$51,445,897	$43,976,168	$39,247,829
2011	$51,445,897	$42,284,777	$36,680,214
2012	$51,445,897	$40,658,440	$34,280,573
2013	$51,445,897	$39,094,654	$32,037,919
2014	$51,445,897	$37,591,013	$29,941,980
2015	$51,445,897	$36,145,205	$27,983,159
2016	$51,445,897	$34,755,005	$26,152,485
2017	$51,445,897	$33,418,274	$24,441,575
2018	$51,445,897	$32,132,955	$22,842,594
2019	$51,445,897	$30,897,073	$21,348,218
2020	$51,445,897	$29,708,724	$19,951,606
2021	$51,445,897	$28,566,080	$18,646,361
2022	$51,445,897	$27,467,385	$17,426,505
2023	$51,445,897	$26,410,947	$16,286,453
2024	$51,445,897	$25,395,141	$15,220,985
2025	$51,445,897	$24,418,405	$14,225,219
2026	$51,445,897	$23,479,236	$13,294,597
2027	$51,445,897	$22,576,188	$12,424,857
2028	$51,445,897	$21,707,873	$11,612,016
2029	$51,445,897	$20,872,955	$10,852,352
2030	$51,445,897	$20,070,149	$10,142,385
Total	$1,286,147,425	$835,839,592	$641,496,073

Table D.4-23. Transit Time Savings (including O&M and air and noise pollution) ($2006)
Roadside Enforcement Scenario RE-3C

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$662,230,407	$662,230,407	$662,230,407
2007	$662,230,407	$636,760,006	$618,906,922
2008	$662,230,407	$612,269,237	$578,417,684
2009	$662,230,407	$588,720,420	$540,577,275
2010	$662,230,407	$566,077,327	$505,212,406
2011	$662,230,407	$544,305,122	$472,161,128
2012	$662,230,407	$523,370,310	$441,272,082
2013	$662,230,407	$503,240,682	$412,403,815
2014	$662,230,407	$483,885,272	$385,424,126
2015	$662,230,407	$465,274,300	$360,209,464
2016	$662,230,407	$447,379,134	$336,644,358
2017	$662,230,407	$430,172,244	$314,620,896
2018	$662,230,407	$413,627,158	$294,038,220
2019	$662,230,407	$397,718,421	$274,802,075
2020	$662,230,407	$382,421,559	$256,824,369
2021	$662,230,407	$367,713,037	$240,022,775
2022	$662,230,407	$353,570,228	$224,320,350
2023	$662,230,407	$339,971,373	$209,645,187
2024	$662,230,407	$326,895,551	$195,930,082
2025	$662,230,407	$314,322,645	$183,112,226
2026	$662,230,407	$302,233,313	$171,132,921
2027	$662,230,407	$290,608,955	$159,937,310
2028	$662,230,407	$279,431,687	$149,474,121
2029	$662,230,407	$268,684,315	$139,695,440
2030	$662,230,407	$258,350,303	$130,556,486
Total	$16,555,760,165	$10,759,233,007	$8,257,572,125

Table D.4-24. One-time Start-up Cost to States ($2006)
Roadside Enforcement Scenario RE-3C

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$543,368,309	$543,368,309	$543,368,309
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$0	$0	$0
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$0	$0	$0
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$0	$0	$0
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$0	$0	$0
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$543,368,309	$543,368,309	$543,368,309

Table D.4-25. Replacement Capital Costs to States ($2006)
Roadside Enforcement Scenario RE-3C

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$0	$0	$0
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$47,643,237	$39,159,268	$33,968,970
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$520,311,665	$351,503,918	$264,500,067
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$47,643,237	$26,454,598	$17,268,102
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$520,311,665	$237,463,452	$134,458,422
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$1,135,909,804	$654,581,236	$450,195,560

Table D.4-26. Increased Operating Costs to States ($2006)
Roadside Enforcement Scenario RE-3C

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$66,535,979	$66,535,979	$66,535,979
2007	$66,535,979	$63,976,903	$62,183,158
2008	$66,535,979	$61,516,253	$58,115,101
2009	$66,535,979	$59,150,243	$54,313,179
2010	$66,535,979	$56,875,234	$50,759,980
2011	$66,535,979	$54,687,725	$47,439,234
2012	$66,535,979	$52,584,351	$44,335,732
2013	$66,535,979	$50,561,876	$41,435,264
2014	$66,535,979	$48,617,188	$38,724,546
2015	$66,535,979	$46,747,296	$36,191,164
2016	$66,535,979	$44,949,324	$33,823,518
2017	$66,535,979	$43,220,503	$31,610,764
2018	$66,535,979	$41,558,176	$29,542,770
2019	$66,535,979	$39,959,785	$27,610,066
2020	$66,535,979	$38,422,870	$25,803,800
2021	$66,535,979	$36,945,067	$24,115,701
2022	$66,535,979	$35,524,103	$22,538,038
2023	$66,535,979	$34,157,792	$21,063,587
2024	$66,535,979	$32,844,030	$19,685,595
2025	$66,535,979	$31,580,798	$18,397,753
2026	$66,535,979	$30,366,152	$17,194,161
2027	$66,535,979	$29,198,223	$16,069,310
2028	$66,535,979	$28,075,215	$15,018,046
2029	$66,535,979	$26,995,399	$14,035,557
2030	$66,535,979	$25,957,114	$13,117,343
Total	$1,663,399,481	$1,081,007,602	$829,659,348

Table D.4-27. Increased Operating Costs to Carriers ($2006)
Roadside Enforcement Scenario RE-3C

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$497,482,777	$497,482,777	$497,482,777
2007	$206,182,369	$198,252,278	$192,693,803
2008	$206,182,369	$190,627,191	$180,087,667
2009	$206,182,369	$183,295,376	$168,306,230
2010	$206,182,369	$176,245,553	$157,295,542
2011	$206,182,369	$169,466,878	$147,005,180
2012	$206,182,369	$162,948,921	$137,388,019
2013	$206,182,369	$156,681,655	$128,400,017
2014	$206,182,369	$150,655,438	$120,000,016
2015	$206,182,369	$144,860,998	$112,149,548
2016	$206,182,369	$139,289,421	$104,812,662
2017	$206,182,369	$133,932,136	$97,955,758
2018	$206,182,369	$128,780,900	$91,547,438
2019	$206,182,369	$123,827,788	$85,558,353
2020	$206,182,369	$119,065,181	$79,961,078
2021	$206,182,369	$114,485,751	$74,729,979
2022	$206,182,369	$110,082,453	$69,841,102
2023	$206,182,369	$105,848,512	$65,272,058
2024	$206,182,369	$101,777,416	$61,001,923
2025	$206,182,369	$97,862,900	$57,011,143
2026	$206,182,369	$94,098,942	$53,281,442
2027	$206,182,369	$90,479,752	$49,795,740
2028	$206,182,369	$86,999,761	$46,538,075
2029	$206,182,369	$83,653,617	$43,493,528
2030	$206,182,369	$80,436,170	$40,648,157
Total	$5,445,859,643	$3,641,137,764	$2,862,257,237

Table D.4-28. Increased OOS Costs to Carriers ($2006)
Roadside Enforcement Scenario RE-3C

Year	Amount	Discounted at 4%	Discounted at 7%
2006	-$4,761,997	-$4,761,997	-$4,761,997
2007	-$4,761,997	-$4,578,843	-$4,450,464
2008	-$4,761,997	-$4,402,734	-$4,159,312
2009	-$4,761,997	-$4,233,398	-$3,887,208
2010	-$4,761,997	-$4,070,575	-$3,632,904
2011	-$4,761,997	-$3,914,014	-$3,395,238
2012	-$4,761,997	-$3,763,475	-$3,173,119
2013	-$4,761,997	-$3,618,726	-$2,965,532
2014	-$4,761,997	-$3,479,544	-$2,771,525
2015	-$4,761,997	-$3,345,716	-$2,590,211
2016	-$4,761,997	-$3,217,034	-$2,420,758
2017	-$4,761,997	-$3,093,302	-$2,262,390
2018	-$4,761,997	-$2,974,329	-$2,114,383
2019	-$4,761,997	-$2,859,932	-$1,976,059
2020	-$4,761,997	-$2,749,934	-$1,846,784
2021	-$4,761,997	-$2,644,168	-$1,725,967
2022	-$4,761,997	-$2,542,469	-$1,613,053
2023	-$4,761,997	-$2,444,682	-$1,507,526
2024	-$4,761,997	-$2,350,655	-$1,408,903
2025	-$4,761,997	-$2,260,246	-$1,316,732
2026	-$4,761,997	-$2,173,313	-$1,230,590
2027	-$4,761,997	-$2,089,724	-$1,150,084
2028	-$4,761,997	-$2,009,350	-$1,074,845
2029	-$4,761,997	-$1,932,067	-$1,004,528
2030	-$4,761,997	-$1,857,757	-$938,812
Total	-$119,049,915	-$77,367,983	-$59,378,926

Table D.4-29. Crashes Avoided ($2006)
Roadside Enforcement Scenario RE-4A

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$1,165,385,941	$1,165,385,941	$1,165,385,941
2007	$1,165,385,941	$1,120,563,405	$1,089,145,739
2008	$1,165,385,941	$1,077,464,812	$1,017,893,214
2009	$1,165,385,941	$1,036,023,858	$951,302,069
2010	$1,165,385,941	$996,176,787	$889,067,355
2011	$1,165,385,941	$957,862,295	$830,904,070
2012	$1,165,385,941	$921,021,437	$776,545,860
2013	$1,165,385,941	$885,597,536	$725,743,794
2014	$1,165,385,941	$851,536,092	$678,265,228
2015	$1,165,385,941	$818,784,704	$633,892,736
2016	$1,165,385,941	$787,292,985	$592,423,118
2017	$1,165,385,941	$757,012,485	$553,666,466
2018	$1,165,385,941	$727,896,620	$517,445,295
2019	$1,165,385,941	$699,900,597	$483,593,734
2020	$1,165,385,941	$672,981,343	$451,956,760
2021	$1,165,385,941	$647,097,445	$422,389,496
2022	$1,165,385,941	$622,209,082	$394,756,538
2023	$1,165,385,941	$598,277,963	$368,931,344
2024	$1,165,385,941	$575,267,272	$344,795,649
2025	$1,165,385,941	$553,141,608	$322,238,924
2026	$1,165,385,941	$531,866,931	$301,157,873
2027	$1,165,385,941	$511,410,510	$281,455,956
2028	$1,165,385,941	$491,740,875	$263,042,949
2029	$1,165,385,941	$472,827,765	$245,834,532
2030	$1,165,385,941	$454,642,081	$229,751,899
Total	$29,134,648,525	$18,933,982,429	$14,531,586,538

Table D.4-30. Transit Time Savings (including O&M and air and noise pollution) ($2006)
Roadside Enforcement Scenario RE-4A

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$718,703,942	$718,703,942	$718,703,942
2007	$718,703,942	$691,061,483	$671,685,927
2008	$718,703,942	$664,482,195	$627,743,857
2009	$718,703,942	$638,925,188	$586,676,502
2010	$718,703,942	$614,351,142	$548,295,796
2011	$718,703,942	$590,722,252	$512,425,978
2012	$718,703,942	$568,002,165	$478,902,783
2013	$718,703,942	$546,155,928	$447,572,695
2014	$718,703,942	$525,149,931	$418,292,238
2015	$718,703,942	$504,951,857	$390,927,325
2016	$718,703,942	$485,530,631	$365,352,640
2017	$718,703,942	$466,856,376	$341,451,066
2018	$718,703,942	$448,900,362	$319,113,146
2019	$718,703,942	$431,634,963	$298,236,585
2020	$718,703,942	$415,033,619	$278,725,780
2021	$718,703,942	$399,070,787	$260,491,383
2022	$718,703,942	$383,721,911	$243,449,891
2023	$718,703,942	$368,963,376	$227,523,262
2024	$718,703,942	$354,772,477	$212,638,563
2025	$718,703,942	$341,127,381	$198,727,629
2026	$718,703,942	$328,007,097	$185,726,756
2027	$718,703,942	$315,391,440	$173,576,408
2028	$718,703,942	$303,261,000	$162,220,942
2029	$718,703,942	$291,597,115	$151,608,357
2030	$718,703,942	$280,381,842	$141,690,053
Total	$17,967,598,558	$11,676,756,460	$8,961,759,504

Table D.4-31. One-time Start-up Cost to States ($2006)
Roadside Enforcement Scenario RE-4A

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$543,368,309	$543,368,309	$543,368,309
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$0	$0	$0
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$0	$0	$0
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$0	$0	$0
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$0	$0	$0
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$543,368,309	$543,368,309	$543,368,309

Table D.4-32. Replacement Capital Costs to States ($2006)
Roadside Enforcement Scenario RE-4A

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$0	$0	$0
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$47,643,237	$39,159,268	$33,968,970
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$520,311,665	$351,503,918	$264,500,067
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$47,643,237	$26,454,598	$17,268,102
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$520,311,665	$237,463,452	$134,458,422
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$1,135,909,804	$654,581,236	$450,195,560

Table D.4-33. Increased Operating Costs to States ($2006)
Roadside Enforcement Scenario RE-4A

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$66,535,979	$66,535,979	$66,535,979
2007	$66,535,979	$63,976,903	$62,183,158
2008	$66,535,979	$61,516,253	$58,115,101
2009	$66,535,979	$59,150,243	$54,313,179
2010	$66,535,979	$56,875,234	$50,759,980
2011	$66,535,979	$54,687,725	$47,439,234
2012	$66,535,979	$52,584,351	$44,335,732
2013	$66,535,979	$50,561,876	$41,435,264
2014	$66,535,979	$48,617,188	$38,724,546
2015	$66,535,979	$46,747,296	$36,191,164
2016	$66,535,979	$44,949,324	$33,823,518
2017	$66,535,979	$43,220,503	$31,610,764
2018	$66,535,979	$41,558,176	$29,542,770
2019	$66,535,979	$39,959,785	$27,610,066
2020	$66,535,979	$38,422,870	$25,803,800
2021	$66,535,979	$36,945,067	$24,115,701
2022	$66,535,979	$35,524,103	$22,538,038
2023	$66,535,979	$34,157,792	$21,063,587
2024	$66,535,979	$32,844,030	$19,685,595
2025	$66,535,979	$31,580,798	$18,397,753
2026	$66,535,979	$30,366,152	$17,194,161
2027	$66,535,979	$29,198,223	$16,069,310
2028	$66,535,979	$28,075,215	$15,018,046
2029	$66,535,979	$26,995,399	$14,035,557
2030	$66,535,979	$25,957,114	$13,117,343
Total	$1,663,399,481	$1,081,007,602	$829,659,348

Table D.4-34. Increased Operating Costs to Carriers ($2006)
Roadside Enforcement Scenario RE-4A

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$497,482,777	$497,482,777	$497,482,777
2007	$206,182,369	$198,252,278	$192,693,803
2008	$206,182,369	$190,627,191	$180,087,667
2009	$206,182,369	$183,295,376	$168,306,230
2010	$206,182,369	$176,245,553	$157,295,542
2011	$206,182,369	$169,466,878	$147,005,180
2012	$206,182,369	$162,948,921	$137,388,019
2013	$206,182,369	$156,681,655	$128,400,017
2014	$206,182,369	$150,655,438	$120,000,016
2015	$206,182,369	$144,860,998	$112,149,548
2016	$206,182,369	$139,289,421	$104,812,662
2017	$206,182,369	$133,932,136	$97,955,758
2018	$206,182,369	$128,780,900	$91,547,438
2019	$206,182,369	$123,827,788	$85,558,353
2020	$206,182,369	$119,065,181	$79,961,078
2021	$206,182,369	$114,485,751	$74,729,979
2022	$206,182,369	$110,082,453	$69,841,102
2023	$206,182,369	$105,848,512	$65,272,058
2024	$206,182,369	$101,777,416	$61,001,923
2025	$206,182,369	$97,862,900	$57,011,143
2026	$206,182,369	$94,098,942	$53,281,442
2027	$206,182,369	$90,479,752	$49,795,740
2028	$206,182,369	$86,999,761	$46,538,075
2029	$206,182,369	$83,653,617	$43,493,528
2030	$206,182,369	$80,436,170	$40,648,157
Total	$5,445,859,643	$3,641,137,764	$2,862,257,237

Table D.4-35. Increased OOS Costs to Carriers ($2006)
Roadside Enforcement Scenario RE-4A

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$68,927,551	$68,927,551	$68,927,551
2007	$68,927,551	$66,276,491	$64,418,272
2008	$68,927,551	$63,727,396	$60,203,993
2009	$68,927,551	$61,276,342	$56,265,414
2010	$68,927,551	$58,919,559	$52,584,499
2011	$68,927,551	$56,653,423	$49,144,391
2012	$68,927,551	$54,474,445	$45,929,338
2013	$68,927,551	$52,379,274	$42,924,615
2014	$68,927,551	$50,364,686	$40,116,462
2015	$68,927,551	$48,427,583	$37,492,021
2016	$68,927,551	$46,564,984	$35,039,272
2017	$68,927,551	$44,774,023	$32,746,983
2018	$68,927,551	$43,051,945	$30,604,657
2019	$68,927,551	$41,396,101	$28,602,483
2020	$68,927,551	$39,803,943	$26,731,293
2021	$68,927,551	$38,273,022	$24,982,517
2022	$68,927,551	$36,800,983	$23,348,146
2023	$68,927,551	$35,385,561	$21,820,697
2024	$68,927,551	$34,024,577	$20,393,175
2025	$68,927,551	$32,715,940	$19,059,042
2026	$68,927,551	$31,457,635	$17,812,189
2027	$68,927,551	$30,247,725	$16,646,906
2028	$68,927,551	$29,084,351	$15,557,856
2029	$68,927,551	$27,965,723	$14,540,052
2030	$68,927,551	$26,890,118	$13,588,834
Total	$1,723,188,776	$1,119,863,381	$859,480,656

Table D.4-36. Crashes Avoided ($2006)
Roadside Enforcement Scenario RE-4B

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$791,062,961	$791,062,961	$791,062,961
2007	$791,062,961	$760,637,463	$739,311,179
2008	$791,062,961	$731,382,175	$690,945,027
2009	$791,062,961	$703,252,092	$645,743,016
2010	$791,062,961	$676,203,934	$603,498,145
2011	$791,062,961	$650,196,091	$564,016,958
2012	$791,062,961	$625,188,549	$527,118,653
2013	$791,062,961	$601,142,835	$492,634,255
2014	$791,062,961	$578,021,957	$460,405,846
2015	$791,062,961	$555,790,343	$430,285,837
2016	$791,062,961	$534,413,792	$402,136,296
2017	$791,062,961	$513,859,415	$375,828,314
2018	$791,062,961	$494,095,591	$351,241,415
2019	$791,062,961	$475,091,915	$328,263,005
2020	$791,062,961	$456,819,149	$306,787,855
2021	$791,062,961	$439,249,182	$286,717,622
2022	$791,062,961	$422,354,982	$267,960,394
2023	$791,062,961	$406,110,560	$250,430,275
2024	$791,062,961	$390,490,923	$234,046,986
2025	$791,062,961	$375,472,041	$218,735,501
2026	$791,062,961	$361,030,809	$204,425,702
2027	$791,062,961	$347,145,009	$191,052,058
2028	$791,062,961	$333,793,278	$178,553,325
2029	$791,062,961	$320,955,075	$166,872,266
2030	$791,062,961	$308,610,649	$155,955,389
Total	$19,776,574,025	$12,852,370,770	$9,864,028,276

Table D.4-37. Transit Time Savings (including O&M and air and noise pollution) ($2006)
Roadside Enforcement Scenario RE-4B

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$704,585,558	$704,585,558	$704,585,558
2007	$704,585,558	$677,486,114	$658,491,176
2008	$704,585,558	$651,428,956	$615,412,314
2009	$704,585,558	$626,373,996	$575,151,695
2010	$704,585,558	$602,282,688	$537,524,949
2011	$704,585,558	$579,117,969	$502,359,765
2012	$704,585,558	$556,844,201	$469,495,108
2013	$704,585,558	$535,427,117	$438,780,475
2014	$704,585,558	$514,833,766	$410,075,210
2015	$704,585,558	$495,032,467	$383,247,860
2016	$704,585,558	$475,992,757	$358,175,570
2017	$704,585,558	$457,685,343	$334,743,523
2018	$704,585,558	$440,082,061	$312,844,414
2019	$704,585,558	$423,155,828	$292,377,957
2020	$704,585,558	$406,880,604	$273,250,427
2021	$704,585,558	$391,231,350	$255,374,231
2022	$704,585,558	$376,183,990	$238,667,506
2023	$704,585,558	$361,715,375	$223,053,744
2024	$704,585,558	$347,803,245	$208,461,443
2025	$704,585,558	$334,426,197	$194,823,778
2026	$704,585,558	$321,563,651	$182,078,297
2027	$704,585,558	$309,195,819	$170,166,633
2028	$704,585,558	$297,303,672	$159,034,237
2029	$704,585,558	$285,868,915	$148,630,128
2030	$704,585,558	$274,873,957	$138,906,661
Total	$17,614,638,960	$11,447,375,597	$8,785,712,660

Table D.4-38. One-time Start-up Cost to States ($2006)
Roadside Enforcement Scenario RE-4B

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$543,368,309	$543,368,309	$543,368,309
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$0	$0	$0
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$0	$0	$0
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$0	$0	$0
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$0	$0	$0
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$543,368,309	$543,368,309	$543,368,309

Table D.4-39. Replacement Capital Costs to States ($2006)
Roadside Enforcement Scenario RE-4B

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$0	$0	$0
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$47,643,237	$39,159,268	$33,968,970
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$520,311,665	$351,503,918	$264,500,067
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$47,643,237	$26,454,598	$17,268,102
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$520,311,665	$237,463,452	$134,458,422
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$1,135,909,804	$654,581,236	$450,195,560

Table D.4-40. Increased Operating Costs to States ($2006)
Roadside Enforcement Scenario RE-4B

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$66,535,979	$66,535,979	$66,535,979
2007	$66,535,979	$63,976,903	$62,183,158
2008	$66,535,979	$61,516,253	$58,115,101
2009	$66,535,979	$59,150,243	$54,313,179
2010	$66,535,979	$56,875,234	$50,759,980
2011	$66,535,979	$54,687,725	$47,439,234
2012	$66,535,979	$52,584,351	$44,335,732
2013	$66,535,979	$50,561,876	$41,435,264
2014	$66,535,979	$48,617,188	$38,724,546
2015	$66,535,979	$46,747,296	$36,191,164
2016	$66,535,979	$44,949,324	$33,823,518
2017	$66,535,979	$43,220,503	$31,610,764
2018	$66,535,979	$41,558,176	$29,542,770
2019	$66,535,979	$39,959,785	$27,610,066
2020	$66,535,979	$38,422,870	$25,803,800
2021	$66,535,979	$36,945,067	$24,115,701
2022	$66,535,979	$35,524,103	$22,538,038
2023	$66,535,979	$34,157,792	$21,063,587
2024	$66,535,979	$32,844,030	$19,685,595
2025	$66,535,979	$31,580,798	$18,397,753
2026	$66,535,979	$30,366,152	$17,194,161
2027	$66,535,979	$29,198,223	$16,069,310
2028	$66,535,979	$28,075,215	$15,018,046
2029	$66,535,979	$26,995,399	$14,035,557
2030	$66,535,979	$25,957,114	$13,117,343
Total	$1,663,399,481	$1,081,007,602	$829,659,348

Table D.4-41. Increased Operating Costs to Carriers ($2006)
Roadside Enforcement Scenario RE-4B

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$497,482,777	$497,482,777	$497,482,777
2007	$206,182,369	$198,252,278	$192,693,803
2008	$206,182,369	$190,627,191	$180,087,667
2009	$206,182,369	$183,295,376	$168,306,230
2010	$206,182,369	$176,245,553	$157,295,542
2011	$206,182,369	$169,466,878	$147,005,180
2012	$206,182,369	$162,948,921	$137,388,019
2013	$206,182,369	$156,681,655	$128,400,017
2014	$206,182,369	$150,655,438	$120,000,016
2015	$206,182,369	$144,860,998	$112,149,548
2016	$206,182,369	$139,289,421	$104,812,662
2017	$206,182,369	$133,932,136	$97,955,758
2018	$206,182,369	$128,780,900	$91,547,438
2019	$206,182,369	$123,827,788	$85,558,353
2020	$206,182,369	$119,065,181	$79,961,078
2021	$206,182,369	$114,485,751	$74,729,979
2022	$206,182,369	$110,082,453	$69,841,102
2023	$206,182,369	$105,848,512	$65,272,058
2024	$206,182,369	$101,777,416	$61,001,923
2025	$206,182,369	$97,862,900	$57,011,143
2026	$206,182,369	$94,098,942	$53,281,442
2027	$206,182,369	$90,479,752	$49,795,740
2028	$206,182,369	$86,999,761	$46,538,075
2029	$206,182,369	$83,653,617	$43,493,528
2030	$206,182,369	$80,436,170	$40,648,157
Total	$5,445,859,643	$3,641,137,764	$2,862,257,237

Table D.4-42. Increased OOS Costs to Carriers ($2006)
Roadside Enforcement Scenario RE-4B

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$9,523,993	$9,523,993	$9,523,993
2007	$9,523,993	$9,157,686	$8,900,928
2008	$9,523,993	$8,805,467	$8,318,625
2009	$9,523,993	$8,466,795	$7,774,415
2010	$9,523,993	$8,141,149	$7,265,809
2011	$9,523,993	$7,828,028	$6,790,476
2012	$9,523,993	$7,526,950	$6,346,239
2013	$9,523,993	$7,237,452	$5,931,064
2014	$9,523,993	$6,959,089	$5,543,051
2015	$9,523,993	$6,691,431	$5,180,421
2016	$9,523,993	$6,434,069	$4,841,515
2017	$9,523,993	$6,186,604	$4,524,781
2018	$9,523,993	$5,948,658	$4,228,767
2019	$9,523,993	$5,719,864	$3,952,119
2020	$9,523,993	$5,499,869	$3,693,569
2021	$9,523,993	$5,288,335	$3,451,933
2022	$9,523,993	$5,084,938	$3,226,106
2023	$9,523,993	$4,889,363	$3,015,052
2024	$9,523,993	$4,701,311	$2,817,806
2025	$9,523,993	$4,520,491	$2,633,463
2026	$9,523,993	$4,346,626	$2,461,181
2027	$9,523,993	$4,179,448	$2,300,169
2028	$9,523,993	$4,018,700	$2,149,691
2029	$9,523,993	$3,864,135	$2,009,057
2030	$9,523,993	$3,715,514	$1,877,623
Total	$238,099,830	$154,735,967	$118,757,852

Table D.4-43. Crashes Avoided ($2006)
Roadside Enforcement Scenario RE-4C

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$422,006,837	$422,006,837	$422,006,837
2007	$422,006,837	$405,775,805	$394,398,913
2008	$422,006,837	$390,169,043	$368,597,115
2009	$422,006,837	$375,162,541	$344,483,285
2010	$422,006,837	$360,733,213	$321,946,995
2011	$422,006,837	$346,858,859	$300,885,042
2012	$422,006,837	$333,518,133	$281,200,974
2013	$422,006,837	$320,690,513	$262,804,649
2014	$422,006,837	$308,356,262	$245,611,821
2015	$422,006,837	$296,496,406	$229,543,758
2016	$422,006,837	$285,092,698	$214,526,877
2017	$422,006,837	$274,127,594	$200,492,408
2018	$422,006,837	$263,584,225	$187,376,083
2019	$422,006,837	$253,446,370	$175,117,834
2020	$422,006,837	$243,698,433	$163,661,527
2021	$422,006,837	$234,325,416	$152,954,698
2022	$422,006,837	$225,312,900	$142,948,316
2023	$422,006,837	$216,647,020	$133,596,557
2024	$422,006,837	$208,314,442	$124,856,596
2025	$422,006,837	$200,302,348	$116,688,407
2026	$422,006,837	$192,598,412	$109,054,586
2027	$422,006,837	$185,190,780	$101,920,174
2028	$422,006,837	$178,068,058	$95,252,499
2029	$422,006,837	$171,219,287	$89,021,027
2030	$422,006,837	$164,633,929	$83,197,222
Total	$10,550,170,925	$6,856,329,526	$5,262,144,201

Table D.4-44. Transit Time Savings (including O&M and air and noise pollution) ($2006)
Roadside Enforcement Scenario RE-4C

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$662,230,407	$662,230,407	$662,230,407
2007	$662,230,407	$636,760,006	$618,906,922
2008	$662,230,407	$612,269,237	$578,417,684
2009	$662,230,407	$588,720,420	$540,577,275
2010	$662,230,407	$566,077,327	$505,212,406
2011	$662,230,407	$544,305,122	$472,161,128
2012	$662,230,407	$523,370,310	$441,272,082
2013	$662,230,407	$503,240,682	$412,403,815
2014	$662,230,407	$483,885,272	$385,424,126
2015	$662,230,407	$465,274,300	$360,209,464
2016	$662,230,407	$447,379,134	$336,644,358
2017	$662,230,407	$430,172,244	$314,620,896
2018	$662,230,407	$413,627,158	$294,038,220
2019	$662,230,407	$397,718,421	$274,802,075
2020	$662,230,407	$382,421,559	$256,824,369
2021	$662,230,407	$367,713,037	$240,022,775
2022	$662,230,407	$353,570,228	$224,320,350
2023	$662,230,407	$339,971,373	$209,645,187
2024	$662,230,407	$326,895,551	$195,930,082
2025	$662,230,407	$314,322,645	$183,112,226
2026	$662,230,407	$302,233,313	$171,132,921
2027	$662,230,407	$290,608,955	$159,937,310
2028	$662,230,407	$279,431,687	$149,474,121
2029	$662,230,407	$268,684,315	$139,695,440
2030	$662,230,407	$258,350,303	$130,556,486
Total	$16,555,760,165	$10,759,233,007	$8,257,572,125

Table D.4-45. One-time Start-up Cost to States ($2006)
Roadside Enforcement Scenario RE-4C

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$543,368,309	$543,368,309	$543,368,309
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$0	$0	$0
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$0	$0	$0
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$0	$0	$0
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$0	$0	$0
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$543,368,309	$543,368,309	$543,368,309

Table D.4-46. Replacement Capital Costs to States ($2006)
Roadside Enforcement Scenario RE-4C

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$0	$0	$0
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$47,643,237	$39,159,268	$33,968,970
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$520,311,665	$351,503,918	$264,500,067
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$47,643,237	$26,454,598	$17,268,102
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$520,311,665	$237,463,452	$134,458,422
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$1,135,909,804	$654,581,236	$450,195,560

Table D.4-47. Increased Operating Costs to States ($2006)
Roadside Enforcement Scenario RE-4C

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$66,535,979	$66,535,979	$66,535,979
2007	$66,535,979	$63,976,903	$62,183,158
2008	$66,535,979	$61,516,253	$58,115,101
2009	$66,535,979	$59,150,243	$54,313,179
2010	$66,535,979	$56,875,234	$50,759,980
2011	$66,535,979	$54,687,725	$47,439,234
2012	$66,535,979	$52,584,351	$44,335,732
2013	$66,535,979	$50,561,876	$41,435,264
2014	$66,535,979	$48,617,188	$38,724,546
2015	$66,535,979	$46,747,296	$36,191,164
2016	$66,535,979	$44,949,324	$33,823,518
2017	$66,535,979	$43,220,503	$31,610,764
2018	$66,535,979	$41,558,176	$29,542,770
2019	$66,535,979	$39,959,785	$27,610,066
2020	$66,535,979	$38,422,870	$25,803,800
2021	$66,535,979	$36,945,067	$24,115,701
2022	$66,535,979	$35,524,103	$22,538,038
2023	$66,535,979	$34,157,792	$21,063,587
2024	$66,535,979	$32,844,030	$19,685,595
2025	$66,535,979	$31,580,798	$18,397,753
2026	$66,535,979	$30,366,152	$17,194,161
2027	$66,535,979	$29,198,223	$16,069,310
2028	$66,535,979	$28,075,215	$15,018,046
2029	$66,535,979	$26,995,399	$14,035,557
2030	$66,535,979	$25,957,114	$13,117,343
Total	$1,663,399,481	$1,081,007,602	$829,659,348

Table D.4-48. Increased Operating Costs to Carriers ($2006)
Roadside Enforcement Scenario RE-4C

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$497,482,777	$497,482,777	$497,482,777
2007	$206,182,369	$198,252,278	$192,693,803
2008	$206,182,369	$190,627,191	$180,087,667
2009	$206,182,369	$183,295,376	$168,306,230
2010	$206,182,369	$176,245,553	$157,295,542
2011	$206,182,369	$169,466,878	$147,005,180
2012	$206,182,369	$162,948,921	$137,388,019
2013	$206,182,369	$156,681,655	$128,400,017
2014	$206,182,369	$150,655,438	$120,000,016
2015	$206,182,369	$144,860,998	$112,149,548
2016	$206,182,369	$139,289,421	$104,812,662
2017	$206,182,369	$133,932,136	$97,955,758
2018	$206,182,369	$128,780,900	$91,547,438
2019	$206,182,369	$123,827,788	$85,558,353
2020	$206,182,369	$119,065,181	$79,961,078
2021	$206,182,369	$114,485,751	$74,729,979
2022	$206,182,369	$110,082,453	$69,841,102
2023	$206,182,369	$105,848,512	$65,272,058
2024	$206,182,369	$101,777,416	$61,001,923
2025	$206,182,369	$97,862,900	$57,011,143
2026	$206,182,369	$94,098,942	$53,281,442
2027	$206,182,369	$90,479,752	$49,795,740
2028	$206,182,369	$86,999,761	$46,538,075
2029	$206,182,369	$83,653,617	$43,493,528
2030	$206,182,369	$80,436,170	$40,648,157
Total	$5,445,859,643	$3,641,137,764	$2,862,257,237

Table D.4-49. Increased OOS Costs to Carriers ($2006)
Roadside Enforcement Scenario RE-4C

Year	Amount	Discounted at 4%	Discounted at 7%
2006	-$42,235,027	-$42,235,027	-$42,235,027
2007	-$42,235,027	-$40,610,603	-$39,471,988
2008	-$42,235,027	-$39,048,657	-$36,889,708
2009	-$42,235,027	-$37,546,785	-$34,476,363
2010	-$42,235,027	-$36,102,678	-$32,220,900
2011	-$42,235,027	-$34,714,114	-$30,112,991
2012	-$42,235,027	-$33,378,955	-$28,142,982
2013	-$42,235,027	-$32,095,149	-$26,301,852
2014	-$42,235,027	-$30,860,721	-$24,581,170
2015	-$42,235,027	-$29,673,770	-$22,973,056
2016	-$42,235,027	-$28,532,471	-$21,470,146
2017	-$42,235,027	-$27,435,068	-$20,065,557
2018	-$42,235,027	-$26,379,873	-$18,752,857
2019	-$42,235,027	-$25,365,263	-$17,526,035
2020	-$42,235,027	-$24,389,676	-$16,379,472
2021	-$42,235,027	-$23,451,611	-$15,307,917
2022	-$42,235,027	-$22,549,626	-$14,306,465
2023	-$42,235,027	-$21,682,333	-$13,370,528
2024	-$42,235,027	-$20,848,397	-$12,495,821
2025	-$42,235,027	-$20,046,536	-$11,678,337
2026	-$42,235,027	-$19,275,515	-$10,914,334
2027	-$42,235,027	-$18,534,149	-$10,200,312
2028	-$42,235,027	-$17,821,297	-$9,533,002
2029	-$42,235,027	-$17,135,863	-$8,909,347
2030	-$42,235,027	-$16,476,791	-$8,326,493
Total	-$1,055,875,679	-$686,190,930	-$526,642,660

Table D.4-50. Crashes Avoided ($2006)
Roadside Enforcement Scenario RE-5A

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$1,684,171,257	$1,684,171,257	$1,684,171,257
2007	$1,684,171,257	$1,619,395,439	$1,573,991,829
2008	$1,684,171,257	$1,557,110,999	$1,471,020,401
2009	$1,684,171,257	$1,497,222,115	$1,374,785,421
2010	$1,684,171,257	$1,439,636,649	$1,284,846,188
2011	$1,684,171,257	$1,384,266,009	$1,200,790,830
2012	$1,684,171,257	$1,331,025,008	$1,122,234,421
2013	$1,684,171,257	$1,279,831,739	$1,048,817,216
2014	$1,684,171,257	$1,230,607,441	$980,203,005
2015	$1,684,171,257	$1,183,276,386	$916,077,575
2016	$1,684,171,257	$1,137,765,755	$856,147,266
2017	$1,684,171,257	$1,094,005,534	$800,137,632
2018	$1,684,171,257	$1,051,928,398	$747,792,180
2019	$1,684,171,257	$1,011,469,614	$698,871,196
2020	$1,684,171,257	$972,566,936	$653,150,650
2021	$1,684,171,257	$935,160,516	$610,421,168
2022	$1,684,171,257	$899,192,803	$570,487,073
2023	$1,684,171,257	$864,608,465	$533,165,489
2024	$1,684,171,257	$831,354,293	$498,285,504
2025	$1,684,171,257	$799,379,128	$465,687,387
2026	$1,684,171,257	$768,633,777	$435,221,857
2027	$1,684,171,257	$739,070,939	$406,749,399
2028	$1,684,171,257	$710,645,134	$380,139,625
2029	$1,684,171,257	$683,312,629	$355,270,678
2030	$1,684,171,257	$657,031,374	$332,028,671
Total	$42,104,281,425	$27,362,668,336	$21,000,493,918

Table D.4-51. Transit Time Savings (including O&M and air and noise pollution) ($2006) Roadside Enforcement Scenario RE-5A

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$450,454,648	$450,454,648	$450,454,648
2007	$450,454,648	$433,129,469	$420,985,652
2008	$450,454,648	$416,470,643	$393,444,535
2009	$450,454,648	$400,452,542	$367,705,173
2010	$450,454,648	$385,050,521	$343,649,694
2011	$450,454,648	$370,240,885	$321,167,938
2012	$450,454,648	$356,000,851	$300,156,952
2013	$450,454,648	$342,308,511	$280,520,516
2014	$450,454,648	$329,142,799	$262,168,706
2015	$450,454,648	$316,483,460	$245,017,482
2016	$450,454,648	$304,311,020	$228,988,301
2017	$450,454,648	$292,606,750	$214,007,758
2018	$450,454,648	$281,352,644	$200,007,251
2019	$450,454,648	$270,531,388	$186,922,664
2020	$450,454,648	$260,126,335	$174,694,079
2021	$450,454,648	$250,121,476	$163,265,494
2022	$450,454,648	$240,501,419	$152,584,574
2023	$450,454,648	$231,251,365	$142,602,406
2024	$450,454,648	$222,357,081	$133,273,276
2025	$450,454,648	$213,804,886	$124,554,464
2026	$450,454,648	$205,581,621	$116,406,041
2027	$450,454,648	$197,674,636	$108,790,692
2028	$450,454,648	$190,071,765	$101,673,544
2029	$450,454,648	$182,761,313	$95,022,004
2030	$450,454,648	$175,732,031	$88,805,611
Total	$11,261,366,193	$7,318,520,058	$5,616,869,454

Table D.4-52. One-time Start-up Cost to States ($2006)
Roadside Enforcement Scenario RE-5A

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$694,918,309	$694,918,309	$694,918,309
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$0	$0	$0
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$0	$0	$0
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$0	$0	$0
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$0	$0	$0
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$694,918,309	$694,918,309	$694,918,309

Table D.4-53. Replacement Capital Costs to States ($2006)
Roadside Enforcement Scenario RE-5A

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$0	$0	$0
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$47,643,237	$39,159,268	$33,968,970
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$520,311,665	$351,503,918	$264,500,067
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$47,643,237	$26,454,598	$17,268,102
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$520,311,665	$237,463,452	$134,458,422
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$1,135,909,804	$654,581,236	$450,195,560

Table D.4-54. Increased Operating Costs to States ($2006)
Roadside Enforcement Scenario RE-5A

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$67,401,979	$67,401,979	$67,401,979
2007	$67,401,979	$64,809,595	$62,992,504
2008	$67,401,979	$62,316,919	$58,871,499
2009	$67,401,979	$59,920,114	$55,020,093
2010	$67,401,979	$57,615,494	$51,420,647
2011	$67,401,979	$55,399,514	$48,056,680
2012	$67,401,979	$53,268,763	$44,912,785
2013	$67,401,979	$51,219,965	$41,974,565
2014	$67,401,979	$49,249,966	$39,228,566
2015	$67,401,979	$47,355,737	$36,662,211
2016	$67,401,979	$45,534,362	$34,263,748
2017	$67,401,979	$43,783,040	$32,022,195
2018	$67,401,979	$42,099,077	$29,927,285
2019	$67,401,979	$40,479,882	$27,969,425
2020	$67,401,979	$38,922,964	$26,139,650
2021	$67,401,979	$37,425,926	$24,429,579
2022	$67,401,979	$35,986,468	$22,831,382
2023	$67,401,979	$34,602,373	$21,337,740
2024	$67,401,979	$33,271,512	$19,941,814
2025	$67,401,979	$31,991,839	$18,637,209
2026	$67,401,979	$30,761,383	$17,417,952
2027	$67,401,979	$29,578,253	$16,278,460
2028	$67,401,979	$28,440,628	$15,213,514
2029	$67,401,979	$27,346,758	$14,218,237
2030	$67,401,979	$26,294,960	$13,288,072
Total	$1,685,049,481	$1,095,077,472	$840,457,791

Table D.4-55. Increased Operating Costs to Carriers ($2006)
Roadside Enforcement Scenario RE-5A

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$0	$0	$0
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$0	$0	$0
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$0	$0	$0
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$0	$0	$0
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$0	$0	$0
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$0	$0	$0

Table D.4-56. Increased OOS Costs to Carriers ($2006)
Roadside Enforcement Scenario RE-5A

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$130,037,416	$130,037,416	$130,037,416
2007	$130,037,416	$125,035,977	$121,530,296
2008	$130,037,416	$120,226,901	$113,579,715
2009	$130,037,416	$115,602,790	$106,149,267
2010	$130,037,416	$111,156,528	$99,204,922
2011	$130,037,416	$106,881,277	$92,714,881
2012	$130,037,416	$102,770,459	$86,649,421
2013	$130,037,416	$98,817,749	$80,980,767
2014	$130,037,416	$95,017,066	$75,682,960
2015	$130,037,416	$91,362,564	$70,731,738
2016	$130,037,416	$87,848,619	$66,104,429
2017	$130,037,416	$84,469,826	$61,779,840
2018	$130,037,416	$81,220,987	$57,738,168
2019	$130,037,416	$78,097,102	$53,960,905
2020	$130,037,416	$75,093,368	$50,430,752
2021	$130,037,416	$72,205,161	$47,131,544
2022	$130,037,416	$69,428,040	$44,048,172
2023	$130,037,416	$66,757,730	$41,166,516
2024	$130,037,416	$64,190,125	$38,473,379
2025	$130,037,416	$61,721,274	$35,956,429
2026	$130,037,416	$59,347,379	$33,604,139
2027	$130,037,416	$57,064,788	$31,405,738
2028	$130,037,416	$54,869,988	$29,351,157
2029	$130,037,416	$52,759,604	$27,430,988
2030	$130,037,416	$50,730,389	$25,636,437
Total	$3,250,935,406	$2,112,713,109	$1,621,479,976

Table D.4-57. Crashes Avoided ($2006)
Roadside Enforcement Scenario RE-5B

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$1,400,043,186	$1,400,043,186	$1,400,043,186
2007	$1,400,043,186	$1,346,195,371	$1,308,451,576
2008	$1,400,043,186	$1,294,418,626	$1,222,851,940
2009	$1,400,043,186	$1,244,633,294	$1,142,852,280
2010	$1,400,043,186	$1,196,762,783	$1,068,086,243
2011	$1,400,043,186	$1,150,733,445	$998,211,442
2012	$1,400,043,186	$1,106,474,467	$932,907,890
2013	$1,400,043,186	$1,063,917,756	$871,876,533
2014	$1,400,043,186	$1,022,997,843	$814,837,881
2015	$1,400,043,186	$983,651,772	$761,530,730
2016	$1,400,043,186	$945,819,011	$711,710,963
2017	$1,400,043,186	$909,441,357	$665,150,432
2018	$1,400,043,186	$874,462,843	$621,635,918
2019	$1,400,043,186	$840,829,657	$580,968,148
2020	$1,400,043,186	$808,490,055	$542,960,886
2021	$1,400,043,186	$777,394,283	$507,440,080
2022	$1,400,043,186	$747,494,503	$474,243,066
2023	$1,400,043,186	$718,744,715	$443,217,818
2024	$1,400,043,186	$691,100,687	$414,222,260
2025	$1,400,043,186	$664,519,892	$387,123,608
2026	$1,400,043,186	$638,961,434	$361,797,764
2027	$1,400,043,186	$614,385,994	$338,128,751
2028	$1,400,043,186	$590,755,764	$316,008,179
2029	$1,400,043,186	$568,034,388	$295,334,747
2030	$1,400,043,186	$546,186,912	$276,013,782
Total	$35,001,079,650	$22,746,450,039	$17,457,606,102

Table D.4-58. Transit Time Savings (including O&M and air and noise pollution) ($2006)
Roadside Enforcement Scenario RE-5B

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$450,454,648	$450,454,648	$450,454,648
2007	$450,454,648	$433,129,469	$420,985,652
2008	$450,454,648	$416,470,643	$393,444,535
2009	$450,454,648	$400,452,542	$367,705,173
2010	$450,454,648	$385,050,521	$343,649,694
2011	$450,454,648	$370,240,885	$321,167,938
2012	$450,454,648	$356,000,851	$300,156,952
2013	$450,454,648	$342,308,511	$280,520,516
2014	$450,454,648	$329,142,799	$262,168,706
2015	$450,454,648	$316,483,460	$245,017,482
2016	$450,454,648	$304,311,020	$228,988,301
2017	$450,454,648	$292,606,750	$214,007,758
2018	$450,454,648	$281,352,644	$200,007,251
2019	$450,454,648	$270,531,388	$186,922,664
2020	$450,454,648	$260,126,335	$174,694,079
2021	$450,454,648	$250,121,476	$163,265,494
2022	$450,454,648	$240,501,419	$152,584,574
2023	$450,454,648	$231,251,365	$142,602,406
2024	$450,454,648	$222,357,081	$133,273,276
2025	$450,454,648	$213,804,886	$124,554,464
2026	$450,454,648	$205,581,621	$116,406,041
2027	$450,454,648	$197,674,636	$108,790,692
2028	$450,454,648	$190,071,765	$101,673,544
2029	$450,454,648	$182,761,313	$95,022,004
2030	$450,454,648	$175,732,031	$88,805,611
Total	$11,261,366,193	$7,318,520,058	$5,616,869,454

Table D.4-59. One-time Start-up Cost to States ($2006)
Roadside Enforcement Scenario RE-5B

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$694,918,309	$694,918,309	$694,918,309
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$0	$0	$0
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$0	$0	$0
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$0	$0	$0
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$0	$0	$0
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$694,918,309	$694,918,309	$694,918,309

Table D.4-60. Replacement Capital Costs to States ($2006)
Roadside Enforcement Scenario RE-5B

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$0	$0	$0
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$47,643,237	$39,159,268	$33,968,970
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$520,311,665	$351,503,918	$264,500,067
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$47,643,237	$26,454,598	$17,268,102
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$520,311,665	$237,463,452	$134,458,422
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$1,135,909,804	$654,581,236	$450,195,560

Table D.4-61. Increased Operating Costs to States ($2006)
Roadside Enforcement Scenario RE-5B

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$67,401,979	$67,401,979	$67,401,979
2007	$67,401,979	$64,809,595	$62,992,504
2008	$67,401,979	$62,316,919	$58,871,499
2009	$67,401,979	$59,920,114	$55,020,093
2010	$67,401,979	$57,615,494	$51,420,647
2011	$67,401,979	$55,399,514	$48,056,680
2012	$67,401,979	$53,268,763	$44,912,785
2013	$67,401,979	$51,219,965	$41,974,565
2014	$67,401,979	$49,249,966	$39,228,566
2015	$67,401,979	$47,355,737	$36,662,211
2016	$67,401,979	$45,534,362	$34,263,748
2017	$67,401,979	$43,783,040	$32,022,195
2018	$67,401,979	$42,099,077	$29,927,285
2019	$67,401,979	$40,479,882	$27,969,425
2020	$67,401,979	$38,922,964	$26,139,650
2021	$67,401,979	$37,425,926	$24,429,579
2022	$67,401,979	$35,986,468	$22,831,382
2023	$67,401,979	$34,602,373	$21,337,740
2024	$67,401,979	$33,271,512	$19,941,814
2025	$67,401,979	$31,991,839	$18,637,209
2026	$67,401,979	$30,761,383	$17,417,952
2027	$67,401,979	$29,578,253	$16,278,460
2028	$67,401,979	$28,440,628	$15,213,514
2029	$67,401,979	$27,346,758	$14,218,237
2030	$67,401,979	$26,294,960	$13,288,072
Total	$1,685,049,481	$1,095,077,472	$840,457,791

Table D.4-62. Increased Operating Costs to Carriers ($2006)
Roadside Enforcement Scenario RE-5B

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$0	$0	$0
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$0	$0	$0
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$0	$0	$0
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$0	$0	$0
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$0	$0	$0
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$0	$0	$0

Table D.4-63. Increased OOS Costs to Carriers ($2006)
Roadside Enforcement Scenario RE-5B

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$87,929,103	$87,929,103	$87,929,103
2007	$87,929,103	$84,547,215	$82,176,732
2008	$87,929,103	$81,295,399	$76,800,684
2009	$87,929,103	$78,168,653	$71,776,340
2010	$87,929,103	$75,162,166	$67,080,692
2011	$87,929,103	$72,271,313	$62,692,235
2012	$87,929,103	$69,491,648	$58,590,874
2013	$87,929,103	$66,818,892	$54,757,826
2014	$87,929,103	$64,248,935	$51,175,539
2015	$87,929,103	$61,777,822	$47,827,606
2016	$87,929,103	$59,401,752	$44,698,697
2017	$87,929,103	$57,117,069	$41,774,484
2018	$87,929,103	$54,920,259	$39,041,573
2019	$87,929,103	$52,807,941	$36,487,452
2020	$87,929,103	$50,776,866	$34,100,422
2021	$87,929,103	$48,823,910	$31,869,554
2022	$87,929,103	$46,946,067	$29,784,629
2023	$87,929,103	$45,140,449	$27,836,102
2024	$87,929,103	$43,404,278	$26,015,049
2025	$87,929,103	$41,734,883	$24,313,130
2026	$87,929,103	$40,129,695	$22,722,551
2027	$87,929,103	$38,586,245	$21,236,029
2028	$87,929,103	$37,102,159	$19,846,756
2029	$87,929,103	$35,675,153	$18,548,370
2030	$87,929,103	$34,303,031	$17,334,926
Total	$2,198,227,583	$1,428,580,901	$1,096,417,358

Table D.4-64. Crashes Avoided ($2006)
Roadside Enforcement Scenario RE-5C

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$1,149,961,577	$1,149,961,577	$1,149,961,577
2007	$1,149,961,577	$1,105,732,286	$1,074,730,446
2008	$1,149,961,577	$1,063,204,121	$1,004,420,977
2009	$1,149,961,577	$1,022,311,655	$938,711,194
2010	$1,149,961,577	$982,991,976	$877,300,181
2011	$1,149,961,577	$945,184,592	$819,906,711
2012	$1,149,961,577	$908,831,338	$766,267,955
2013	$1,149,961,577	$873,876,287	$716,138,275
2014	$1,149,961,577	$840,265,660	$669,288,108
2015	$1,149,961,577	$807,947,750	$625,502,904
2016	$1,149,961,577	$776,872,837	$584,582,154
2017	$1,149,961,577	$746,993,112	$546,338,461
2018	$1,149,961,577	$718,262,608	$510,596,693
2019	$1,149,961,577	$690,637,123	$477,193,171
2020	$1,149,961,577	$664,074,157	$445,974,926
2021	$1,149,961,577	$638,532,843	$416,798,996
2022	$1,149,961,577	$613,973,888	$389,531,772
2023	$1,149,961,577	$590,359,507	$364,048,385
2024	$1,149,961,577	$567,653,372	$340,232,136
2025	$1,149,961,577	$545,820,550	$317,973,959
2026	$1,149,961,577	$524,827,452	$297,171,924
2027	$1,149,961,577	$504,641,781	$277,730,770
2028	$1,149,961,577	$485,232,482	$259,561,467
2029	$1,149,961,577	$466,569,694	$242,580,811
2030	$1,149,961,577	$448,624,706	$226,711,038
Total	$28,749,039,425	$18,683,383,356	$14,339,254,992

Table D.4-65. Transit Time Savings (including O&M and air and noise pollution) ($2006)
Roadside Enforcement Scenario RE-5C

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$450,454,648	$450,454,648	$450,454,648
2007	$450,454,648	$433,129,469	$420,985,652
2008	$450,454,648	$416,470,643	$393,444,535
2009	$450,454,648	$400,452,542	$367,705,173
2010	$450,454,648	$385,050,521	$343,649,694
2011	$450,454,648	$370,240,885	$321,167,938
2012	$450,454,648	$356,000,851	$300,156,952
2013	$450,454,648	$342,308,511	$280,520,516
2014	$450,454,648	$329,142,799	$262,168,706
2015	$450,454,648	$316,483,460	$245,017,482
2016	$450,454,648	$304,311,020	$228,988,301
2017	$450,454,648	$292,606,750	$214,007,758
2018	$450,454,648	$281,352,644	$200,007,251
2019	$450,454,648	$270,531,388	$186,922,664
2020	$450,454,648	$260,126,335	$174,694,079
2021	$450,454,648	$250,121,476	$163,265,494
2022	$450,454,648	$240,501,419	$152,584,574
2023	$450,454,648	$231,251,365	$142,602,406
2024	$450,454,648	$222,357,081	$133,273,276
2025	$450,454,648	$213,804,886	$124,554,464
2026	$450,454,648	$205,581,621	$116,406,041
2027	$450,454,648	$197,674,636	$108,790,692
2028	$450,454,648	$190,071,765	$101,673,544
2029	$450,454,648	$182,761,313	$95,022,004
2030	$450,454,648	$175,732,031	$88,805,611
Total	$11,261,366,193	$7,318,520,058	$5,616,869,454

Table D.4-66. One-time Start-up Cost to States ($2006)
Roadside Enforcement Scenario RE-5C

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$694,918,309	$694,918,309	$694,918,309
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$0	$0	$0
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$0	$0	$0
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$0	$0	$0
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$0	$0	$0
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$694,918,309	$694,918,309	$694,918,309

Table D.4-67. Replacement Capital Costs to States ($2006)
Roadside Enforcement Scenario RE-5C

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$0	$0	$0
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$47,643,237	$39,159,268	$33,968,970
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$520,311,665	$351,503,918	$264,500,067
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$47,643,237	$26,454,598	$17,268,102
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$520,311,665	$237,463,452	$134,458,422
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$1,135,909,804	$654,581,236	$450,195,560

Table D.4-68. Increased Operating Costs to States ($2006)
Roadside Enforcement Scenario RE-5C

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$67,401,979	$67,401,979	$67,401,979
2007	$67,401,979	$64,809,595	$62,992,504
2008	$67,401,979	$62,316,919	$58,871,499
2009	$67,401,979	$59,920,114	$55,020,093
2010	$67,401,979	$57,615,494	$51,420,647
2011	$67,401,979	$55,399,514	$48,056,680
2012	$67,401,979	$53,268,763	$44,912,785
2013	$67,401,979	$51,219,965	$41,974,565
2014	$67,401,979	$49,249,966	$39,228,566
2015	$67,401,979	$47,355,737	$36,662,211
2016	$67,401,979	$45,534,362	$34,263,748
2017	$67,401,979	$43,783,040	$32,022,195
2018	$67,401,979	$42,099,077	$29,927,285
2019	$67,401,979	$40,479,882	$27,969,425
2020	$67,401,979	$38,922,964	$26,139,650
2021	$67,401,979	$37,425,926	$24,429,579
2022	$67,401,979	$35,986,468	$22,831,382
2023	$67,401,979	$34,602,373	$21,337,740
2024	$67,401,979	$33,271,512	$19,941,814
2025	$67,401,979	$31,991,839	$18,637,209
2026	$67,401,979	$30,761,383	$17,417,952
2027	$67,401,979	$29,578,253	$16,278,460
2028	$67,401,979	$28,440,628	$15,213,514
2029	$67,401,979	$27,346,758	$14,218,237
2030	$67,401,979	$26,294,960	$13,288,072
Total	$1,685,049,481	$1,095,077,472	$840,457,791

Table D.4-69. Increased Operating Costs to Carriers ($2006)
Roadside Enforcement Scenario RE-5C

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$0	$0	$0
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$0	$0	$0
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$0	$0	$0
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$0	$0	$0
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$0	$0	$0
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$0	$0	$0

Table D.4-70. Increased OOS Costs to Carriers ($2006)
Roadside Enforcement Scenario RE-5C

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$56,347,869	$56,347,869	$56,347,869
2007	$56,347,869	$54,180,643	$52,661,559
2008	$56,347,869	$52,096,772	$49,216,411
2009	$56,347,869	$50,093,050	$45,996,646
2010	$56,347,869	$48,166,394	$42,987,519
2011	$56,347,869	$46,313,841	$40,175,252
2012	$56,347,869	$44,532,539	$37,546,964
2013	$56,347,869	$42,819,749	$35,090,621
2014	$56,347,869	$41,172,836	$32,794,973
2015	$56,347,869	$39,589,265	$30,649,507
2016	$56,347,869	$38,066,601	$28,644,399
2017	$56,347,869	$36,602,501	$26,770,466
2018	$56,347,869	$35,194,712	$25,019,128
2019	$56,347,869	$33,841,070	$23,382,362
2020	$56,347,869	$32,539,490	$21,852,675
2021	$56,347,869	$31,287,971	$20,423,061
2022	$56,347,869	$30,084,588	$19,086,973
2023	$56,347,869	$28,927,488	$17,838,292
2024	$56,347,869	$27,814,893	$16,671,301
2025	$56,347,869	$26,745,089	$15,580,655
2026	$56,347,869	$25,716,432	$14,561,360
2027	$56,347,869	$24,727,338	$13,608,748
2028	$56,347,869	$23,776,287	$12,718,456
2029	$56,347,869	$22,861,814	$11,886,407
2030	$56,347,869	$21,982,514	$11,108,792
Total	$1,408,696,715	$915,481,745	$702,620,394

Table D.4-71. Operating Cost Savings to States ($2006)
Electronic Credentialing

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$136,463,482	$136,463,482	$136,463,482
2007	$136,463,482	$131,214,887	$127,535,965
2008	$136,463,482	$126,168,160	$119,192,490
2009	$136,463,482	$121,315,539	$111,394,851
2010	$136,463,482	$116,649,556	$104,107,337
2011	$136,463,482	$112,163,035	$97,296,577
2012	$136,463,482	$107,849,072	$90,931,380
2013	$136,463,482	$103,701,031	$84,982,598
2014	$136,463,482	$99,712,530	$79,422,989
2015	$136,463,482	$95,877,432	$74,227,093
2016	$136,463,482	$92,189,839	$69,371,114
2017	$136,463,482	$88,644,076	$64,832,817
2018	$136,463,482	$85,234,688	$60,591,418
2019	$136,463,482	$81,956,431	$56,627,493
2020	$136,463,482	$78,804,261	$52,922,891
2021	$136,463,482	$75,773,327	$49,460,646
2022	$136,463,482	$72,858,969	$46,224,903
2023	$136,463,482	$70,056,701	$43,200,844
2024	$136,463,482	$67,362,212	$40,374,620
2025	$136,463,482	$64,771,358	$37,733,290
2026	$136,463,482	$62,280,152	$35,264,757
2027	$136,463,482	$59,884,761	$32,957,717
2028	$136,463,482	$57,581,501	$30,801,604
2029	$136,463,482	$55,366,828	$28,786,546
2030	$136,463,482	$53,237,335	$26,903,314
Total	$3,411,587,051	$2,217,117,163	$1,701,608,736

Table D.4-72. Operating Cost Savings to Carriers ($2006)
Electronic Credentialing

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$50,748,253	$50,748,253	$50,748,253
2007	$50,748,253	$48,796,397	$47,428,274
2008	$50,748,253	$46,919,613	$44,325,490
2009	$50,748,253	$45,115,012	$41,425,691
2010	$50,748,253	$43,379,819	$38,715,599
2011	$50,748,253	$41,711,365	$36,182,803
2012	$50,748,253	$40,107,082	$33,815,704
2013	$50,748,253	$38,564,502	$31,603,462
2014	$50,748,253	$37,081,251	$29,535,945
2015	$50,748,253	$35,655,049	$27,603,687
2016	$50,748,253	$34,283,701	$25,797,839
2017	$50,748,253	$32,965,098	$24,110,129
2018	$50,748,253	$31,697,209	$22,532,831
2019	$50,748,253	$30,478,086	$21,058,721
2020	$50,748,253	$29,305,852	$19,681,048
2021	$50,748,253	$28,178,704	$18,393,502
2022	$50,748,253	$27,094,907	$17,190,189
2023	$50,748,253	$26,052,795	$16,065,597
2024	$50,748,253	$25,050,765	$15,014,577
2025	$50,748,253	$24,087,274	$14,032,315
2026	$50,748,253	$23,160,840	$13,114,313
2027	$50,748,253	$22,270,039	$12,256,367
2028	$50,748,253	$21,413,499	$11,454,549
2029	$50,748,253	$20,589,903	$10,705,186
2030	$50,748,253	$19,797,983	$10,004,847
Total	$1,268,706,328	$824,504,998	$632,796,918

Table D.4-73. Inventory Cost Savings to Carriers ($2006)
Electronic Credentialing

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$472,023,244	$472,023,244	$472,023,244
2007	$472,023,244	$453,868,504	$441,143,219
2008	$472,023,244	$436,412,023	$412,283,382
2009	$472,023,244	$419,626,945	$385,311,572
2010	$472,023,244	$403,487,448	$360,104,273
2011	$472,023,244	$387,968,700	$336,546,050
2012	$472,023,244	$373,046,826	$314,529,018
2013	$472,023,244	$358,698,872	$293,952,354
2014	$472,023,244	$344,902,761	$274,721,826
2015	$472,023,244	$331,637,270	$256,749,370
2016	$472,023,244	$318,881,991	$239,952,682
2017	$472,023,244	$306,617,299	$224,254,843
2018	$472,023,244	$294,824,326	$209,583,966
2019	$472,023,244	$283,484,929	$195,872,865
2020	$472,023,244	$272,581,662	$183,058,752
2021	$472,023,244	$262,097,752	$171,082,946
2022	$472,023,244	$252,017,069	$159,890,604
2023	$472,023,244	$242,324,105	$149,430,471
2024	$472,023,244	$233,003,947	$139,654,646
2025	$472,023,244	$224,042,257	$130,518,360
2026	$472,023,244	$215,425,247	$121,979,776
2027	$472,023,244	$207,139,661	$113,999,791
2028	$472,023,244	$199,172,751	$106,541,861
2029	$472,023,244	$191,512,260	$99,571,832
2030	$472,023,244	$184,146,404	$93,057,787
Total	$11,800,581,109	$7,668,944,253	$5,885,815,490

Table D.4-74. One-time Start-up Cost to States ($2006)
Electronic Credentialing

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$47,336,356	$47,336,356	$47,336,356
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$0	$0	$0
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$0	$0	$0
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$0	$0	$0
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$0	$0	$0
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$47,336,356	$47,336,356	$47,336,356

Table D.4-75. Replacement Capital Costs to States ($2006)
Electronic Credentialing

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$0	$0	$0
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$44,729,275	$36,764,204	$31,891,355
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$44,729,275	$30,217,495	$22,738,095
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$44,729,275	$24,836,579	$16,211,948
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$44,729,275	$20,413,857	$11,558,895
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$178,917,100	$112,232,135	$82,400,292

Table D.4-76. One-time Start-up Cost to Carriers ($2006)
Electronic Credentialing

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$447,982,454	$447,982,454	$447,982,454
2007	$0	$0	$0
2008	$0	$0	$0
2009	$0	$0	$0
2010	$0	$0	$0
2011	$0	$0	$0
2012	$0	$0	$0
2013	$0	$0	$0
2014	$0	$0	$0
2015	$0	$0	$0
2016	$0	$0	$0
2017	$0	$0	$0
2018	$0	$0	$0
2019	$0	$0	$0
2020	$0	$0	$0
2021	$0	$0	$0
2022	$0	$0	$0
2023	$0	$0	$0
2024	$0	$0	$0
2025	$0	$0	$0
2026	$0	$0	$0
2027	$0	$0	$0
2028	$0	$0	$0
2029	$0	$0	$0
2030	$0	$0	$0
Total	$447,982,454	$447,982,454	$447,982,454

Table D.4-77. Operating Costs to Carriers ($2006)
Electronic Credentialing

Year	Amount	Discounted at 4%	Discounted at 7%
2006	$203,628,388	$203,628,388	$203,628,388
2007	$203,628,388	$195,796,527	$190,306,905
2008	$203,628,388	$188,265,891	$177,856,920
2009	$203,628,388	$181,024,895	$166,221,421
2010	$203,628,388	$174,062,399	$155,347,122
2011	$203,628,388	$167,367,692	$145,184,226
2012	$203,628,388	$160,930,473	$135,686,193
2013	$203,628,388	$154,740,839	$126,809,526
2014	$203,628,388	$148,789,269	$118,513,576
2015	$203,628,388	$143,066,604	$110,760,351
2016	$203,628,388	$137,564,043	$103,514,347
2017	$203,628,388	$132,273,118	$96,742,380
2018	$203,628,388	$127,185,690	$90,413,440
2019	$203,628,388	$122,293,933	$84,498,542
2020	$203,628,388	$117,590,320	$78,970,600
2021	$203,628,388	$113,067,616	$73,804,299
2022	$203,628,388	$108,718,861	$68,975,980
2023	$203,628,388	$104,537,366	$64,463,533
2024	$203,628,388	$100,516,699	$60,246,292
2025	$203,628,388	$96,650,672	$56,304,946
2026	$203,628,388	$92,933,338	$52,621,445
2027	$203,628,388	$89,358,979	$49,178,921
2028	$203,628,388	$85,922,095	$45,961,608
2029	$203,628,388	$82,617,399	$42,954,774
2030	$203,628,388	$79,439,807	$40,144,648
Total	$5,090,709,700	$3,308,342,914	$2,539,110,382

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APPENDIX D.5
ELECTRONIC SCREENING DEPLOYMENT ASSUMPTIONS

One of the goals of the CVISN National BCA was to compare costs and benefits at a national (societal) level. This was in keeping with the corresponding goals and objectives of the cost analysis and the safety analysis. For simplicity, the BCA assumed a hypothetical instantaneous, full deployment of CVISN electronic screening (ES) and safety information exchange (SIE) technologies at all weigh and inspection stations nationwide, with commensurate costs and benefits applicable to the population of all large trucks in the U.S. That is, because the safety (crash avoidance) analysis began from the crashes, injuries, and fatalities occurring annually in the population of all trucks, for the sake of internal consistency the BCA reflected the economic effects on the same population.

At present, the market penetration of ES is at an early stage, with relatively few trucks carrying transponders. To model a full nationwide deployment, the analysts might have assumed the expansion of the Norpass (taxpayer-funded) program alone, the expansion of the HELP/PrePass (user fee) program alone, some combination of the two, or some completely different mechanism for achieving the benefits of ES. The assumption used in the CVISN National BCA was motivated by the need to project what would happen when all states and all trucks adopt ES. The assumption was that carriers will do what makes most sense to them economically, and that if CVISN is in fact deployed nationally, market forces will dictate that eventually a lowest cost alternative will be available to all trucking companies.

To make the best use of current actual cost and benefit data, as shown in Section 8 (Table 8-7) of the Final Report, the assumption for expansion to nationwide deployment included a one-time Norpass transponder purchase fee that was applied to all carriers with fewer than 3,000 trucks operating in PrePass states and carriers operating exclusively in Norpass states. A weighted average 2006 PrePass monthly rate of $8.55 per transponder was applied to remaining carriers. This represents a combination of the Norpass and PrePass business models being applied to all trucks, with the assumption being that larger carriers tend to gravitate toward PrePass. According to HELP/PrePass (personal communication, July 2008), approximately 42 percent of all enrolled trucks belong to carriers operating more than 1000 power units. However, it is noted that PrePass enrollment is fairly evenly distributed among carriers that operate fewer power units.

Due to a lack of data on the geographic areas in which trucks travel, the assumption that the PrePass business model is more attractive to large carriers is based on the assignment of the national yearly average of 15 roadside weight checks per truck to each truck in the nationwide fleet (described below). As such this assumption does not reflect the large population of commercial vehicles that travel only locally, and never approach a fixed-site weigh station. Although these vehicles are subject to federal safety regulations, the likelihood that the carriers operating these vehicles will achieve a benefit from enrolling in a weigh station bypass program is low.

When looked at nationally, if there are 8.5 million large trucks that together are weighed 130 million times, then each truck has an average of 15 weight checks per year. By contrast, the average PrePass participating truck receives 11 or 12 bypass signals (green lights on the in-cab transponder) in a typical month, which is the equivalent of 135 bypasses per truck per year. Also, at PrePass equipped sites, an average of 35 percent of trucks approaching the station have PrePass transponders, ranging up to 50 percent in some instances (personal communication with HELP/PrePass, July 2008). This suggests that those carriers whose routes entail many more than the national average number of weight check stops are seeing an economic benefit from ES, but that this population is not representative of all trucks in the U.S.

Acknowledging that most trucks under 26,000 pounds spend the majority of their travel miles away from interstate highways, whereas most truck-related injuries and fatalities occur on interstate highways (personal communication with ATRI, July 2008), future analysts might take into consideration that the trucks most likely to benefit from CVISN technologies are only a subset of the whole population of trucks nationwide. This would require a different analysis of the cost and safety aspects of CVO, in effect (a) choosing a narrower range of carriers and vehicles affected by CVISN technology deployment, and (b) selecting for study a smaller proportion of the historical truck-related crashes, injuries, and fatalities of the kind that CVISN is expected to reduce in the future.

APPENDIX E.
CONTACTS WITH STATES IN DEVELOPING EVALUATION STRATEGY (OCTOBER 2004)

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Appendix E
Contacts with States in Developing Evaluation Strategy (October 2004)

As part of the National Evaluation strategy development process, an informal survey was conducted, inviting state CVISN program managers to rank-order a set of candidate evaluation options and identify ideas or areas in which each state might be able to participate in the evaluation. An options paper was prepared and distributed on October 4, 2004 (Appendix E.1). Results were compiled and documented in an internal memorandum to the states on October 18, 2004 (Appendix E.2). Twenty of the CVISN states returned the survey reply form. A simple scoring algorithm was used to establish a composite ranking, as shown in Table 3-1 of the main National Evaluation report (Volume 1).

The objective receiving the highest score was Homeland Security Applications. While CVISN may provide useful information to individuals concerned about homeland security, this topic is not a specified objective of the CVISN National Evaluation. If the National Evaluation yields incidental insights into how CVISN might be used for homeland security, this information will be communicated outside the context of the National Evaluation.

The three Safety objectives and the one Benefit-Cost objective related to state ROI analysis were also highly rated. Based on these inputs, the main focus of the research will be on measuring improvements in safety, benefit-cost ratios, and customer satisfaction.

Table E-1 lists the states that indicated an interest in participating in different aspects of the National Evaluation, as of October 2004.

Contacts with Individual States. To follow up on responses to the October 2004 ranking survey, visits and phone contacts were made with various Commercial Vehicle Information Systems and Networks (CVISN) state program managers. The purpose of these contacts was to learn what kinds of information products the states would find most useful from a National Evaluation, and to explore opportunities for collaborative research and evaluation in states testing or deploying various CVISN technologies. Table E-2 shows the states that have been contacted to date. A summary of each contact is presented below. Other states will be involved, directly or indirectly, in the National Evaluation. The states listed in Table E-2 were chosen for initial contacts in part because of their responses to the October 2004 prioritization survey.

New York State Department of Transportation. New York operates the One-Stop Credentialing and Registration (OSCAR) system, built in part with an I-95 Corridor Coalition grant. This system now handles 10 to 15% of the transactions and is expected to grow. The goal is for all carriers eventually to use OSCAR for end-to-end credentialing. Three agencies are involved in credentialing: International Registration Plan (IRP) is done by Department of Motor Vehicles (using a CACI system); International Fuel Tax Agreement (IFTA) is done by the Department of Tax and Finance; and Single-State Registration System (SSRS) permits are done by New York State Department of Transportation (NYSDOT). The New York State Police and Thruway Authority were also involved in the credentialing program.

New York State has never had fixed-site weigh and inspection stations. Inspectors set up at temporary locations, using portable scale systems. New York's current approach to screening and safety is based on the reality that too few transponders are deployed, so the state must have an alternate way to identify trucks. The state has a Federal grant to evaluate license plate readers and related computer systems (e.g., fuzzy logic). One goal is to centralize data and mine it for enforcement and trend analysis, so that the "perennially bad truck" can be more likely to be caught. The state also intends to use weigh-in-motion (WIM) scales as part of the screening and license plate reader (LPR) system. About 100,000 CV inspections are done per year in New York State.

New York would find it useful to learn why more states are not sharing their data nationally (e.g., with SAFER Data Mailbox); why "USDOT Number" is not a required field in the IRP system; and what incentives would get carriers to get transponders.

As for research opportunities, New York State is constructing a border crossing inspection site adjacent to the Champlain, New York, port of entry that processes trucks arriving from Canada. When the station is finished (around 2008), NYSDOT expects to receive data from U.S. Customs on incoming carriers and vehicles. CVISN technologies will be used to integrate data with a customer service and credentialing center.

Table E-1. Significant Suggestions and Offers for State Participation

Objective	Proposed State Participation
(Safety) Evaluate alternative inspection selection algorithms.	MO Has a SafeStat system using an algorithm process to rank INTRAstate carriers based on performance. Used to target carriers for compliance reviews. UT Could assist by utilizing different algorithms and providing data on high-risk carriers (accident, OSS, etc.). NY Certain states (e.g., NY and MI) are "probable cause" states. NY is willing to work with evaluation team that could provide sufficient evidence to link carrier-based algorithms to individual vehicles – and develop a defensible algorithm for intrastate operators.
(Safety) Evaluate the effectiveness of innovative uses of CVISN for roadside enforcement.	KY Deploying infrared cameras, radiation detectors, and license plate readers at London Station. NY Has several innovative technologies tested or to be tested, including mobile screening tools and license plate readers. All screening is done at non-fixed sites. OK Expand to address identification/screening of non-transponder equipped vehicles using manual queries via CVIEW to run plate or DOT number through algorithms at fixed scales. Involves use of plate readers and bar code technologies.
(Safety) Estimate potential reductions in crashes, injuries, and fatalities nationwide.	
(Cust Satis) Characterize motor carrier satisfaction and factors affecting participation.	
Survey report on motor carrier attitudes and factors affecting participation in CVISN – based on national sample of carriers	
Multiple survey reports on motor carriers participating in selected states	WI Willing to share results from in-state surveys related to oversize/overweight (OS/OW) permitting system. Also willing to collaborate on third survey following final automation piece. Many other states indicated a willingness to participate in these types of surveys.
(Cust Satis) Characterize driver satisfaction.	WI Interested if focus is on owner-operators.
(Cust Satis) Characterize motor carrier inspector satisfaction.	
(Ben/Cost) Tool for states to estimate their ROI.	
(Ben/Cost) Compare states at various stages of deployment.	
(Ben/Cost) Overall costs of deploying CVISN nationwide vs. overall benefits.	
(Home Sec) Innovative applications of CVISN for homeland security	NY Leading the cargo seal tracking project on East Coast. Has implications for using CVISN capabilities to support security applications. WA Currently in the development stage of a HazMat tracking program. Results from an independent evaluation may be helpful when it is completed.

Source: Twenty state CVISN program managers responding to written survey between October 4 and October 15, 2004.

Table E-2. Contacts with Selected CVISN States (November 2004 to February 2005)

State	Date(s) of Contact	Person(s) Contacted
New York	November 18, 2004	Don Baker, Rick McDonough, Bill Leonard
Wisconsin	December 17, 2004	Susan Kavulich, Kathleen Nichols
Kansas	December 17, 2004	Chris Huffman, Leo Luttjohann
Utah	December 20, 2004 January 13, 2005	Sam Sherman, Carrie Silcox
Kentucky	December 21, 2004	David Jackson
Oklahoma	December 28, 2004	Valinda Gorder

Wisconsin Department of Transportation. The Wisconsin DOT oversize/overweight (OS/OW) electronic permitting program shares some data with the state's IRP credentialing program, but the two functions are separate. The motor carrier industry in Wisconsin supported increased fees to fund automation for the OS/OW permitting system. The electronic permitting system allowed the state to clear a 27-day backlog and reduce turnaround to a goal of 4 hours for a single trip permit. The permitting system automatically reviews and decides on the routing of an OS/OW vehicle on the state's roads and bridges.

The state licensing and permitting bureau estimates that, once the 50% mark of participation or volume is reached, then the state bureau can reduce 2 FTEs from the administrative staff through normal attrition. One purpose of automating was to make the necessary state budget cuts workable. The system was designed to offer economic benefits to industry, not as a net savings to the state, and not intended that the state would realize quick economic payback for its start-up investment.

Users responding to a market survey for the permitting system estimated that it costs a motor carrier $600 to $800 per day to wait on a permit. The trucks are "tiny warehouses on axles."

Wisconsin conducted a motor carrier survey in 1998 regarding the OS/OW permitting system and replicated the survey in 2003.

Kansas Department of Transportation and Department of Revenue. The state operates a single home-grown web portal, through Access Kansas, available 24/7. The state has observed a huge benefit in customer satisfaction, and has benefited from getting state agencies to work together. The principal successes have also been in the areas that are the toughest to quantify. The state has found that fixed-site weigh and inspection stations are difficult to operate and keep staffed. A proof-of-concept on a virtual weigh station is in the works.

Kansas would be interested in learning whether any other states are using a single identifier or mechanism to combine all registrations into one account per motor carrier. Such a function would allow the state to track a carrier across different licensing and credentialing systems.

Utah Department of Transportation. Utah has a centralized accident reporting system, with a web interface for traffic and transportation officials to run queries and look at data over time. Utah is a Norpass state that is not using safety data in ES as yet. Norpass screens on credentials status and overweight status. The state has not had great success in getting carriers to enroll in the transponder program.

One inspection method used by Utah inspectors is to use binoculars to read the U.S. Department of Transportation (USDOT) numbers of trucks on the entrance ramps to weigh stations at ports of entry into the state, and then the inspectors query the ISS score for selected vehicles. The state would be interested in camera-based approaches to see and identify vehicles earlier as they approach weigh stations. Utah cooperates closely with neighboring states such as Colorado and Arizona on enforcement at ports of entry.

Utah would find it useful to learn what motivates carriers to enroll in transponder and electronic credentialing (EC) programs.

Kentucky Transportation Cabinet. Kentucky tried a camera/WIM system on a route known to be used by CVs to bypass a fixed-site weigh station, but the system has not proven effective because of the low resolution. Mark Bell of Kentucky is working on a pilot study of ISS-D, using an algorithm for driver data that incorporates a carrier/driver conviction function. As reported by other states, the numbers of participants in Kentucky's screening program are lower than the state would like them to be.

Kentucky will be gathering extensive data on trucks as part of an ITS Integration program (Kentucky Commercial Vehicle Safety Applications) in coordination with Oak Ridge National Laboratory. This is a study of screening technology involving sorter-lane WIM, infrared detection (for brake condition), trace chemical detection (for contraband detection), radiation detection (for safety and homeland security), and license plate reader technology. The University of Kentucky (Joe Crabtree) will be the system integrator. Under a separate task order (BA34018), an independent evaluation of the roadside deployment in London, Kentucky, is to be conducted, the results of which should be available for inclusion in the CVISN National Evaluation.

Oklahoma Department of Transportation. The state is fairly early in its deployment process, but would be interested in participating in a test of sorter-lane vehicle identification systems. Oklahoma perceives that states have been effective at getting robust data to the weigh station, but inspectors cannot really make the best use of the data without a reliable way of identifying carriers before the vehicle arrives at the scalehouse. The idea is to use CVIEW-type data during the brief, seconds-long interval before the inspector decides whether to pull the vehicle out of the queue for further inspection. Oklahoma suspects that one institutional barrier to universal transponders is the belief in the industry that such a system would lead to a national weight-distance tax.

In working with other states (for example, Louisiana), Oklahoma has learned that mobile enforcement on secondary or known bypass routes is more efficient than fixed-site weigh/inspection stations for finding violations.

Oklahoma would be interested in learning what screening and inspection selection algorithms are being used in different states, and which approaches make the most difference in safety. Also, what is the optimum mix of resource allocation between fixed-site and mobile inspection/enforcement operations, such as at virtual weigh stations?

Appendix E.1

Evaluation Options for the CVISN National Deployment Program

A Discussion Paper for Identifying Priorities

for

Federal Motor Carrier Safety Administration
October 4, 2004

Quick Reply Requested. As a CVISN State Program Manager, you are being asked to

- Assign priority rankings to a number of candidate evaluation options
- Complete the 2-page reply form in Appendix A
- Return your rankings by ***October 8, 2004.***

The purpose of this ranking is to develop a strategy for evaluating the CVISN deployment nationally, aiming for objectives, evaluation methods, and research products that will be of most value to your state and to the U.S. DOT as the deployment moves ahead.

The 2-page reply form also has space for you to indicate new ideas or areas in which your state may be able to participate in the evaluation. If in the weeks ahead your state CVISN team has additional ideas or research opportunities, please document them and send them along.

For further information on the CVISN deployment program, see Appendix B.

Why Rank the Options?

The purpose of this discussion paper is to present options for creating a CVISN National Evaluation strategy and to serve as a guide for developing consensus. When completed, the strategy will (a) define and prioritize evaluation goals and objectives, and (b) recommend methods for achieving the objectives through a series of data collection and analysis activities. CVISN State Program Managers and their teams are being asked to vote on and prioritize the goals and objectives, comment on proposed methods for achieving the objectives, and identify opportunities where their state may participate in data collection activities in areas where their state has made significant progress in deploying CVISN technologies.

What Are the Options?

Tables 1 through 4 below present ten *candidate* objectives to be considered for inclusion in the next round of evaluation activities. Additional objectives may be identified during this planning

process. Each objective describes a specific type of information that will be obtained within an evaluation goal area.

Each objective also has a brief description of candidate methods and products. For each method we describe what type of data will be collected, the level of participation required from CVISN states, and the types of analyses to be performed. The products are either reports with specific types of information, or analysis tools for conducting benefit/cost analyses. Opportunities for states to participate in data collection are also presented, whenever appropriate. The final evaluation strategy will contain more detailed descriptions of the methods and products that are selected from this exercise.

What Do I Do Now?

As a member of the CVISN program management team in your state, you are asked to carefully review the candidate objectives, methods, and products shown in Tables 1 through 4. The "priority" columns on these tables are for your discussion notes and drafting.

Please use the ***2-page reply form in Appendix A*** to indicate (a) your priority ranking of each objective, and (b) data collection efforts where your state is qualified and willing to participate.

In voting on priorities, you can assign as many low, medium, and high rankings as you choose. There is also room on the 2-page reply form for you to suggest any changes to the methods or products, or to suggest entirely new objectives for consideration. Ideas outside the scope of CVISN core deployment are welcome. Novel evaluation areas might include innovations in electronic funds transfer, license plate readers, electronic OS-OW permitting, or other technology applications that are proving their value to the state and/or motor carrier industry.

If you have questions about the content of the reply form, contact John Orban or Vince Brown.

We will compile the results and distribute a summary to all CVISN states prior to the next monthly conference calls on October 19 and 20, 2004. The goal is to formalize the strategy by the end of October, prepare a formal evaluation plan by the end of November, and complete one or more detailed test plans in the first quarter of 2005.

Return the completed 2-page reply form (Appendix A) by ***October 8, 2004***.

Table 1. Candidate Evaluation Objectives, Methods, and Products in the Area of Safety

Objectives	Methods	Products	State Participation[1]	Priority[2]
1 (Safety) Evaluate alternative inspection selection algorithms that utilize different combinations of safety and credentialing data.	• Interview CVO safety specialists in states that are utilizing different algorithms for combing safety data to make inspection selection decisions. • Develop a candidate list of data sources that states currently use or are considering to use for making inspection selection decisions (e.g., ISS and SafeStat scores, credential data, carrier snapshots, driver data, e-screening enrollment information, weight enforcement data, and numbers and types of historical violations. • Obtain historical data from national and state databases. • Perform statistical analyses to identify which combinations of available safety data are good predictors of carrier accident rates; and thus might be integrated into the inspection selection process. • Utilize findings from the literature reporting on similar analyses.	Statistical report that identifies sources of data used by states for roadside safety enforcement. Also includes an analysis that rates the performance of different inspection selection algorithms in terms of their ability to predict high accident rates	States with unique algorithms for combining various types of data to make inspection selection decisions	
2 (Safety) Determine the effectiveness of innovative deployments of CVISN technologies for focusing inspection resources on high-risk carriers and drivers. NOTE: This objective goes beyond the choice of inspection selection algorithms addressed in Safety Objective #1. It also considers the technologies and methods for applying the algorithm at the roadside.	• Solicit participation from states using a variety of innovative strategies for using CVISN to enhance the inspection selection process (i.e., those involving various combinations of vehicle identification technologies, mainline WIMs, CVIEW, sorting ramps, and electronic screening methods. • Describe the various CVISN technologies used by participating states as well as their innovative strategies for vehicle identification and decision-making. • Conduct field studies in those states to obtain data for estimating improvements in selection efficiency. (Truck IDs will be collected at inspection sites that use various selection strategies – with and without CVISN. Then, the safety ratings of trucks selected for inspection will be compared with those not selected.)	Estimates of inspection selection efficiency under various roadside enforcement strategies. (Inspection selection efficiency can be defined as the ratio of the probabilities of selecting high-risk carriers for inspection with and without the use of CVISN technologies.)	States deploying innovative strategies for identifying trucks (e.g., LP readers) and implementing inspection selection algorithms (e.g. WIMs, sorting ramps, CVIEW)	
3 (Safety) Determine reductions in crashes, injuries, and fatalities nationwide that would occur under various CVISN deployment scenarios.	• Define scenarios based on various assumptions concerning the level of deployment of electronic screening and the use of innovative inspection selection strategies. • Combine (using statistical methods) estimates of improved inspection selection efficiency (from Safety Objective #1 above) with findings from crash causation research to estimate potential crash reductions nationwide	Estimated crash, injury, and fatality reductions under various national deployment scenarios.	Not Applicable	

1 Indicates desired characteristics of states willing to participate in data collection.
2 Indicate on the **reply form** whether evaluation product is of high (H), medium (M), or low (L) priority.

Table 2. Candidate Evaluation Objectives, Methods, and Products in the Area of Customer Satisfaction

Objectives	Methods	Products	State Participation[1]	Priority[2]
4 (Customer Satisfaction) Characterize motor carrier satisfaction with CVISN systems and identify factors that affect their participation in electronic screening and electronic credentialing.	• Select a nationally representative sample of motor carriers (using MCMIS) with sufficient representation from carriers with specific characteristics (TBD, e.g., large/small, regional/national, business type, owner/lessor) • Develop and test questionnaires to be distributed by mail or completed on the internet. Phone contacts will be used to increase participation rates. Topics will include plans for participating in electronic credentialing or screening services, satisfaction with CVISN technologies, factors affecting participation, institutional issues, and recommendations for improving CVISN.	Survey report on motor carrier attitudes at a national level	Not Applicable	
	• As an alternative to a national survey, several focused surveys could be performed in a subset of states that have significant participation in electronic screening or electronic credentialing applications. The sample of motor carriers would be selected from more current and accurate state databases. Also, the questionnaires could focus on the particular application that is known to exist in the home state.	Multiple survey reports on motor carriers participating in selected states. A summary analysis will compare responses obtained from different states.	States with significant participation in e-screening or e-credentialing, or that use innovative methods	
5 (Customer Satisfaction) Characterize driver satisfaction with CVISN systems. Identify factors affecting owner/operator participation in electronic screening and electronic credentialing.	• Select a nationally representative sample of rest areas or truck stops for conducting intercept surveys of truck drivers. • Develop and test questionnaires for conducting in-person interviews with truck drivers. Topics will include level of awareness with CVISN technologies, satisfaction with roadside safety and weight enforcement strategies, perceived impact of CVISN, and general attitude toward state enforcement and credentialing practices. Owner/operators will be asked about factors affecting their participation in electronic screening and credentialing.	Survey report on driver attitudes	States willing to host driver intercept surveys – possibly at high-volume locations	
6 (Customer Satisfaction) Characterize motor carrier inspector satisfaction with CVISN systems and identify opportunities for improving the effectiveness of roadside enforcement systems.	• Select a nationally representative sample of states using CVISN systems for roadside enforcement. • Select representative samples of CV inspectors from selected states. Sampling may be stratified according to inspector age, level of experience, or organization (police or DMV). • Develop and test questionnaires for conducting in-person interviews and focus groups with inspectors. Topics will include understanding of CVISN systems, satisfaction with CVISN tools, recommendations for improvements.	Survey report on inspector attitudes	States with significant deployment of roadside enforcement technologies (beyond laptops with ASPEN)	

1 Indicates desired characteristics of states willing to participate in data collection.
2. Indicate on the **reply form** whether evaluation product is of high (H), medium (M), or low (L) priority.

Table 3. Candidate Evaluation Objectives, Methods, and Products in the Area of Benefit/Cost Analysis

Objectives	Methods	Products	State Participation[1]	Priority[2]
7 (Benefit/Cost) Develop a tool for states to estimate their return on investment for deploying CVISN electronic credentialing systems	• Summarize deployment and operating cost data provided by states under the self-evaluation reporting activities. • Solicit participation from multiple states with experience using CVISN under various operating scenarios (e.g., in-house systems, using vendors) • Conduct site visits and interviews to determine cost savings (or value of alternative services performed with time and resource savings) • Develop a spreadsheet tool that will allow states to estimate the return on investments under alternative deployment scenarios.	Spreadsheet tool for estimating the return on investment for various electronic credentialing deployment options. The spreadsheet will be prepopulated with ranges of costs for selected elements and permit specification of alternative deployment options.	States with progress at deploying EC and good cost information. States willing to beta-test tool.	
8 (Benefit/Cost) Compare the costs and benefits of CVISN in states at various stages of deployment**.**	• Solicit participation from up to nine states, choosing, for example, three states from each of the early, mid, and late deployment stages. • Conduct site visits and review documents to describe the chronological progress of deployment, identify similarities and themes across states, and explore common experiences and lessons learned. • Document deployment and operating costs, cost savings in credentials administration, and improvements in roadside enforcement efficiencies. • Compare the status of similar functions across states and identify advantages and disadvantages of various approaches to deployment.	A report documenting the benefits and costs experienced in different states, along with a comparative analysis to help identify factors that contribute to success, as measured by benefit/cost ratios and safety improvements.	States with different levels of experience and willing to share data and experiences.	
9 (Benefit/Cost) Compare the overall costs of deploying CVISN nationwide with the overall value of the benefits. This is a societal analysis which considers all costs and benefits, regardless of the sources. This will be an update of the benefit/cost analysis performed in the CVISN MDI Evaluation report (March 2002); but, with substantially improved cost data**.**	• Prepare 3 to 5 scenarios for the future deployment of CVISN technologies in each of two areas: Credentials Administration and Roadside Enforcement. Each scenario will depict the types of systems being deployed and the level of deployment on a national level. • Identify all of the potential benefits and cost elements associated with deploying CVISN according to each scenario • Use results from Safety Objective #2 (number of crashes, injuries, and fatalities avoided), analyses of cost data, selected information from customer satisfaction studies, and literature findings to estimate start-up, operating, and replacement costs and the value of all benefits under each deployment scenario • Apply appropriate discounting methods to project costs and the value of benefits on an annual basis over a specified operational period (25 years?). Compare the total costs with the value of all benefits.	A comprehensive benefit/cost analysis presented from a national perspective. A spreadsheet tool will be available to perform benefit/cost calculations under alternative assumptions (i.e. different discount rates, deployment levels, operating periods, etc.).	Not Applicable	

1 Indicates desired characteristics of states willing to participate in data collection.
2 Indicate on the **reply form** whether evaluation product is of high (H), medium (M), or low (L) priority.

Table 4. Additional Evaluation Objectives, Methods, and Products to be Considered

Objectives	Methods	Products	State Participation[1]	Priority[2]
10 (Homeland Security) Identify innovative applications of CVISN technologies used to enhancing national security	• Solicit participation from states using CVISN technologies alone or in combination with other systems, to enhance national security. Examples might include using CVISN to track hazmat shipments, perform background checks on drivers or new carriers, or enhance port-of-entry and border crossing procedures. • Conduct site visits to document deployment methods, collect cost and benefits data, and document lessons learned.	"Case Study" reports documenting the benefits, costs, and lessons learned in deploying CVISN technologies to enhance national security.	States with relevant and innovative deployments of CVISN technologies	
11 (State-Defined)	•			
12 (State-Defined)	•			
13 (State-Defined)	•			

1 Indicates desired characteristics of states willing to participate in data collection.
2 Indicate on the **reply form** whether evaluation product is of high (H), medium (M), or low (L) priority.

Appendix A. Reply Form (Page 1 of 2)

Please use page 1 of this reply form to indicate your willingness to participate in data collection for specific evaluation studies and your priority for each evaluation objective/product. Use page 2 to provide suggestions, comments, and descriptions of opportunities to participate in evaluation studies.

Name:_____ State:_____ Date Completed:_____

Objectives	Products	State Partic.[1]	Priority (H,M,L)[2]
1 (Safety) Evaluate alternative inspection selection algorithms.	Report identifying sources of data used by states for roadside safety enforcement and results of analyses rating the performance of algorithms.		
2 (Safety) Evaluate the effectiveness of innovative uses of CVISN for roadside enforcement.	Estimates of inspection selection efficiency (ISE) under various roadside enforcement strategies. (ISE is defined as the ratio of the probabilities of selecting high-risk carriers for inspection with and without the use of CVISN technologies.)		
3 (Safety) Estimate potential reductions in crashes, injuries, and fatalities nationwide.	Estimated crash, injury, and fatality reductions under various national deployment scenarios.		
4 (Cust Satis) Characterize motor carrier satisfaction and factors affecting participation.	Survey report on motor carrier attitudes and factors affecting participation in CVISN – based on national sample of carriers		
	Multiple survey reports on motor carriers participating in selected states. A summary analysis will compare responses obtained from different states.		
5 (Cust Satis) Characterize driver satisfaction.	Survey report on driver attitudes		
6 (Cust Satis) Characterize motor carrier inspector satisfaction.	Survey report on inspector attitudes		
7 (Ben/Cost) Tool for states to estimate their return on investment.	Spreadsheet tool for estimating the return on investment for various electronic credentialing deployment options.		
8 (Ben/Cost) Compare states at various stages of deployment.	A report documenting the benefits and costs in different states.		
9 (Ben/Cost) Overall costs of deploying CVISN nationwide vs. overall benefits.	A comprehensive benefit/cost analysis presented from a national perspective.		
10 (Home Sec) Innovative applications of CVISN for homeland security	"Case Study" reports documenting the benefits, costs, and lessons learned in deploying CVISN technologies to enhance homeland security.		
11 (State-Defined)			
12 (State-Defined)			
13 (State-Defined)			

1 Check (✓) if your state is interested in participating in data collection. Use the next page to describe your state's potential role.

2 Indicate whether evaluation product is of high (H), medium (M), or low (L) priority

(Continued on next page)

(Continued from previous page)

Appendix A. Reply Form (Page 2 of 2)

Use this sheet to comment on the objectives shown on the previous page, and to describe your state's potential role in the evaluation, such as an unusual or innovative approach to CVO, or some infrastructure, facility, or industry relationship that could shed light on one or more of the National Evaluation objectives.

State:_____ Date Completed:_____

Objective Number	Your Comments on Objective(s) or Descriptions of Opportunities for Your State to Participate in a Study

Return both pages by ***October 8, 2004***.

If you have questions about the evaluation or the content of the reply form, contact John Orban or Vince Brown.

Appendix B.
Overview of CVISN Deployment and Evaluation

As part of its management role in the Commercial Vehicle Information Systems and Networks (CVISN) Deployment Program, the Federal Motor Carrier Safety Administration (FMCSA) is sponsoring several evaluation and outreach activities. These activities are expected to aid the U.S. Department of Transportation (USDOT) and participating states in recognizing innovative or successful approaches to CVISN deployment and help the USDOT tell a coherent story of the achievements of CVISN at a national level. Evaluations will also help USDOT plan for future deployments and infrastructure investments and more effectively apply resources to programs, technologies, and approaches that are performing well in the field.

The information from the evaluations, when shared among the states, will provide insight into navigating the many issues involved in setting up, operating, and maintaining advanced systems for enhancing commercial vehicle administration and safety. In particular, these insights will help later-adopting states—or states with more challenging local situations—save time and effort in the course of their own CVISN deployments.

Background. The CVISN Model Deployment Initiative (MDI) began in 1996 with two "prototype" states and eight "pilot" states that took the lead in planning, design, and deployment of CVISN technologies and infrastructure. The purpose of the MDI was to demonstrate the technical and institutional feasibility, costs, and benefits of various intelligent transportation systems (ITS) for CVO. The ITS Joint Program Office commissioned an independent evaluation of the CVISN MDI, the final report of which was completed in March 2002 (U.S. DOT 2002). Although the scope of the evaluation included projections of the benefits and costs of deploying CVISN on a national level, at that time, only a few of the ten states participating in the MDI had made significant progress at deploying key CVISN components. Therefore, the MDI evaluation relied on benefits and cost data collected in a handful of prototype and pilot states that made early progress at deploying certain CVISN components as well as customer satisfaction data obtained from a broader sample of stakeholders in other states and the motor carrier industry. Much of the data came from studies focused in four states: Connecticut, Kentucky, Maryland, and, to a lesser extent, Virginia.

Despite its somewhat limited scope, the MDI evaluation report concluded that CVISN was a good investment. The report showed how safety information exchange (SIE) and electronic screening (ES) have the potential to produce important safety benefits, when integrated with innovative enforcement and outreach strategies. Electronic credentialing (administration of commercial vehicle registrations, permits, and fuel taxes) could offer substantial cost savings to states and motor carriers. Estimated benefit/cost ratios demonstrated that CVISN deployment produced a positive return on investment from a national perspective; however, the magnitude of the benefits are heavily dependent on the level of deployment and the degree to which CVISN systems are operated consistently between states.

Current Deployment Status. Now that the CVISN MDI has transitioned into the CVISN deployment program, many more states have received federal ITS R&D and/or earmark funds, or have used other resources to plan and implement CVISN core (Level 1) capabilities in the areas

of SIE, interstate credentials administration, and roadside ES. Forty-one states have completed CVISN Deployment Workshops, and 39 of these have prepared CVISN Program Plans that have been accepted by the FMCSA. While 32 states have received federal funds for CVISN deployment, only seven completed CVISN core (Level 1) deployment by the end of FY 2003. Several states have submitted deployment checklists, that are now in review at FMCSA. A number of other states have made significant progress in deploying CVISN core capabilities, but there is more to be done.

As required by the partnership agreements between the FMCSA and the states receiving federal funds for CVISN deployment, many states have completed self-evaluation reports, providing data and detailed information on specific technologies being deployed and used, the costs to deploy and operate these systems, and the benefits and lessons learned from the deployment. This self-evaluation activity began in late 2003. This activity is proving to be a valuable source of demographic-style and unit-cost information on the status of CVISN across the country, necessary for an initial understanding of the technologies being applied. Raw data from individual states as well as summaries and analyses of these data will be made available to participating CVISN states starting in the fall of 2004. This data will be especially valuable to states in the planning or early deployment stages. It will help them determine which states have similar CV operations and legacy systems, estimate costs of deploying selected CVISN components, identify states that have successfully deployed similar systems, and benefit from lessons-learned during the deployment in other states.

In addition to making the self-evaluation data available, FMCSA is planning a new round of evaluation activities to produce additional information on the benefits and costs of deploying CVISN. While this work will leverage the results from the self-evaluation activities, new studies will be conducted to extend and expand the findings from the National Evaluation performed on the CVISN MDI. The new studies might include surveys of motor carriers, special field tests to evaluate the effectiveness of new enforcement technologies or procedures, analysis of enforcement or registration data, or the development of benefit-cost analysis tools.

National ITS and CVISN Program Goals. The National ITS Program Plan, covering the period 1995 to 2015, established broad goals for ITS. They include improving traveler safety, operational efficiency, personal mobility, present and future productivity and reducing energy and environmental costs associated with traffic congestion. The plan also encouraged the creation of an environment in which the development and deployment of ITS can flourish. These goals, as they relate to evaluation projects, are discussed in the "Guidelines for the Evaluation of ITS Operational Tests and Deployment Project" (www.its.dot.gov/eval/eguide_tea21.htm).

At the start of the CVISN Model Deployment Initiative in 1997, over 100 representatives from state governments, the USDOT, and industry met at the CVISN Planning and Evaluation Workshop to discuss the anticipated benefits of CVISN and develop priorities for a National Evaluation of CVISN. Demonstrating the safety benefits of CVISN was declared the number-one priority. This was to be achieved by documenting how CVISN enhances the enforcement of safety regulations, thereby reducing the numbers of crashes, injuries, and fatalities caused by unsafe trucks and drivers. Efficiency was also cited as important; however, improvements in

efficiency of the enforcement operations are treated as safety benefits, while improvements in credentialing efficiency result in cost savings, which is the primary productivity benefit. Improvement in mobility and reductions in energy and environment costs were considered to be secondary benefits that come primarily from reductions in crashes. Finally, workshop participants recognized that documenting customer satisfaction and understanding customer needs were import factors in ensuring a successful deployment of CVISN.

Thus, the main priorities for the CVISN MDI Evaluation were to document safety benefits, productivity (cost savings), and customer satisfaction. Although the evaluation goals were achieved, it was recognized that most of the findings were based on data from a few states that achieved initial successes in deploying specific CVISN elements. Now that CVISN has entered the deployment phase, with participation from many more states, we have an opportunity to build on the initial evaluation work; but with a greater emphasis on documenting benefits under a variety of operating environments. There is also a strong need to share information among states on technical approaches, costs, and lessons learned.

Information Needs and Priorities for CVISN Partners. Various needs have been noted in the course of CVISN deployment, which—if met through a National Evaluation that reviews, summarizes, and shares information across jurisdictions—would help accelerate the wider adoption of CVISN technologies.

Several CVISN partnering sessions were held in 2003, involving state and federal transportation personnel, private-sector vendors, and motor carriers (Cambridge 2004). Among the results of these sessions were recommendations for USDOT, and the FMCSA in particular, to

- Support the development of stakeholder-specific business cases and outreach materials showing the benefits of CVISN deployment
- Provide cost/benefit models and benefits data
- Evaluate existing business rules that may be impeding deployment of ITS
- Track the status of states' CVISN deployments and lessons learned, and share this information among stakeholders
- Develop methods for quantifying and measuring performance in deploying ITS
- Support the study of advanced vehicle identification systems, to better use the wealth of safety information for real-time screening and inspection selection at the roadside
- Continue to work toward interoperability in the process of screening for the safety and security of the vehicle, cargo, and driver at the roadside
- Focus on data quality improvement, for state transportation and safety/law enforcement purposes as well as for private industry, such as shippers and insurance companies.

References

U.S. DOT (2002). Evaluation of the Commercial Vehicle Information Systems and Networks (CVISN) Model Deployment Initiative, 2 Vol. Final Report to U.S. Department of Transportation ITS Joint Program Office, IPAS task order 7703, contract DTFH61-96-C-00077, EDL #13677, 13699.

Cambridge Systematics, Inc. (2004). Summary of Recommendations from CVISN Partnering Session Report, unpublished paper prepared for Federal Motor Carrier Safety Administration, based on meetings in April, May, and December 2003. U.S. Department of Transportation.

Appendix E.2
Results of Informal State Survey on CVISN Evaluation Strategy

Date October 18, 2004

To CVISN States

From John Orban and Vince Brown

Subject Summary of States Responses to CVISN Evaluation Strategy

The following is a brief summary of the responses we received to our October 4 discussion paper on CVISN evaluation options:

Nineteen (19) states returned the reply form by early afternoon on October 15. Table 1contains a tabulation of state-defined priorities to the candidate evaluation objectives. A simple scoring algorithm was used to establish a ranking. A score of 2 was assigned for each high priority rating and a score of 1 was assigned for each medium priority ranking.

The objective receiving the highest score was Objective 10 (Homeland security applications). The safety objectives and the benefit-cost objective related to state ROI analysis were also highly rated. Only two states suggested objectives that were not already listed.

Table 2 lists any significant comments (paraphrased) and offers to participate in special studies. Several states indicated a willingness to support some or all of the studies; but, did not offer specifics at this time.

Thank you to all of the states who returned the reply forms. This is a very good start. We welcome and will consider additional inputs over the next week or so as we prepare a draft evaluation strategy based on this input as well priorities identified by FMCSA.

John Orban and Vince Brown

Table 1. State Assigned Priorities

Objective	Priority			Score[1]
	Low	Medium	High	
1 (Safety) Evaluate alternative inspection selection algorithms.	AK, AZ, FL, ND	ID, MD, MN, NY, VA, WI	CA, KY, OK, MI, MO, TX, UT, WA	22
2 (Safety) Evaluate the effectiveness of innovative uses of CVISN for roadside enforcement.	AZ	CA, ID, KY, ND, OK, MI, TX, VA, WA	AK, FL, MD, MN, MO, NY, UT, WI	25
3 (Safety) Estimate potential reductions in crashes, injuries, and fatalities nationwide.	FL, ID, KY, NY, TX	CA, MN, UT, VA	AK, AZ, MD, MI, MO, ND, OK, WA, WI	22
4 (Cust Satis) Characterize motor carrier satisfaction and factors affecting participation.				
Survey report on motor carrier attitudes and factors affecting participation in CVISN – based on national sample of carriers	AZ, FL, NY, TX, VA	ID, MO, OK, WA	AK, CA, KY, MD, MI, MN, ND, UT, WI	22
Multiple survey reports on motor carriers participating in selected states. A summary analysis will compare responses obtained from different states.	MI, NY, TX	AK, CA, ID, MN, MO, ND, OK, VA, WA	KY, UT, WI	15
5 (Cust Satis) Characterize driver satisfaction.	AZ, FL, KY, MI, MN, MO, NY, UT	AK, CA, ID, MD, ND, OK, TX, VA, WA	WI	11
6 (Cust Satis) Characterize motor carrier inspector satisfaction.	AZ, FL, KY, MI, MN, WI,	ID, MD, MO, ND, NY, OK, UT, VA, WA	AK, CA, TX	15
7 (Ben/Cost) Tool for states to estimate their return on investment.	AK, AZ, MD, NY	FL, KY, MN, MO, OK, UT, VA	CA, DE, ID, MI, ND, TX, WA, WI	23
8 (Ben/Cost) Compare states at various stages of deployment.	AZ, FL, ID, MD, MN, NY, TX, UT, VA, WA	CA, MO, ND, OK	AK, DE, KY, MI, WI	14
9 (Ben/Cost) Overall costs of deploying CVISN nationwide vs. overall benefits.	AZ, CA, FL, KY, WA	AK, ID, MN, MO, NY, OK, TX, VA, WI	DE, MD, MI, ND, UT	19
10 (Home Sec) Innovative applications of CVISN for homeland security	AK	AZ, FL, ID, OK, UT	CA, KY, MD, MI, MN, MO, ND, NY, TX, VA, WA, WI	29
11 (State Defined) Web-site with comparative information on device costs/ performance. For example, piezo-electric versus bending plate/load cell WIM; wireless communication alternatives		OK		
12 (State Defined) Survey states with combined IFTA/IRP/ Authority credential system vs. independent systems to determine if level of compliance is related to the type of system.		OK (no priority specified)		
13 (State Defined) Report documenting CVISN benefits to freight mobility and congestion reduction. Part of existing study in WA (See objective 10 on next page)		WA		

1. Score = 1 x (no of states with medium priority) + 2 x (no of states with high priority)

Table 2. Significant Suggestions and Offers for State Participation

Objective	Proposed State Participation[1]
1 (Safety) Evaluate alternative inspection selection algorithms.	MO Has a SafeStat system using an algorithm process to rank INTRAstate carriers based on performance. Used to target carriers for compliance reviews. UT Could assist by utilizing different algorithms and providing data on high-risk carriers (accident, OSS, etc) NY Certain states (e.g., NY and MI) are "probable cause" states. NY is willing to work with eval team that could provide sufficient evidence to link carrier-based algorithms to individual vehicles – and develop a defensible algorithm for intrastate operators
2 (Safety) Evaluate the effectiveness of innovative uses of CVISN for roadside enforcement.	KY Deploying infrared cameras, radiation detectors, and License plate readers at Union (?) Station NY Has several innovative technologies tested or to be tested, including mobile screening tools and license plate readers. All screening is done at non-fixed sites OK Expand to address identification/screening of non-transponder equipped vehicles using manual queries via CVIEW to run plate or DOT number through algorithms at fixed scales. Involves use of plate readers and bar code technologies
3 (Safety) Estimate potential reductions in crashes, injuries, and fatalities nationwide.	
4 (Cust Satis) Characterize motor carrier satisfaction and factors affecting participation.	
Survey report on motor carrier attitudes and factors affecting participation in CVISN – based on national sample of carriers	
Multiple survey reports on motor carriers participating in selected states	WI Willing to share results from in-state surveys related to OSOW permitting system. Also willing to collaborate on third survey following final automation piece. Many other states indicated a willingness to participate in these types of surveys.
5 (Cust Satis) Characterize driver satisfaction.	WI Interested if focus is on owner-operators
6 (Cust Satis) Characterize motor carrier inspector satisfaction.	
7 (Ben/Cost) Tool for states to estimate their return on investment.	
8 (Ben/Cost) Compare states at various stages of deployment.	
9 (Ben/Cost) Overall costs of deploying CVISN nationwide vs. overall benefits.	
10 (Home Sec) Innovative applications of CVISN for homeland security	NY Leading the cargo seal tracking project on East Coast. Has implications for using CVISN capabilities to support security applications WA Currently in the development stage of a HazMat tracking program. Results from an independent evaluation may be helpful when it is completed.

1. Several states offered to participate in some or all areas; but did not describe specific opportunities.

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APPENDIX F.
DESCRIPTION OF CVISN BENEFITS AND LESSONS LEARNED (FEBRUARY 2007)

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Description of Benefits and Lessons Learned from State Self-Evaluations of Commercial Vehicle Information Systems and Networks (CVISN) Deployments

(October 2003 to August 2006)

Report Prepared

February 28, 2007

For
U.S. Department of Transportation
Federal Motor Carrier Safety Administration
Washington, DC 20590

Contract No. DTFH61-02-C-00134
Task Order BA34009

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Executive Summary

The purpose of this report is to present a summary of the benefits and lessons learned in deploying technologies as part of the Commercial Vehicle Information Systems and Networks (CVISN) program, as reported by state transportation and law enforcement officials. CVISN is a cooperative, U.S. DOT-sponsored program for improving the safety, efficiency, and productivity of commercial vehicle operations (CVO) through the development of a unified national information technology (IT) architecture that each state can adapt to meet its own business conditions and operating environment.

Background and Methods. To help states track their own progress in deploying CVISN technologies, a self-evaluation requirement was included in the partnership agreements between the U.S. DOT and individual states. One purpose of the self-evaluation reports was to encourage—through the sharing of timely information—the widespread deployment of technologies that offer tangible benefits in safety, efficiency, and cost for both roadside (ES and safety information exchange, or SIE) and administrative (credentialing) operations related to commercial vehicles. Three self-evaluation report forms or templates (deployment, costs, and benefits/lessons learned) were developed and tested, and made available to state CVISN program managers online in late 2003. The forms and the data as reported by the states have remained accessible to program managers on a password-protected web interface since that time. Since the self-evaluation process began, program managers and their teams have been periodically reminded to view data from their states and others, and update their own data as circumstances change.

A report summarizing the quantitative cost data in the CVISN self-evaluation reports has been published on the ITS Unit Costs web site, maintained by the Federal Highway Administration http://www.itscosts.its.dot.gov/. A descriptive cost report is also available on the ITS web site: http://www.itscosts.its.dot.gov/its/benecost.nsf/files/CVISNCostReport/$File/CVISN_SelfEvalCostReport.pdf

This benefits report is intended to complement the cost information cited above by summarizing the more qualitative, contextual benefits and lessons learned as reported by up to 34 of the states actively deploying CVISN technologies. State-identifiable information, linking specific self-evaluation reports with individual states, has not been released to the public. Thus, the information presented in this report is anonymous.

Results. Several prevailing themes appeared in the benefits/lessons learned data, as described below.

Benefits. Respondents were generally very pleased with the time savings and convenience provided by computer-based CVISN systems for credentials administration, safety enforcement, and ES or transponder-based weigh station bypass. States reported great time and labor savings for their own government operations, as well as savings reported to them by the motor carrier staff with whom they interact. About half of the responding states reported that CVISN had enabled them to assign state employees to perform other, more critical functions, because of the time and labor savings. Other states noted the reduced need for overtime labor

during peak periods of credentials processing. Another benefit frequently noted was the reduction of typographical and clerical errors and rework required, now that computer-based systems for both credentialing and safety inspection reporting have built-in error-checking functions. The FMCSA's role in fostering coordination and information sharing among the states was also noted by several respondents.

Below are listed some anecdotal quotations representative of the views of a number of CVISN states, and providing specific evidence of observed benefits:

- **"Motor carriers were often required to obtain credentials from a single location. . . . A round trip could take up to 15 hours driving time alone. They also had the option of mailing the application forms and waiting several days for their credentials. The new Internet system allows a carrier to obtain credentials from within its office in 15 minutes."**

- **"The automated renewal process has increased the efficiency of state staff and reduced carrier workload. The web-based application process has made it easier and less time consuming for a carrier to apply, and it has improved data quality."**

- **"Electronic credentialing has reduced the [time required for] data entry by at least 80%, and the time for issuing credentials has been reduced from 3 days to 1 hour."**

- **"Preclearance saves carriers approximately $3 million, based on the fact that it costs $1.00 per minute to operate a truck, and they save on average 5 minutes if they can bypass a scale."**

- **"CVISN saves 1 hour per day per inspector (30), or 9,000 hours per year. . . . Approximately 870 hours of clerical time are also saved each year, and two-page violation reports can now be completed in 5 to 7 minutes, instead of 15 minutes [under the legacy system]."**

- **"We used our CVISN contact list as a knowledge base. We conducted interviews with states with similar platforms to learn from their experiences—their suggestions and willing input aided our development efforts greatly. In one instance, a state shared an application that we used as a shell for our development."**

- **"There is an advantage in being later in the process. We are gathering information from success/failure stories of other states."**

Remaining Issues, Challenges, and Lessons Learned. While many benefits and advantages were reported, respondents were also candid in providing evidence for areas where the CVISN program could grow and improve. For example, there is a sense among some states that CVISN systems offer a great potential for increased efficiency, but that the systems are currently being underutilized. One respondent characterized the situation as being "all dressed up and nowhere to go." The systems and architectures are in place, but the national databases are not being populated at a rate sufficient to enable full benefits for all users, and CVISN technologies are not yet being adopted by the motor carrier community. One respondent said it this way:

- **The lion's share of vehicles is not transponder-equipped. States [with electronic screening capabilities] have a wealth of information about the safety and credential status of vehicles on our highways . . . but we are limited in our capabilities to access it in relation to non-transponder-equipped trucks—over 80% of the trucks on the road. We**

need: (1) a federal rule standardizing the placement and format of apportioned plates . . . to facilitate delivery of information to enforcement officers; (2) a federal subsidy or enhancement of operating funds . . . to enhance enforcement functions; and (3) federal investment or incentives to improve mobile communications, reduce associated costs, and increase coverage."

Another issue that was frequently cited centered on a lack of funding and difficulties in maintaining support for programs, both in terms of budgetary and matching-fund limits and in terms of sufficient dedicated, trained staff, especially in the information technology area. Staff are frequently pulled in several directions, and turnover reduces the level of institutional knowledge available to solve immediate problems. One respondent noted:

- **"All of the CVISN team members have regular [i.e., non-CVISN] jobs that also required their attention. Because of the lack of a long-term funding commitment for CVISN, we were not allowed to hire additional full-time employees to do the extra work. We also had difficulty finding anyone with the required experience to work on the CVISN technologies."**

Several states also noted the disconnect or tension between the need for national standards and the need to accommodate individual differences among the states. Several states indicated that FMCSA has provided basic direction, but each state in some respects has chosen to go its own way. Therefore, building consensus and consistency has been a challenge. According to one respondent:

- **"Consistency has been valuable in some areas and a problem in others. It has been valuable in areas where there is national leadership and a common view on how to accomplish specific goals. It has been problematic where there is less federal leadership and where states have vastly differing views on how to accomplish specific goals."**

An inherent paradox cited in several of the self-evaluation reports is the need for safety enforcement to focus on the highest-risk vehicles and carriers, while the carrier companies with the resources and economies of scale to take early advantage of the benefits of CVISN programs tend to be the larger, lower-risk, safer carriers. Making CVISN technologies available and appealing to the larger population of higher-risk carriers is seen as a significant, long-term challenge.

Views of the Future. Looking to the future, when asked to envision their best-case outcome for CVISN deployment, states indicated that full functionality and interoperability were key goals:

- **"E-carrier credentialing 'modernized' so it is quick, fully available on the web (including payment), and as paperless as possible. E-screening effectively used at busy roadside sites, allowing enforcement to concentrate on bad carriers and allowing good carriers to travel with fewer interruptions. Interoperability between adjacent states."**

- **"Complete interoperability between state systems. Improved safety. Reduced delays at Ports of Entry. Better enforcement and compliance. Reduction in administrative work and costs for both carriers and state governments."**

- **"Real-time exchange of data about carriers from registration through enforcement. Carriers would be able to process all transactions electronically; roadside enforcement would be aided by transponders or other technology that would provide carrier, driver,**

and vehicle information far in advance of the vehicle pulling into an inspection station; and enforcement actions would be available in real time to carriers and other enforcement agencies to speed up the process and ensure that bad actors were kept off the road."

- **"Reduced accidents; reduced wear and tear on the state's highway infrastructure; ability to accommodate increased demand for credentials without increasing staff; ability to deploy additional FTEs from credentials processing to revenue recovery functions such as audits; higher operating productivities for safe and legal carriers; improved motor carrier compliance."**

Overall, the CVISN self-evaluation reports on benefits and lessons learned give valuable real-world insights into the states that are actively working to integrate multiple advanced systems with their existing legacy systems and CVO business processes. These states are learning from the practices of other states and applying the lessons to their future plans for CVISN deployment.

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Acknowledgments

The authors acknowledge the contributions of the many State CVISN Program Managers, System Architects, and others on their CVISN teams in the various states, who took time to compile the information and post it to the CVISN Self-Evaluation web site. Officials in several states, including Alaska, Arizona, California, Colorado, Kentucky, Minnesota, Utah, and Washington, served as beta test sites for the data collection process during 2002 and 2003, and they deserve special acknowledgment. The authors also acknowledge the web programming and database design team at Oak Ridge National Laboratory for their work in constructing and maintaining the self-evaluation user interface and data collection system.

Introduction

To help states track their own progress in deploying Commercial Vehicle Information Systems and Networks (CVISN) technologies, a self-evaluation requirement was included in the partnership agreements between the U.S. Department of Transportation (DOT) and individual states. This self-evaluation was tied to the U.S. DOT's support of infrastructure deployment and research and development (R&D) in cooperation with the states. One purpose of the self-evaluation reports was to encourage—through the sharing of timely information—the widespread deployment of technologies that offer tangible benefits in safety, efficiency, and cost for both roadside (ES and SIE) and administrative (credentialing) operations related to commercial vehicles.

Data Collection

To assist states in completing their self-evaluation reports, and to help ensure that the data reported would be comparable across states for use in federal planning and analysis, three data collection forms or templates were developed and tested: Deployment, Costs, and Benefits/Lessons Learned. The **deployment** template covered the types and quantities of equipment deployed; the functions, operations, and features in place and planned within each state's CVISN deployment; and the scope of commercial vehicle operations in each state (e.g., populations of vehicles, numbers of motor carriers, numbers of inspection sites, and volume of inspections per year). The **cost** template covered the one-time start-up costs to deploy CVISN technologies, including state employee and contracted labor; purchased equipment, materials, services, and software; fees paid to associations or administrators involved in CVISN data management; and annual labor and operations/maintenance costs to continue using the CVISN technologies after deployment. The **benefits/lessons learned** template covered open-ended, qualitative topics, such as technical challenges, institutional issues, tangible benefits observed, and recommendations for other states and future deployment phases.

A password-protected web site interface for state CVISN program managers and their teams to use in populating the CVISN self-evaluation database was announced in late 2003. Once a state had entered its data and marked the templates as complete and verified, the data were added to a data review module on the same web site, in raw data and summary format, for other state CVISN program managers and their teams to review and analyze. States are welcome to add, modify, and update their self-evaluation reports at any time. More than 20 states have completed all three templates. State-identifiable self-evaluation data have not been released to the public to date.

Data Summary—Benefits/Lessons Learned Template

The purpose of this report is to present a summary of all responses to the benefits/lessons learned questions, and to document the process for aggregating and summarizing the data. The data may be posted for public view on the U.S. DOT's Intelligent Transportation Systems (ITS) Benefits Database web site, http://www.itsbenefits.its.dot.gov/. To avoid revealing any state's specific benefits/lessons learned data, which may involve proprietary information not intended for public release, the data exported from the self-evaluation database to the ITS Benefits

Database are anonymous. For purposes of this report, all benefits/lessons learned data in the self-evaluation database were considered, whether or not a state had marked its template as complete.

Method of Summarizing

The benefits/lessons learned data included in this report were downloaded from the self-evaluation database (operated and maintained by Oak Ridge National Laboratory on behalf of the ITS Joint Program Office) in August 2006. The original blank benefits/lessons learned template is presented in Appendix G.

States may have entered or modified their data on the templates at any time between 2003 and 2006. Predominantly qualitative responses were requested in the benefits/lessons learned template; therefore, responses were exported to Microsoft Excel and coded to permit analysis and identification of trends. Codes were assigned by reviewing all of the responses to a single question and identifying common themes within the set of responses. For example, if all responses to a question about deployment challenges focused on three issues – personnel limitations, lack of funding, or technical difficulties – each of those issues would be counted as a separate type of response, and each response to that question would be coded to match one or more of the three response types.

Because benefits/lessons learned data are qualitative in nature, they are not well suited to graphical or simple tabular presentation. Instead, responses are summarized and briefly analyzed below in paragraph format on a question-by-question basis. Most of the benefits/lessons learned questions were open-ended; therefore, it was not unusual for input from a single respondent to fall into multiple response categories (e.g., a response that addressed both funding and technical problems would be counted in both categories). As a result, percentages in the question-by-question summary below may not add up to 100%.

A complete tabulation of the responses by question is presented in at the end of this appendix. The first five questions on the template were for demographic/identification purposes; therefore the summary in this report and the tables that follow both begin with Question 6. The responses have been modified from their original language only to make them anonymous, by removing states' self-references by name. Also, references to most specific companies, vendors, products, and nongovernmental organizations were removed, again with the goal of masking the identity of the states making the self-reports.

The self-evaluation process gave state officials the opportunity to take credit for their CVISN successes and achievements. It also gave these officials a chance to candidly—and sometimes bluntly—sound off regarding the obstacles and challenges they had encountered in the course of CVISN planning and deployment, both within their states and through working with federal agencies, other states, and private vendors and contractors. Such plain-spoken responses were actively solicited in the benefits/lessons learned template. It is hoped that they were intended by the respondents—and that they will be used by future CVISN stakeholders—in a constructive spirit of ongoing program development and assessment.

Description of Results

Response Rates

For any question or item on the templates, various numbers of states may have responded. Table F-1 shows, in descending order of frequency, the distribution of the numbers of responses across all of the 48 benefits/lessons learned categories, or questions for which answers were provided, representing 1,035 benefits/lessons learned records included in this report. For example, Table 1 shows that 8 of the 48 categories (questions) had 25 data points (states) responding, and 5 categories had 23 states responding.

Table F-1. Distribution of Response Rates for All Reported Benefits and Lessons Learned Elements

Frequency of Each "N" Value	N (Number of Responses per Question)
8	25
5	23
4	32
4	16
3	22
3	21
3	20
3	15
2	24
2	19
2	17
1	34
1	28
1	27
1	26
1	18
1	14
1	13
1	8
1	6
Total=48	

The maximum number of responses for any single question was 34. Most questions had between 16 and 25 responses. Blank, N/A (not applicable), or no response values were excluded from the counts and the written summary.

Data Description

The purpose of the CVISN infrastructure deployment program is to provide a unified structure or architecture within which each state can plan, develop, and deploy software and hardware systems customized to that state's commercial vehicle operations and regulatory climate. Therefore, states enjoy wide latitude in selecting their own ways of participating in the CVISN program. This variability from state to state is reflected in the benefits/lessons learned data.

The data presented in this report are organized to correspond with the topics addressed in the benefits/lessons learned self-evaluation template, namely: (1) Benefits of CVISN deployment; (2) Institutional issues; (3) Technical challenges; (4) Innovative financing; (5) Public-private partnering; (6) Intelligent Transportation Systems (ITS) standards and architecture; and (7) Other benefits or lessons learned. As indicated previously, the original template is presented in Appendix G.

Overall Summary

Below are listed the main benefits, lessons, and other results as reported by CVISN states:

- **Benefits of Electronic Credentialing**
  - Time savings and improvements in efficiency for states
  - More convenient and less time-consuming for motor carriers
  - Improved data quality
  - Reduced labor/workload

- **Benefits of Safety Information Exchange**
  - Improved screening and enforcement
  - Time savings in inspections

- **Benefits of Electronic Screening**
  - Increased bypass efficiency
  - Reduced backups on approach lanes

- **Institutional Issues (Pro and Con)**
  - Enhanced data quality
  - Need for data quality improvements in some areas
  - Difficulties in arranging credit card payment for electronic credentials
  - Difficulties presented by evolving, changing technologies
  - Improved relationships among partner state agencies
  - Lack of properly trained staff; lack of technical support
  - Difficulties in integrating multiple disparate technologies or systems
  - Lack of adequate funding.

Question-by-Question Summary

The sections below summarize responses to individual questions, providing count and percentage data to aid in analyzing responses. Selected responses (sometimes paraphrased) are included, when appropriate and relevant, to highlight particularly insightful or detailed information. Any trends observed among the responses are also described. Complete responses (sanitized to remove references to individual states) are presented in the tables at the end of this appendix. Abbreviated versions of the original questions are included to provide a frame of reference for the responses.

BENEFITS OF CVISN DEPLOYMENT

(Q#6) DOES YOUR STATE USE CVISN ELECTRONIC CREDENTIALING FOR IRP?

(Q#6A) HOW HAS E-CREDENTIALING AFFECTED THE CONVENIENCE OF IRP CREDENTIALING FROM THE MOTOR CARRIER'S POINT OF VIEW?

(Q#6B) WHAT FEEDBACK HAVE YOU OBSERVED FROM THE IRP-CREDENTIALED MOTOR CARRIERS YOU SERVE?

Of the 32 respondents who addressed this question, 21 reported using CVISN for International Registration Plan (IRP) credentialing, and 11 reported that they do not use CVISN for IRP transactions.

Time savings and improvements in convenience were the most commonly cited benefits associated with the use of CVISN for IRP credentialing. Ten of the 21 users (48%) emphasized the convenience of using CVISN, compared to legacy methods. Specifically, CVISN has allowed some carriers to apply for and receive credentials without leaving their offices, rather than traveling great distances to reach designated administrative centers. One respondent indicated that, in the past, "Motor carriers were often required to obtain credentials from a single location…A round trip could take up to 15 hours driving time alone. They also had the option of mailing the application forms and waiting several days for their credentials. The new Internet system allows a carrier to obtain credentials from within its office in 15 minutes." Likewise, ten of the 21 users (48%) cited improvements in efficiency and time savings as benefits of using CVISN. As one respondent noted, "Turnaround time is now measured in a matter of minutes instead of days for users of electronic credentialing."

Reported carrier feedback on the use of CVISN for IRP-credentialing has been largely positive. Of the 16 states that provided input on motor carrier feedback, 10 (63%) reported receiving positive feedback from IRP-credentialed carriers, while 2 others (13%) reported receiving mixed positive and negative feedback. Only 2 respondents (13%) reported receiving solely negative feedback.

(Q#7) DOES YOUR STATE USE CVISN ELECTRONIC CREDENTIALING FOR IFTA?

(Q#7A) HOW HAS E-CREDENTIALING AFFECTED THE CONVENIENCE OF IFTA CREDENTIALING FROM THE MOTOR CARRIER'S POINT OF VIEW?

(Q#7B) WHAT FEEDBACK HAVE YOU OBSERVED FROM THE IFTA-CREDENTIALED MOTOR CARRIERS YOU SERVE?

Of the 32 respondents who addressed this question, 53% (17) reported using CVISN for International Fuel Tax Agreement (IFTA) credentialing, and 47% reported that they do not use CVISN for IFTA transactions.

Time savings and improvements in convenience and efficiency, compared to legacy methods of IFTA credentialing, were the most commonly cited benefits associated with the use of CVISN. Six of the 16 users (38%) reported at least one of these benefits. As one CVISN user noted, "The automated renewal process has increased the efficiency of state staff and reduced carrier workload. The web based application process has made it easier and less time consuming for a carrier to apply, and it has improved data quality."

Although the number of data points was relatively small (14 respondents), reported feedback from IFTA-credentialed carriers was generally positive. Seven respondents (50%) indicated that carriers have responded favorably to the use of CVISN for IFTA credentialing, while 2 agencies (14%) reported receiving negative feedback, and 3 others reported mixed feedback. Among those who reported positive feedback, time savings and convenience were cited multiple times as advantages of using CVISN.

(Q#8) HOW HAS CVISN ELECTRONIC CREDENTIALING AFFECTED THE INTERNAL OPERATION OF YOUR STATE'S CREDENTIALS ADMINISTRATION OFFICE, COMPARED WITH USING THE LEGACY SYSTEM?

Twenty-one respondents addressed the effects of electronic credentialing (EC) on their state's credentials administration office. Among these responses, the most commonly cited benefits were reductions in labor/workload (9 responses or 43%) and time savings or improvements in efficiency (7 responses or 33%). In one state, [the legacy method] "was a very labor intensive and time consuming process. Electronic credentialing…has reduced the labor for data entry by at least 80% and the time required for issuing credentials from 3 days to 1 hour or less." Another state estimated cost savings as a result of EC, as follows: "In-house IRP back-end processing has eliminated the need for vendor processing at a $233,000 per year savings and has reduced staff overtime during period of heavy renewals by about 400 hours." Eight respondents (38%) indicated that it was too early in the process to assess the benefits and impacts of CVISN EC, compared to legacy methods.

(Q#9) DOES YOUR STATE USE CVISN SAFETY INFORMATION EXCHANGE TO SUPPORT YOUR STATE'S ROADSIDE INSPECTION PROGRAM? WHAT BENEFITS HAVE YOU OBSERVED?

Twenty-three of 32 respondents (72%) reported using the CVISN SIE to support roadside inspection. More than half of these users (12) cited improved screening and/or enforcement capabilities as a key benefit of the SIE. For example, one user reported that "Enforcement personnel are now able to concentrate on unsafe and possibly illegal carriers. During 2001-2002 their inspection rate increased about 27%, due in part to CVISN capabilities. It continues to grow at about 3-4% per year." Another benefit, reported by 8 users (35%), was increased efficiency/time savings. One user noted that CVISN saves "one hour per day per inspector (30), or 9,000 hours per year." The same user noted that approximately 870 hours of clerical time are also saved each year, and two-page violation reports can now be completed in 5-7 minutes, instead of 15 minutes [under the legacy system].

(Q#10) DOES YOUR STATE USE CVISN ELECTRONIC SCREENING (PRECLEARANCE)?

Thirty-four respondents addressed this question; the majority of these (25 respondents or 74%) reported using CVISN ES. The most commonly cited benefits of using the technology were increased bypass efficiency and/or a reduction in backups, reported by 16 states (64% of users). Three states (12% of users) reported a reduction in traffic through fixed scales by 15-20%; this reduction minimizes backup on the ramps entering the facilities. Some users provided details on screening efficiency improvements realized as a result of CVISN: in one state, the number of trucks weighed increased by 38% at one scale and by 59% at another scale in the year following

installation of e-screening and weigh-in-motion technologies. The same state reported year-to-year increases in enforcement actions that ranged from 21% to 106%, depending on the violation, at two scales. Other reported benefits of CVISN ES included reduced travel and inspection times (7 users/28%), improved screening/enforcement capabilities (6 users/24%), cost savings (2 users/8%), and time savings/efficiency (1 user/4%). Regarding cost savings, one respondent estimated that preclearance saves carriers approximately $3 million, "based on the fact that it costs $1.00 per minute to operate a truck, and they save on average 5 minutes if they can bypass a scale."

(Q#11) HAS CVISN FREED STATE EMPLOYEES TO PERFORM OTHER FUNCTIONS? IF SO, SPECIFY WHAT THE OTHER FUNCTIONS ARE AND HOW THIS CHANGE HAS AFFECTED THE STAFF INVOLVED.

Of the 32 respondents who addressed this question, half (16) reported that CVISN has freed employees to perform other duties, while the other half reported that it has not. States reported that, due to benefits such as time savings/improved efficiency (cited by 6 respondents) and improved screening/enforcement capabilities (cited by 9 respondents), employees are now able to focus more on functions such as inspections, customer service, data processing and analysis, planning, and training. One respondent noted that "Electronic credentialing has reduced the [time required for] data entry by at least 80%, and the time for issuing credentials has been reduced from 3 days to 1 hour."

INSTITUTIONAL ISSUES

(Q#12) HOW DID THE DEGREE OF COOPERATION AMONG VARIOUS STATE AGENCIES AFFECT YOUR STATE'S INITIAL DEPLOYMENT OF CVISN TECHNOLOGIES AND INFRASTRUCTURE?

There were 28 responses to this question. Among these, 19 (68%) reported positive experiences, with most citing effective cooperation as a critical aspect of CVISN deployment in their state. As one respondent succinctly noted, "We wouldn't have been able to deploy any of the CVISN technologies if we didn't have good cooperation between all of the affected agencies." Six states (21%) reported limited cooperation among agencies due to conflicting priorities, varying degrees of support for CVISN technologies, or other factors.

(Q#13) HOW DID THE AVAILABILITY, SUPPORT, AND QUALITY OF VENDORS, CONSULTANTS, OR CONTRACTORS AND/OR SUBCONTRACTORS AFFECT YOUR STATE'S INITIAL DEPLOYMENT OF CVISN?

Twenty-three states responded to this question. Over half of the respondents (14 or 61%) reported strong support from vendors, consultants, and contractors that facilitated CVISN deployment. According to one agency, "The prime vendor/architect of our CVISN program was extremely capable, cooperative, and accountable and was instrumental in keeping the program on track and timely." Six respondents (26%) reported mixed or negative experiences with vendors, consultants, and contractors. Several of these states noted that funding or personnel shortages limited their ability to work with vendors and other support personnel. The remaining 3 respondents reported that these factors had no effect on CVISN deployment or were not applicable to their particular situations.

(Q#14) DESCRIBE ANY ISSUES OR PROBLEMS THAT AROSE RELATED TO QUESTIONS OF JURISDICTION, AS THEY AFFECTED YOUR STATE'S INITIAL CVISN DEPLOYMENT.

Of the 26 states that addressed this issue, 11 (42%) reported having no issues or problems. Nine others (35%) reported issues that were eventually resolved, and 6 states (23%) reported issues that had not yet been resolved. One state summarized its general approach to potential jurisdictional problems: "Five agencies were involved. Staff members from each agency met together to discuss common issues. After a couple of meetings it became apparent that a formalization of the working relationships being developed would be a positive step. The heads of the agencies signed an MOU creating an interagency group and an agreement to work together. The formalization of the group and the support from upper level management created an environment where cooperation and coordination became the norm."

(Q#15) BRIEFLY DESCRIBE YOUR STATE'S APPROACH TO BALANCING DATA PRIVACY WITH DATA AVAILABILITY.

Twenty-four respondents provided input on this issue. Six states (25%) indicated that they encountered no privacy issues. Five others (21%) encountered issues that remain unresolved (e.g., agency access to certain types of protected data), while 12 (50%) reported that they have overcome such issues through careful planning and consideration of conflicting needs. Six of the 24 respondents indicated that CVISN data are accessible within their states, but only on a "need to know" basis; another state reported that it considers all of its data to be confidential and does not typically share the information with anyone.

(Q#16) HOW HAS CVISN DEPLOYMENT AFFECTED YOUR STATE'S GENERAL APPROACH TO MAINTAINING A HIGH LEVEL OF DATA QUALITY?

Twenty states addressed the impact of CVISN deployment on their state's approach to maintaining data quality. Of these, 13 (65%) indicated that CVISN has had some effect on data quality, either by enhancing it directly or highlighting areas in which it can be improved. More specifically, six respondents (30%) noted that CVISN has improved the efficiency of data collection, entry, editing, and other quality-related activities. As summarized by one state, "CVISN deployment has highlighted data quality problems and the need to address them. Examples: (1) Loading our CVISN database brought to light problems with inconsistencies between USDOT numbers and state account numbers. These problems were addressed to ensure consistency. (2) Reviewing bridge and highway data for use in automated routing highlighted data discrepancies that are now being resolved, and spurred an effort to set a new policy for timeliness of data updates." Only three respondents (15%) indicated that CVISN has had little or no effect on data quality.

(Q#17) WHAT INSTITUTIONAL BARRIERS DID YOU ENCOUNTER IN PLANNING FOR AND DEPLOYING CVISN TECHNOLOGIES AND INFRASTRUCTURES?

Twenty-four states provided input on institutional barriers. The types of barriers reported were fairly diverse, spanning one or more of the following categories: organizational or coordination issues (e.g., establishment of agency responsibilities, coordination of activities) – cited by 11 respondents (46%); technical issues – cited by 7 respondents (29%); regulatory or policy-related

issues – cited by 6 respondents (25%); funding issues – cited by 3 respondents (13%); and other types of issues (e.g., purchasing difficulties) – cited by 4 respondents (17%). Six respondents (25%) reported encountering very few or no barriers.

As detailed by one state that reported encountering funding, technical, and other types of barriers, "It was very difficult to follow a moving target with regards to CVISN technologies. It appears that each state had to go in its own direction to try and develop the necessary software. There was no long-term commitment from FMCSA for technical support or funding. Another big issue revolved around the use of credit cards or e-checking to pay for the required CVISN e-government activities. States are not allowed to pass on the credit card transaction fees to their customers; this results in a net loss of revenue to the state for complying with the CVISN requirements."

(Q#18) HOW DID YOUR DEPLOYMENT FIT IN WITH ANY INSTITUTIONAL BARRIERS YOU ENCOUNTERED?

The response rate for this question was low: only 15 states responded, and 5 of these (33%) failed to provide substantive answers for various reasons (e.g., because they did not encounter institutional barriers, have not yet achieved full CVISN deployment, or did not understand the question). No clear trends could be discerned from the 10 states that responded in greater detail.

(Q#19) CONVERSELY, HOW DID YOUR STATE'S CVISN DEPLOYMENT BRING ABOUT CHANGE TO THE ESTABLISHED INSTITUTIONS IN YOUR STATE?

Twenty-one respondents addressed this question. Among these, 5 (24%) reported observing very few or no changes. More than half (11 respondents) reported that CVISN has enhanced collaborative efforts or improved relationships within and/or among partner agencies. For example, one respondent noted, "We communicate better and more frequently. The cooperation among agencies that was fostered by the working group was another key element to a successful deployment."

(Q#20) WHAT WERE THE PERSONNEL OR HUMAN RESOURCES CONSTRAINTS OR ISSUES THAT MOST AFFECTED YOUR STATE'S DEPLOYMENT OF CVISN?

There were 27 responses to this question. Nearly half of these (13 or 48%) cited a lack of properly trained staff or adequate technical expertise as a key personnel-related constraint. Ten respondents (37%) noted that deployment was hindered by the limited ability of staff members to devote time to CVISN, while 5 (19%) cited funding constraints as a major hindrance. As summarized by one state that reported all three types of constraints, "All of the CVISN team members have regular jobs that also required their attention. Because of the lack of a long-term funding commitment for CVISN, we were not allowed to hire additional full-time employees to do the extra work. We also had difficulty finding anyone with the required experience to work on the CVISN technologies." No significant issues were reported by 6 respondents (22%).

(Q#21) DESCRIBE ANY OTHER INSTITUTIONAL ISSUES YOU OBSERVED THAT WOULD BE OF INTEREST OR VALUE FOR OTHER STATES CONSIDERING A CVISN DEPLOYMENT.

There were 13 responses to this question. Responses tended to echo those received for earlier questions, such as a need for dedicated staff members to work on CVISN technologies (cited by 3 respondents or 23% of all who answered) and a need for cross-organizational cooperation and/or the establishment of teams or working groups (cited by 6 respondents/46%). No other clear trends were discernable among the responses received.

TECHNICAL CHALLENGES

(Q#22) WHAT WERE THE MOST CHALLENGING TECHNICAL ISSUES IN DEPLOYING CVISN FOR ELECTRONIC CREDENTIALING (IRP, IFTA, OTHER PERMITS AND CREDENTIALS) IN YOUR STATE?

Twenty-five respondents provided input on challenging technical issues. Approximately 32% of those who responded did not detail specific challenges, typically because deployment had not yet occurred in their states or had occurred too recently for challenges to be identified. Among those who did provide details, many (10 respondents or 40% of the total) cited the integration of multiple technologies or systems as a significant technical hurdle. Other technical challenges reported were connectivity or communication problems, a lack of technical support, equipment problems, issues with data quality or availability, and security problems. One state that reported multiple technical challenges lamented the lack of technical support available to states for the development of CVISN technologies and questioned the consistency and helpfulness of the guidance that was provided.

(Q#23) WHAT WERE THE MOST CHALLENGING TECHNICAL ISSUES IN DEPLOYING CVISN FOR SAFETY INFORMATION EXCHANGE IN YOUR STATE?

Of the 22 states that addressed this question, 19 detailed specific technical issues associated with deploying CVISN for SIE. Over half of the respondents (12) reported communication or connectivity issues, and 7 (32%) cited the integration of multiple technologies or systems as a major technical challenge. Five states reported multiple technical challenges associated with the deployment of CVISN for SIE. One state expressed optimism that technical challenges would be overcome, stating the following: “We will get there...some other components had to be worked out first. There is an advantage in being later in the process. We are gathering information from success/failure stories of other states.”

(Q#24) WHAT WERE THE MOST CHALLENGING TECHNICAL ISSUES IN DEPLOYING CVISN FOR ELECTRONIC SCREENING (CLEARANCE OR WEIGH STATION BYPASSING) IN YOUR STATE?

Twenty-three states responded to this question, 8 of which indicated that no challenges had been encountered in deploying CVISN for ES or that deployment had not yet occurred. The challenge most commonly identified by the remaining respondents was the integration of multiple technologies and systems (noted by 7 states/30% of respondents). Five respondents (22%) cited problems with data quality or availability as a particularly challenging technical issue. Other

reported issues included connectivity or communication problems and difficulties with equipment.

(Q#25) WHAT TECHNICAL CHALLENGES DID YOU OBSERVE IN INTEGRATING THE VARIOUS FUNCTIONS OF CVISN ACROSS ALL OF YOUR STATE'S COMMERCIAL VEHICLE OPERATIONS (CVO)?

Twenty-two states addressed this issue. The challenges most commonly identified by respondents included merging various technologies, networks, and software platforms and getting the various systems to communicate with one another; such factors were cited by 12 states or 55% of those responding. One respondent advised, "Let the business needs dictate the technology – don't let technology dictate the business needs." Other challenges identified by a relatively small number of respondents (no more than 2 states each) included data quality and availability, equipment problems, and security problems.

(Q#26) OVERALL, WOULD YOU CHARACTERIZE HARDWARE OR SOFTWARE AS THE GREATER CHALLENGE IN CVISN DEPLOYMENT?

Nearly all respondents (24 of 25 or 96%) indicated that software was a greater challenge than hardware in deploying CVISN. One respondent indicated that both were equally challenging. Specific challenges cited by respondents included difficulty in developing, integrating, or adapting to CVISN software (9 states or 36%), particularly with respect to compatibility between CVISN and legacy systems. Seven respondents (28%) noted that inter-agency communication and/or cooperation have been problematic. Particular communication and cooperation issues cited by respondents included determining which agency should be responsible for developing and maintaining CVISN systems, forging agreements among multiple departments or agencies on system design and cost sharing issues, and designing systems to meet the needs of various end-users. Several other challenges were reported by multiple respondents, including time, labor, and cost commitments (4 states or 16%); software maintenance and update requirements (3 states or 12%); and technical problems (3 states).

(Q#27) CONSIDERING ALL OF THE TECHNICAL CHALLENGES FACED BY YOUR STATE IN DEPLOYING CVISN, WHICH TOOLS OR APPROACHES TENDED TO WORK THE BEST IN OVERCOMING THEM?

Nineteen states provided specific input on the tools or approaches they applied to technical challenges. The most commonly cited tool was qualified technical or project management personnel (identified by 6 states/32% of respondents). Other tools or approaches reported by multiple states were: (1) ensuring cooperation and communication among individuals and agencies involved in CVISN (5 respondents/26%), (2) talking with other states (3 respondents/16%), and (3) planning and preparing for deployment in advance (2 respondents/11%). One state shared its approach to learning from others: "We used our CVISN contact list as a knowledge base. We conducted interviews with states with similar platforms to learn from their experiences – their suggestions and willing input aided our development efforts greatly. In one instance, a state shared an application that we used as a shell for our development."

INNOVATIVE FINANCING

(Q#28) IT IS ASSUMED THAT CVISN INFRASTRUCTURE DEPLOYMENT IS FINANCED PRIMARILY THROUGH A COMBINATION OF VARIOUS FUNDS. DESCRIBE ANY UNUSUAL OR INNOVATIVE APPROACHES TO PAYING FOR YOUR STATE'S CVISN INFRASTRUCTURE DEPLOYMENT.

Twenty-one states provided input on their methods of financing CVISN infrastructure deployment. Of these, 5 (24%) reported using federal funds only, and 4 (19%) reported using a combination of federal and state funds. Three states (14%) secured CVISN funding through public/private partnerships, while 3 others used toll credits, surcharges on permits, and/or fuel tax evasion funds.

(Q#29) IF YOUR STATE EMPLOYED INNOVATIVE FINANCING METHODS, DESCRIBE YOUR METHOD OF LEARNING ABOUT THESE FUNDS, APPLYING FOR THEM, AND ADMINISTERING THEIR EXPENDITURE.

Only eight states responded to this question. No clear trends could be discerned from these responses, several of which clarified that financing for CVISN was obtained through standard channels and not through innovative methods.

(Q#30) IF YOUR STATE EMPLOYED INNOVATIVE FINANCING METHODS, DESCRIBE ANY SPECIAL TERMS AND CONDITIONS OR STRINGS ATTACHED THAT AFFECTED YOUR STATE'S DEPLOYMENT OF CVISN TECHNOLOGIES AND INFRASTRUCTURE.

Only six states responded to this question. No trends could be discerned from these responses.

(Q#31) WHAT INTERAGENCY ISSUES DID YOU ENCOUNTER RELATIVE TO FUNDING FOR CVISN.

Eighteen states provided input on interagency issues. Half of the respondents (9) indicated that no interagency issues were encountered. Among the rest, responses were fairly diverse. Three states (17%) reported that it was difficult to secure state matching funds. Four states (22%) reported leveraging non-CVO funding sources, and 2 states (13%) indicated that they used pooled funds for CVISN.

PUBLIC-PRIVATE PARTNERING

(Q#32) HOW DID THE DEGREE OF COOPERATION BETWEEN YOUR STATE AND THE MOTOR CARRIERS OR TRUCKING ASSOCIATIONS AFFECT YOUR STATE'S INITIAL DEPLOYMENT OF CVISN TECHNOLOGIES AND INFRASTRUCTURE?

Twenty-five states provided responses to this question. Of those, 21 (84%) reported that the private sector was an active participant and a strong supporter of CVISN deployment, while 3 (12%) indicated that the private sector has been minimally involved in the process. Many states that reported active involvement from the private sector included details about the benefits of such partnerships. For example, one state noted, “The industry has been very supportive of the project and is a great resource to direct the development of a useful product.” Another respondent claimed, “The motor carrier industry’s support of the electronic screening program

and the proposed 10% temporary surcharge on permits were critical to the state's decision to employ electronic screening and to develop a new system for automated permit issuance and routing." No states reported that the private sector has hindered CVISN deployment.

(Q#33) DESCRIBE THE ROLE OF THE PRIVATE SECTOR IN COLLABORATING ON YOUR STATE'S CVISN DEPLOYMENT. DID THE PRIVATE SECTOR PROVIDE DIRECT FUNDING OR IN-KIND CONTRIBUTIONS TO THE DEPLOYMENT THAT HELPED THE STATE'S DEPLOYMENT OF CVISN TECHNOLOGIES?

Nineteen states responded to this question. Five states (26%) reported that the private sector had no involvement in CVISN deployment. Various contributions from the private sector were reported by the remaining 12 states, including services or consultation (9 states/47%), funds (6 states/32%), and equipment (5 states/26%). Multiple contributions from the private sector were reported by 5 states.

(Q#34) WHAT WERE THE CHALLENGES AND LESSONS LEARNED IN COOPERATING WITH PRIVATE-SECTOR PARTNERS IN YOUR STATE'S DEPLOYMENT?

There were only 15 responses to this question. Despite the low response rate, two clear trends were observed in the responses. Nearly half of the respondents (6 or 40%) emphasized the importance of establishing and maintaining clear communications between the state and private sector partners throughout the process. As one respondent advised, states should, "Establish clear expectations up-front as to what functions/capabilities the vendor product should include. Monitor progress on these expectations carefully and continuously." Five other states (33%) noted that maintaining good working relationships and consensus-building are critical to successful partnerships. Only two states (13%) reported technical challenges.

ITS STANDARDS AND ARCHITECTURE

(Q#35) DESCRIBE YOUR STATE'S APPROACH TO IMPLEMENTING ITS STANDARDS AND ACHIEVING CONSISTENCY WITH THE NATIONAL ITS ARCHITECTURE.

Twenty-three respondents provided feedback on this issue. A number of states shared details on the standards they used to transfer information without commenting specifically on the ITS architecture. For example, one state noted, "We use open standards, such as TCI/IP, html, etc., which allows any user (jurisdiction or carrier) to access and operate CVISN-related systems using common web browser software via extranet or internet." Six states (26%) reported that ITS architecture facilitated deployment; one such respondent stated, "When we developed the top-level design, we only chose solutions that were consistent with the recommended standards. The top-level design was approved, and development efforts utilized those standards. Effective implementation of the solutions thereafter was never a problem." An even greater number of states (7 or 30%) indicated that the ITS architecture hindered deployment efforts. One state provided both positive and negative input on maintaining consistency with ITS standards, noting, "Consistency has been valuable in some areas and a problem in others. It has been valuable in areas where there is national leadership and a common view on how to accomplish specific goals. It has been problematic where there is less federal leadership and where states have vastly

differing views on how to accomplish specific goals." Nine states (39%) were fairly neutral in their assessment of the impacts of ITS architecture on deployment.

(Q#36) DID IMPLEMENTING THE STANDARDS OR MAINTAINING CONSISTENCY WITH THE ITS ARCHITECTURE PRESENT ANY CHALLENGES OR BARRIERS TO YOUR STATE'S DEPLOYMENT?

Twenty states responded to this question. Two states (10%) were unable to provide a substantive answer, since their deployments were still underway. Nine states (45%) indicated that they encountered no significant challenges or barriers. Nine others indicated that they did encounter challenges. As one respondent noted, "The standards and architecture incorporated everything anyone could think of, making it overly complex and resulting in testing of items that were never used." Other challenges reported include the use of EDI, a lack of sufficient guidance regarding the technologies to be used, and paperwork burdens.

(Q#37) WHAT METHODS OF OVERCOMING THESE CHALLENGES WOULD YOU RECOMMEND FOR STATES BEGINNING THEIR CVISN DEPLOYMENTS?

Sixteen states shared their insight on overcoming the challenges identified in Question 36. Six respondents (38%) emphasized the importance of early planning, while 5 (31%) recommended using CVISN architecture or standards. Three states (19%) noted that establishing a clear understanding of federal objectives and maintaining open lines of communication among all parties throughout deployment are critical. Other suggested methods for overcoming deployment challenges included maintaining consistency and learning from the experiences of other states.

OTHER BENEFITS OR LESSONS LEARNED

(Q#38) WHAT ARE THE MOST IMPORTANT LESSONS YOUR STATE LEARNED IN PLANNING FOR AND/OR DEPLOYING CVISN TECHNOLOGIES FOR ELECTRONIC CREDENTIALING?

Twenty-five states shared their insights on this topic, and several trends were clear among the responses received. Numerous respondents (10 or 40%) highlighted the need for cooperation and clear communication among all parties involved in CVISN deployment (e.g., vendors, states, and federal agencies). Seven states (28%) emphasized the importance of early and careful planning. Likewise, 7 respondents stressed the resource commitments required of states to deploy CVISN, with several noting the need to secure adequate funds at the beginning of the process, since many states are not capable of fully funding CVISN deployment on their own. Four states (16%) shared lessons related to the use of upgraded technologies, and 3 (12%) pointed out the importance of having access to good data. One respondent touted the implementation of a new, automated system for oversized/overweight vehicle permitting: "We expect that about 60% of 150,000 permits issued annually will be able to be applied for/processed using the automated system, enabling permit operators to focus on the 40% of permits requiring more complex routing. This will significantly reduce the time spent on the permit application process for carriers and get vehicles on the road more quickly. Upon full operation, the system is expected to save carriers more than $5 million annually in increased

operating productivity (based on getting loads on the road 1 hour faster at $60/hour operating costs)."

(Q#39) WHAT ARE THE MOST IMPORTANT LESSONS YOUR STATE LEARNED IN PLANNING FOR AND/OR DEPLOYING CVISN TECHNOLOGIES FOR SAFETY INFORMATION EXCHANGE?

Twenty-two states responded to this question. The most frequently cited concepts were a need for high-quality, real-time data (9 states/41%) and good cooperation or communication among all parties involved (7 states/32%). As one respondent noted, "In a small corridor state, safety information exchange in real time is essential. We have a good relationship with our border states. We realize that safety must be addressed from a regional standpoint, because we all have limited resources." Six states (27%) recommended using well-supported, up-to-date, and consistent technologies. Three states (14%) stressed early planning, as shown in the following suggestion: "As the CVISN database is being built, try to plan ahead for all the potential uses for the data and how users may access it." Finally, 3 states discussed the resource commitment required to deploy and maintain CVISN for SIE.

(Q#40) WHAT ARE THE MOST IMPORTANT LESSONS YOUR STATE LEARNED IN PLANNING FOR AND/OR DEPLOYING CVISN TECHNOLOGIES FOR ELECTRONIC SCREENING?

Twenty-five states provided feedback on this question. Responses were diverse, with most respondents providing multiple suggestions. The most commonly cited lessons learned – identified by 10 states (40%) and 9 states (36%), respectively – were associated with: (1) establishing clear communications and cooperative relationships and (2) maximizing the use of existing or future technologies. One state that focused on technology issues noted, "We are looking forward to the Virtual Weigh Station concept because we realize that not all screening can or should take place at weigh station sites." Five states (20%) emphasized the costs of deployment or suggested ways to address these costs. Other identified lessons included the need for early planning (5 states) and improved data quality or data sharing capabilities (2 states/8%). One state shared a major frustration with the current state of ES and offered several suggestions to improve future deployments: "The lion's share of vehicles is not transponder-equipped. States [with ES capabilities] have a wealth of information about the safety and credential status of vehicles on our highways…but we are limited in our capabilities to access it in relation to non-transponder-equipped trucks – over 80% of the trucks on the road. We need: (1) a federal rule standardizing the placement and format of apportioned plates…to facilitate delivery of information to enforcement officers; (2) a federal subsidy or enhancement of operating funds…to enhance enforcement functions; and (3) federal investment or incentives to improve mobile communications, reduce associated costs, and increase coverage."

(Q#41) WHAT ARE THE MOST IMPORTANT LESSONS YOUR STATE LEARNED IN PLANNING FOR, DEPLOYING, AND/OR INTEGRATING CVISN TECHNOLOGIES ACROSS ALL CVO FUNCTIONS?

Twenty-five states responded to this question. More than half of them (15 states or 60%) emphasized the importance of establishing clear communications and cooperative relationships among all parties involved in CVISN. Seven respondents (28%) highlighted the time and funding commitments necessary for a successful deployment. Likewise, 7 states remarked on the benefits of early planning; as one respondent succinctly recommended, "Plan your work, get

buy-in, and work your plan." Other suggestions made by respondents included approaching CVISN as a program rather than a distinct project, building a strong and supportive program team to manage CVISN efforts, and using committees to bridge cross-organizational communication gaps.

(Q#42) LOOKING BACK, WHAT ARE THE MOST IMPORTANT STEPS YOU WOULD HAVE TAKEN (OR AVOIDED TAKING) IF YOU HAD KNOWN AT THE BEGINNING WHAT YOU KNOW NOW ABOUT DEPLOYING CVISN TECHNOLOGIES?

Twenty-three states addressed this question. Responses varied widely, with states focusing on the following topics: personnel (8 states/35%), project planning or organization (10 states/43%), funding (5 states/22%), timing of CVISN-related activities (4 states/17%), and coordination among involved parties (5 states). Common themes among the responses included: maintaining continuity among personnel, vendors, or consultants throughout the deployment process; allowing more time for deployment; and requesting additional funds. Only 3 states (13%) indicated that they would change nothing if given the chance to deploy CVISN again.

(Q#43) WHAT WAS THE GREATEST SURPRISE YOUR DEPLOYMENT TEAM ENCOUNTERED IN DEPLOYING OR USING CVISN TECHNOLOGIES?

Only 17 states provided feedback on surprises they encountered in deploying or using CVISN. Of these, 9 states (53%) reported negative surprises; 7 (41%) reported positive surprises, and 1 (6%) claimed to have encountered no surprises. Thematically, there were no clear trends among the responses. The costs and time commitments associated with CVISN deployment were unwelcome surprises to several states. A few others were pleasantly surprised by the support they have received and the amount of progress they have been able to make. As one state noted, "We were surprised to realize how much we have accomplished. We discovered that we are well on the way to accomplishing other listed goals. The setbacks are not insurmountable, and progress has been made."

(Q#44) DESCRIBE YOUR BEST-CASE SCENARIO FOR CVISN DEPLOYMENT. WHAT ARE THE MOST IMPORTANT BENEFITS YOU WOULD EXPECT YOUR STATE AND THE COUNTRY AS A WHOLE TO EXPERIENCE?

Twenty-five states described their best-case scenarios for CVISN deployment. Within the scenarios described, the following themes were repeated by multiple respondents: increased safety and improved enforcement efforts (15 states/60%); streamlined data exchange and access (14 states/56%); consistent and accurate data handling (6 states/24%); increased motor carrier participation and compliance (4 states/16%); and increased availability of funding or other resources to support CVISN deployment (2 states/8%). One respondent succinctly listed four outcomes of an ideal deployment: "(1) Fewer unsafe vehicles and drivers on the road, (2) Greater voluntary compliance with regulations, (3) Greater use of the Web for reporting and licensing, and (4) A decreased workload for state employees."

(Q#45) WHAT BENEFIT OR LESSON LEARNED, NOT COVERED IN ANY PREVIOUS QUESTION, DO YOU THINK OF AS IMPORTANT FOR OTHER STATES TO KNOW AS THEY PLAN AND MAKE PROGRESS IN CVISN DEPLOYMENT?

Fifteen states shared their opinions on benefits or lessons learned that may be important to other states planning for CVISN deployment. Only one clear trend emerged, as 5 states (33%) warned against underestimating the resource (i.e., time and funding) commitments required for a successful deployment and cautioned that long-term funding will be required but is not always available.

(Q#46) YOU ARE INVITED TO ADD TO, CLARIFY, OR EXPAND ON YOUR ANSWERS, ESPECIALLY WITH INFORMATION ABOUT UNUSUAL BENEFITS OR LESSONS LEARNED THAT WERE NOT COVERED IN THE QUESTIONS ABOVE.

Five states took the opportunity to expand upon their answers. Responses ranged from detailed insights on the CVISN program to brief words of advice for other states embarking upon deployment efforts.

Complete Original State Responses to
CVISN Benefits and Lessons Learned Self-Evaluation Template
(As of August 2006)

Q#	Question	Responses (Sanitized to maintain anonymity)
6	Does your state use CVISN electronic credentialing for IRP?	Yes: 21 No: 11
6a	How has e-credentialing affected the convenience of IRP credentialing from the motor carrier's point of view?	Turnaround time is now measured in a matter of minutes instead of days for users of EC.
		IRP web-based credentialing is being implemented (using state funds) to help accommodate the large number of carriers returning to the state from a neighboring state to credential; our state does not have the operating budget to increase its IRP staff, and thus is planning to handle the increased workload by automating the process
		When the carrier submits an on-line application, all processing is done before the carrier comes into the office. Upon arrival, instead of waiting for their turn to work with an Account Representative and wait for all the paperwork to be completed, they simply provide proof of registration, sign the forms and receive their credentials.
		This system has been deployed very recently and therefore it is too early to make this assessment.
		Our trucking portal provides complete end-to-end processing for IRP transactions. Currently, approximately 34% of all transactions are completed using the web application.
		Made it much better for participating motor carriers and relieved some workload from our limited staff. A motor carrier can apply, process, and obtain an invoice & temporary permit within a matter of minutes.
		The development of an in-house back-end processing system has increased the efficiency of state staff resulting in faster turnaround time for carriers and improved data quality.
		Our state has developed the capability for carriers to access IRP activities within the CVISN environment. However, based on instructions from upper management, these capabilities will not be fully implemented until specific credit card fee issues, not within the department of transportation's purview, are resolved by an administrative agency or the state legislature.
		Internal operational efficiencies are seen as well as convenience for the customer.
		Currently, only renewal is available electronically. 5% participation is low, but as smaller carriers opt for this method, the system will speed up. Many carriers use brokers to handle the credentialing. If more brokers used the EC, we would see a greater increase in this service.
		System is currently in Beta testing with one service agent. Electronic payment options are not yet deployed. Ability to print credentials on site is not yet available (pending deployment of electronic payment options).
		Motor carriers were often required to obtain credentials from a single location. A round trip could take up to 15 hours driving time alone. They also had the option of mailing the application forms and waiting several days for their credentials. The new Internet system allows a carrier to obtain credentials from within its office within 15 minutes.
		Automated credentialing aspects not yet in operation but planned for later this year.
		We currently use an EDI / Bulletin system, enabling large carriers to download application information directly from their fleet management systems. Carriers then transmit this information to the state using a VPN. Credentials are express mailed back to the carrier, generally within 24 to 48 hours of uploading their application data. We implemented this system several years ago (prior to the state's involvement in the CVISN program) to replace the practice of allowing carriers to send tapes to the state with application information.
		EC has allowed the carriers to key in their information at their convenience from their location, eliminating wasted time and duplication of keying.
		Customers apply for and receive credentials direct from their place of business.
		It has had a significant impact on the ability of a motor carrier to obtain their operating credentials and place a vehicle into the fleet. Turnaround times have been reduced from several days to minutes. Approved carriers can now self-issue most credentials including license plates. What sometimes took weeks and even a trip to the state capital takes minutes.

Q#	Question	Responses (Sanitized to maintain anonymity)
		EC allows carriers and permit services to apply for and receive IRP credentials virtually 24 hours a day, 7 days a week, which is a big improvement in convenience. Turnaround time is virtually immediate for IRP supplements completed electronically, compared to an average 5 hour turnaround for applications that are faxed in to the office. One drawback was that certain features (such as plate transfers) weren't working properly until fixes were completed in late 2004. Until the fixes were made, IRP processors had to spend more time trouble-shooting and helping customers complete applications. Now that these problems are resolved, we expect more improvements in convenience for customers.
		EC appears to be cost-prohibitive for us. The initial costs of $200,000 cannot be justified because of our small carrier base.
		Just started
		As applications still need to be reviewed by DMV staff, the turnaround time is unchanged. A number of carriers have found the system difficult to use and therefore less convenient than sending the information to the DMV (or carrying documents in, for nearby carriers).Note: Electronic payment is not accepted for IRP at this time.
6b	What feedback have you observed from the IRP-credentialed motor carriers you serve?	Simply put, the carriers using this service are ecstatic.
		They are pleased with how this helps lessen their time in the office.
		Too early in the process to have received any substantive feedback.
		The adoption rate indicates a favorable motor carrier response.
		Mostly good, but we have found that the technology level out there is not a good as we had thought or hoped.
		Carriers have shown limited interest in the new system since it lacks a payment mechanism. Payment processing will be added to the process in 2004.
		The motor carriers that use the electronic renewal like it...Motor Carrier Unit is striving for 10% participation.
		Carriers expect system to reduce turn-around times for credentials processing / acquisition.
		The feedback has been overwhelmingly positive. There have been some requests to expand the original functionality to include more.
		We credential more than 111 carriers and 120,000 CVs annually using this system, more vehicles than virtually any other state in the country credentials. The reason that these large carriers establish physical locations in our state and credential here is because we offer this convenience. Manual renewals, manual supplementals are not an option for carriers with thousands of power units.
		Carriers love it.
		Very easy to use and convenient.
		They believe the IRP system is overly complicated and not user-friendly.
		Positive feedback mostly. Some system performance issues needed to be resolved up front. They would like to be able to obtain both title and IRP credentials in one transaction.
		None
		We've received feedback from permit services that the edit features in our e-credentialing application helps reduce the number of "go-backs" to their clients to fix errors. A large carrier estimated using e-credentialing cut their time spent on a 1,400 vehicle IRP renewal in half (from 12-16 hours previously to 6-8 hours with e-credentialing). Additionally, they were able to find and resolve problems and discrepancies up front instead of making corrections later.
7	Does your state use e-credentialing forIFTA?	Yes: 17 No: 15
7a	How has e-credentialing affected the convenience of IFTA credentialing from the motor carrier's point of view?	Our system allows the carrier to obtain a new or renew IFTA credentials. The system does not have quarterly reporting capability.
		When the carrier submits an on-line application, all processing is done before the carrier comes into the office. Upon arrival, instead of waiting for their turn to work with an Account Representative and wait for all the paperwork to be completed, they simply provide proof of registration, sign the forms and receive their credentials.
		Our Trucking Portal provides complete end-to-end processing for IFTA transactions. Currently, approximately 30% of all transactions are completed using the web application.
		We have electronic tax filing currently with electronic payment via ACH debit. We are working on EC for IFTA.
		The automated renewal process has increased the efficiency of state staff and reduced carrier workload. The web based application process has made it easier and less time consuming for a carrier to apply, and it has improved data quality.

Q#	Question	Responses (Sanitized to maintain anonymity)
		We have developed, through a vendor, the capability for carriers to access IFTA activities within the CVISN environment. However, based on instructions from upper management, these capabilities will not be fully implemented until specific credit card fee issues, not within our purview are resolved by the state department of administration or state legislature. Four of our carriers are online, however to submit and process their IFTA quarterly tax returns.
		Internal operational efficiencies are seen as well as convenience for the customer.
		System is currently in Beta testing with one service agent. Electronic payment options are not yet deployed. Ability to print credentials on site is not yet available (pending deployment of electronic payment options).
		Motor carriers can now obtain credentials on-line within 10 minutes. They were previously able to obtain them within an hour from a service bureau. However, this was more costly because an additional fee was imposed by the service bureau.
		Automated credentialing aspects not yet in operation but planned for later this year.
		This has not been as successful as IRP due to the duplication of efforts. Most carriers already had a system in place.
		Customers apply and receive credentials and submit tax reports and payments direct from their place of business.
		We don't issue credentials using the system, but rather have them process their tax returns.
		No effect.
		Just started
		Availability of e-credentialing for filing IFTA quarterly returns allows customers more lead time to meet filing deadlines. However, because we don't yet have electronic payment capability, those customers who owe the state money must still submit a check before the deadline, in addition to filing the electronic tax return. Another gap in our e-credentialing was that the IFTA license renewal function wasn't working correctly in time for the 2005 renewal. Because this problem was fixed in late 2004, we expect improved convenience for customers renewing their IFTA licenses for 2006.
7b	What feedback have you observed from the IFTA-credentialed motor carriers you serve?	They are pleased with the opportunity to spend less time in the motor vehicle office.
		The adoption rate indicates a favorable motor carrier response.
		Most is positive. Some don't like the ACH debit process and have opted not to join for this reason.
		Carrier feedback has been positive as a result of reducing their workload and making the application process more convenient.
		Carriers have shown limited interest in the new system since it lacks a payment mechanism. Payment processing will be added to the process in 2004.
		Carriers expect system to reduce turn-around times for credentials processing / acquisition.
		We have received very little feedback from the industry regarding IFTA credentialing. The system has minimal usage in the area of IFTA. We believe this is because our state allows carriers to obtain extra credentials when they initially register or renew. These extra credentials, in essence, allow a carrier to “self” credential.
		They feel it is a duplication of their efforts to have to key information in to two different systems.
		Very easy to use and convenient. Simplifies tax reporting.
		We have not concentrated on the program until recently, having focused on deploying the IRP side of CVISN. However, the carriers using the system like the idea of the system edits catching mistakes upfront.
		Marginal benefit - calculations done on-line are correct, but payment is still by paper. Implementation of ACH will yield some small benefits.
		None
		Carriers appreciate being able to file their quarterly returns later, and still meet the deadline. One drawback was that until the existing problems with the IFTA e-credentialing application were fixed, customers expressed that they couldn't depend on the system to be working correctly if they submitted their tax return on the deadline date. We expect this drawback to be resolved with the recently implemented fixes.

Q#	Question	Responses (Sanitized to maintain anonymity)
8	How has CVISN electronic credentialing affected the internal operation of your state's credentials administration office, compared with using the legacy system of credentialing?	Our IRP/IFTA staff has used this system since October. Efficiency studies have not yet taken place.
		Still using legacy system credentialing
		The work received via the internet can be worked in an organized manner rather than the disruption of a "customer waiting" scenario. Work can be planned ahead of time. Also, with less people waiting in the office, it makes it easier to serve those who are waiting.
		It is currently too early in the process to provide qualitative or quantitative assessments.
		For the two previous IRP renewal seasons, no temporary labor was utilized and no overtime was required.
		Yes! We have done a lot of internal interfaces that we would not otherwise have done without the CVISN technologies. We have not however seen the use that we would like from the motor carriers to draw enough of the workload off of our staff.
		It has improved staff efficiency and data quality. In-house IRP back-end processing has eliminated the need for vendor processing at a $233,000 per year savings. Reduced staff overtime during period of heavy renewals by about 400 hours.
		Electronic web-based CVO permitting (size/weight and legal trip permits) went well. Results: Over 20% of all types of permits are now being done via Web. Customer complaints are down. One added plus – employee turnover has been reduced.
		Prior to issuing credentials on the current system, we used a system to issue credentials that ran on a mainframe computer. The software and hardware were owned by the state. Data input was an iterative process, whereby technicians input information using computer coding sheets, keypunch operators hand keyed the information and printed reports, technicians then reviewed the reports for accuracy and made corrections. This process was repeated until all data was verified accurate. This was a very labor intensive and time consuming process. EC provided by IFTA and IRP has reduced the labor for data entry by at least 80% and time for credential issuing was reduced from 3 days to 1 hour or less. The IRP Clearinghouse is another area where we experienced a benefit. Automating the IRP transmittals greatly reduced the amount of human resource required. Before CVISN, the transmittals were manually computed and the records were filed by technicians in hard copy.
		The internal process has changed little, but the volume of work has decreased.
		System is currently in Beta testing with one service agent. Electronic payment options are not yet deployed. Ability to print credentials on site is not yet available (pending deployment of electronic payment options). When fully deployed, state employees expect electronic system to accommodate a percentage of their current workload, enabling them to turn paper applications around faster.
		We do not have a single credentials administration office, but rather the various types of credentials are administered by different offices. The offices have been affected in different ways. One thing which is common across the offices is that each office has had staff promoting the use of the Internet system. The customers of the taxation and finance departments have been the largest users of the system. Some of the staff time saved has been devoted to other credentialing duties.
		Not applicable until new Web based system is in place.
		Automated credentialing aspects not yet in operation to a point that a judgment can be made. In addition, this function will not be performed by one central office but rather by offices run by multiple (Tax, Transportation, Public Utilities and Public Safety) agencies.
		We implemented the tape system, and subsequently the EDI / Bulletin Board system, because we could not otherwise accommodate the volume of credentials processed by the IRP section. The electronic system has enabled the state to meet the demand for credentials processing. With replacement of our IRP mainframe legacy system with a client / server–based system, we will also be enhancing the EDI capabilities, providing a web-enabled transmittal option (obviating the need for the Bulletin Board), and providing upload capabilities directly to the legacy system (obviating the need for manual review and manual upload to the back-end system). The existing system meets the needs of carriers very well, and has eliminated the need for state data-entry of application information from EDI / Bulletin Board users. The system enhancements will improve system capabilities from state employees' perspective, by eliminating the need for manual review of each application received via the EDI / Bulletin Board system.
		Not implemented yet.
		It has decreased the amount of time taxpayers must wait for their credentials.
		Reduced overall volume of transactions by 6%.
		Primarily in reduced workload, which has allowed staff to shift focus to quality assurance of applications being processed.

Q#	Question	Responses (Sanitized to maintain anonymity)
		Three agencies are involved and the experience is different for each. For IFTA, it seems to have caused few issues. For OS/OW, it has been a great benefit and allowed the unit to remain the same size (i.e. understaffed). For IRP, it has caused problems and created another source of questions and issues that the credential offices were initially unprepared to handle.
		Because until recently, not all components of the e-credentialing system were working correctly, the operation was not stable enough to determine how the IFTA and IRP program operation will be changed compared with using the legacy systems. We hope to have more information about impacts and benefits a year from now.
9	Does your state use CVISN safety information exchange?	Yes: 23 No: 9
	What benefits have you observed, as reported to you by system managers, inspectors, other state employees, or motor carriers?	ASPEN -Increased efficiency, accuracy, and uploading time to SAFER. Save 1 hour per day per inspector (30) or 9,000 hours per year. Clerical Data entry - save approximately 870 hours per year. CAPRI - From version 2.0 to 6.0.1 one software package for Compliance reviews, safety audits, and Hazmat is simplified. Able to do 2-page violations in 5-7 minutes versus 15-minutes.
		From the states' perspective, as they implement CVIEWs, and bring all this rich safety and credential status information down to the roadside, they find themselves somewhat all dressed up with nowhere to go. States can use the CVIEW data to access information about the "good guys" – for the most part, the transponder-equipped trucks at present are safe and legal carriers / vehicles. What state enforcement officers cannot do at mainline speeds and have difficulty doing at ramp and scale queue speeds, is to use this data to help identify potentially unsafe / illegal carriers.
		The system has given the participating Ports of Entries information about drivers and vehicles that was not available to them before. Because of the remote or rural locations that some of these facilities are located in, information or data pertaining to vehicles, companies, or drivers had to be faxed or telephoned to them. This system gives them immediate access to this information on a real time basis. This can be invaluable to enforcement agencies responsible to screen large numbers of commercial vehicles at traffic check points in a quick and comprehensive manner. This system allows specific information about individual vehicles, companies, and drivers to be readily available without delay to the officer accomplishing the review and has completely modernized our operations. As more information is added to the system, the benefits to our agency increases.
		Has greatly enhanced the selection process so our inspectors can focus on the carriers that we need to focus on, those with bad safety performance.
		When used in the selection process, some inspectors have increased their out-of-service rate. It can be used to present habitual violation information to the court. Use of Aspen has significantly reduced the manual effort to keypunch written inspection reports, resulting in upload times well below the national average and one of the lowest non-match percentages. Of state police inspections, 92.6% are electronic. Of state inspections, 78.6% are electronic. 90,118 inspections were performed Oct 2002 to Sept 2003.
		Regarding the use of PreView for initial scale facility screening and Query Central to further drill down into safety information, officers at inspection facilities claim that the time to conduct a safety inspection process is cut in half. This is due to downloading of Carrier, Vehicle and Driver information from Query Central to ASPEN 2. The download eliminates the officer from hand keying the information into ASPEN forms. The benefits to using PreView at this time are not clear because most officers have not received the formal training, but training should be complete statewide by March 1, 2004. Officers have reported that using CVISN tools has greatly increased the likelihood of detecting credential and safety non-compliance at weigh station facilities.
		The CVIEW is too new to determine what efficiencies have been gained.
		A state CVIEW has not yet been developed, although all roadside enforcement officers have laptops. They are trained in using ISS to assist with screening. Along with other systems (i.e., CDLIS, Query Central) we are definitely screening smarter.
		We have engaged a vendor for CVIEW deployment and will be implementing CVIEW in calendar-year 2004. Our vendor is providing a function which will enable officers at fixed scales / mobile units to key in a plate or DOT number and receive an immediate response whether the vehicle / carrier is a candidate for further inspection based on credentials or safety status, enabling officers at fixed scales to better identify which vehicles to pull out of queue for additional inspection of paper documents and / or safety inspection.
		The ASPEN system that is used as well as functions such as query central and ISS have been very valuable. Information submitted using ASPEN is much more accurate, accessible and easier to analyze versus paper forms.

Q#	Question	Responses (Sanitized to maintain anonymity)
		All officers have satellite units on their cars. With the satellite units they can upload inspection reports directly from the field, obviating the need to upload inspections via modem at the end of shift. They can also do plate verifications and checks, increasing their efficiency. These capabilities improve officer efficiency, eliminate the need for end-of-shift uploads and reduce turn-around times to get inspections to SAFER / MCMIS.
		Speeds up the selection process. Makes the selection process more objective. Provides a method to allow carriers to improve their safety rating.
		By using ISS, inspectors have reported better selection of carriers/trucks that need to be inspected. Out of service rates went up after officers became familiar with the use of ISS.
		Enforcement personnel were able to concentrate on unsafe and possibly illegal carriers. During 2001-2002 their inspection rate increased about 27% due in part to CVISN capabilities. It continues to grow at about 3-4% per year.
		As a PrePass state, the CVIEW is not used for ES. However, web query windows allow ports and headquarter personnel to review carriers quickly and use the data for permitting, credentialing and enforcement.
		None reported.
		Officers enjoy the electronic information. Their work productivity has improved. It has added value to their roadside enforcement. They have noticed a direct ratio between vehicles identified in ISS as needing an inspection and vehicles placed out of service.
10	Does your state use CVISN electronic screening (preclearance)?	Yes: 25 No: 9
	What benefits have you observed, as reported to you by system managers, inspectors, other state employees, or motor carriers?	Port of entry facility managers have seen a large reduction in the number of CMV that are required to physically come into the port facilities. Some of our facilities are experiencing bypasses in the 40th percentile. This relates into hundreds of thousands of CMV.
		ES to be installed 9/04
		ES has been implemented, reducing the volume of traffic through our fixed scales by 15-20%, effectively increasing capacity at no cost to the state
		We have used PrePass for a number of years, so there has been no change as a result of CVISN. PrePass does save many trucks having to stop at the ports and saves those port officers the time of checking their credentials.
		Reductions in queue lengths and fewer times when the facility needs to be closed due to overflow of stopped vehicles on the mainline.
		In excess of 43,000 trucks were allowed to bypass the inspection station by utilizing PrePass in May, 2004 alone.
		Keeps good carriers on the mainline and moving. Allows for more time to be spent focusing on carrier that have problems. Improves safety as the vehicles are not merging in & out of traffic. Reduced stress on the infrastructure.
		The utilization of bypass technology has enhanced highway safety by reducing or eliminating incidences of truck backlogs on weigh station entrance ramps. WIMs have enabled weight officers to focus their attention on vehicles that are overweight, thus improving our overall enforcement effort. The trucking industry has benefited greatly from experiencing a great reduction in the number of times they actually have to be weighed on static scales and have their credentials checked. Initial indications are that CVIEW will provide the means to allow operators of oversize/overweight vehicles to proceed through the static weighing area without having to exit their vehicles and enter the weigh station for a permit check. This saves them time, reduces inconvenience, and saves them money.
		Motor carrier participation has been minimal.
		For the state, reduces congestion in the scale facilities during busier time periods. Participating Carriers have also expressed a reduction in their travel time on routes where weigh stations are automated for ES.
		Number of vehicles through fixed scales is decreased 15-20% through ES, reducing back-up on the ramps entering the facilities. This has safety benefits (reduced accident potential related to mainline back-up), as well as effectively increasing the capacity of the existing fixed scales.
		It is not possible to determine the value because the use of it is limited to only good carriers and thus the overall population of carriers being screened is limited.
		Reduction in mainline backups due to ramp queuing. We have implemented a pilot project at one port, providing internet access to the SAFERsys.org site. This allows scale officers to enter DOT numbers and verify carrier credential status. To date, the program has been effective in identifying carriers through the scales who are deficient in SSRS and other carrier-based credentials, increasing citation revenues. When the CVIEW is fully deployed, we anticipate additional related benefits. ES has been implemented, reducing the volume of traffic through our fixed scales by 15-20%, effectively increasing capacity at no cost to the state.

Q#	Question	Responses (Sanitized to maintain anonymity)
		We expect to start using ES when our new POE opens next Spring.
		Trucks and carriers who have been pre-screened do not need to come into the inspection stations as often, thereby reducing the amount of traffic passing through. Officers may concentrate on carriers with safety problems.
		Saves time for drivers and POE agents. Allows agents to focus their attention on high-risk carriers. Increases efficiency in checking credentials.
		Preclearance saved carriers an estimated $3 million based on the fact that it costs $1.00 per minute to operate a truck and they save on average 5 minutes if they can by-pass a scale.
		1. Increased efficiency; more trucks weighed. In 2001 at one scale 229,652 trucks were weighed. PrePass and mainline WIM were installed in November, 2001. In 2002, there were 365,512 trucks weighed at the same scale (59% increase) and 333,077 trucks were weighed in 2003. At another scale, 226,894 trucks were weighed in 2002. PrePass and mainline WIM were installed in August, 2002. In 2003, the number of trucks weighed at the second scale increased 38%, to 312,733. 2. Increase in enforcement action. At one scale, where PrePass and mainline WIM were installed in late 2001: (a) size/weight warnings increased from 498 in 2001, to 794 in 2002 (59% increase), to 959 in 2003 (21% increase); (b) weight citations were 280 in 2001, up to 392 in 2002 (40% increase), and 390 in 2003; and (c) MCSAP inspections increased 78%, from 1,654 in 2001 to 2,951 in 2002. At a second scale, where PrePass and mainline WIM were installed in summer 2002: (d) size/weight warnings increased from 1,106 in 2002 to 2,183 in 2003 (97% increase); and (e) weight citations were 355 in 2002, increasing 106% to 731 in 2003.
		Reduced foot traffic at ports, faster travel for trucks, a reward for satisfactory carriers
		Safety at the weigh stations has improved by keeping traffic moving and reducing number of vehicles exiting and entering traffic.
		Ramps/ station were built back when truck traffic volumes were much less than they are today.
		This is difficult to answer, because although we have installed and operated an e-screening system as a pilot project, the absence of maintenance for the equipment has left the system non-operational. There is ongoing work to remedy this situation. However, when it was working, the carriers were pleased with the results because their pull ins were minimized.
		Although we haven't the manpower to see direct results from the e-screening process, we have found that vehicles operating in the e-screening system have a good over all inspection review.
		Benefits to the state are reduction in the amount of traffic on the ramps; more efficient use of staff resources and efficiency at enforcing Agriculture statutes. Benefits to industry include cost efficiency – less fuel use, avoiding stoppage and time savings. Ramps/station were built back when truck traffic volumes were much less than they are today.
11	Has CVISN freed state employees to perform other functions?	Yes: 16 No: 16
	If so, specify what the other functions are and how this change has affected the staff involved.	Credential enforcement and safety.
		4-FTE have additional time to plan and strategize targeted enforcement. Increased '03 inspections by 1262 over '02
		We are able to do more inspections than before and have more officers at the port to keep the trucks on the road.
		Allowed for cross-training to assist in customer service and permitting issues.
		It is hard to directly identify the benefit at this point. CVISN technologies have greatly improved our processes, particularly by interfacing systems and sharing of data. We have noticed some benefit from the carriers using the EC applications, but due to budgetary cutbacks, we have not realized much of a reduction in staff time to allow for placing staff on other tasks due to being freed up by CVISN efforts.
		For credentialing, motor carrier safety staff has not increased, even though the volume of transactions has greatly increased. For Enforcement, utilizing Query Central, PreView and PrePass, motor carrier safety officers can focus more of their time on weight and safety non-compliant carriers, vehicles and drivers. The credentialing process is much faster. EC has reduced the data entry by at least 80% and the time for issuing credentials has been reduced from 3 days to 1 hour.

Q#	Question	Responses (Sanitized to maintain anonymity)
		The credentialing people are focusing more on HVUT and trying to handle hard copy which still is a requirement. Existing staff is focusing more on customer service. The back end of the operation is under contract and will continue to be so. Enforcement is always challenged with the high volume of commercial vehicle traffic in this state. It is increasing yearly. We are able to keep pace with enforcement efforts, despite the increase. This is due to our ability to process reports and inspections electronically and to focus our attention on the problem vehicles. From an economic viewpoint and realistic enforcement perspective, we must not and cannot stop every commercial vehicle in this state.
		We expect that over the course of time, with increased usage of the credentialing system, some staff will be able to be diverted to other tasks.
		It has not freed them to do other functions but increased their effectiveness and as a consequence permitted them to do more of the same function and in some cases allowed that function to be expanded and as a result become more in-depth.
		Less keying of inspection data allowed us to transfer resources to PRISM.
		Lower staffing levels for POE agents. Less data entry. Faster permit issuance. Allows employees to spend more time on inspections and data analysis.
		Staff have more time to concentrate on safety inspections. Inspections have increased.
		We believe the IRP Clearinghouse function will free up staff time to be spent on IRP processing, but our membership in the Clearinghouse is too new to calculate a savings at this point.
		We are very early in the deployment stage and expect the true time-savings benefits to be realized in the medium and long term.
		Allow Agriculture department to more efficiently handle the increase in truck traffic without increasing staff.
		Yes and No. It depends on the location of the activity. While not necessarily freeing staff for other functions, it has allowed some agencies to increase capacity without adding staff. OS/OW on-line permitting, as a part of CVISN, has allowed that agency to avoid staff increases while increasing the volume of transactions. On-line IFTA submissions have reduced the data input task for that agency and smoothed out the workload. But this is definitely NOT true in other agencies.
		To some degree. Because of overall volumes we are able to focus on individual trucks but we have been unable to reassign officers because of volume.
12	How did cooperation or coordination among various state agencies affect your state's deployment of CVISN?	Prior to CVISN the primary agencies with regulatory oversight of the transportation industry worked very closely on mutual issues. CVISN enhanced this cooperative atmosphere.
		While top management and the working level analysts supported the concepts of CVISN, implementation and development of the technologies was not supported by middle management thereby thwarting the effort. Some of the middle management was concerned about other priorities.There are significant differences in governing code between state departments. Some departments are held to strong governing code which does not apply to all other departments. As an example, the department of motor vehicles required the motor carriers to be bonded and another agency did not. The state should establish a mechanism to resolve this type of issue to encourage future cooperation.Another inter-departmental issue, which was identified during the project, was the absence of a uniform data capture and data format standard.
		CVISN required the various jurisdictions to collaborate to define and design the state's CVISN program. This provided good opportunity to have linkages that may not have been possible earlier. We took the approach to create a CVO Steering Committee of high-level managers representing all the jurisdictions involved to offer policy and program direction, funding support, and overall guidance to the CVISN design team and the CVO agencies. This committee was very effective in keeping lines of communication open and advancing the development of our CVISN program and deployment.
		From inception, our state has had good cooperation among state agencies and major municipalities regarding CVISN. Main deployment is 9/04.
		Degree of cooperation has been good.
		We were able to complete all requirements on time.
		The process was much smoother with full stakeholder involvement.
		We have a successful history of inter-agency communication and participation in credentialing and safety issues including participation in the CVISN workshops, development of the Electronic One Stop Shop Business Plan and more recently the PRISM program.
		Unprecedented partnering between multiple state agencies made the adoption of EC possible.

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		We have enjoyed very good cooperation, mainly due to all of our major functional areas being under the same Department.
		Agencies exhibited territorial protectionism which limited the rate of progress.
		The state CVISN team, comprised of people from 4 state agencies and state Motor Carriers, worked quite well together to achieve the common CVISN goals.
		Internal cooperation was excellent and critical to our implementations.
		This initiative could not have moved ahead without the cooperation across agency lines. This aspect has been the strongest component of the CVISN model in our state. Our CVISN team is a model of how government agencies can and should work together. All agencies have cooperated fully, undertaken efforts under their responsibilities, and supported the efforts of the other agencies.
		The cooperation has been good. The change in administration within state agencies has been challenging, but the program has been able to move forward in spite of these challenges, in large part because of strong management within the CVISN team itself, and effective outreach by the CVISN Program Manager to changing administrations.
		Critical issue. The CVISN program could not have been implemented without the commitment and cooperation of the five agencies that have progressed the program. Each agency has fully cooperated with the project manager(s) and when coordinated responses were necessary, staff from each agency came forward and worked together.
		Only two agencies are involved: DOT and Highway Patrol. Cooperation has never been an issue.
		Cooperation is the key to deployment in our state due to the fact that multiple state agencies have ownership of the required data. When lack of cooperation has existed it has made deployment difficult.
		Agency cooperation can clearly move projects forward, or stall them, depending on the degree of cooperation, or lack thereof. There can be endless coordination and little cooperation. Our DOT, an organization with no current authority for CV operations, has been an excellent project leader, receiving statewide ITS earmarks for 3 years running, and distributing them equally to ITS and CVISN applications. The DOT has also worked to balance state needs with individual agency interests / priorities. The CVISN planning process made agencies more aware of the related needs of other agencies. For example, the DOT is now working with another agency (which issues OS/OW permits) with much-needed, updated mapping products and ongoing GIS mapping capabilities to address routing needs. Fixed scale communications will be upgraded to enable other agencies to access the state CVIEW and other central databases.
		We wouldn't have been able to deploy any of the CVISN technologies if we didn't have good cooperation between all of the affected agencies.
		We moved the major areas of CVISN responsibilities into one section (the Commercial Vehicle Division).
		All agencies were very cooperative in the initial planning phases. In the implementation phase, differing agency priorities caused schedule delays. All agencies streamlined procedures, even without technology changes.
		Excellent participation among the three original core agencies.
		On the credential administration side, we had very good cooperation from agencies involved, but the interaction was primarily between one agency and our vendor. Our DOT and state police cooperated well for the most part. This was due to our long-term working relationship and the ability to hold frank discussions on subjects at hand. A Steering Committee from state agencies and the state police of three people made final decisions on any higher level policy or financial issues.
		Our DOT is an umbrella agency that includes all the functions relevant to CVISN. Although that was an advantage in CVISN deployment, the divisions within our DOT still needed to find ways to work together cooperatively. The department-wide buy-in and coordination during our CVISN planning and design phase yielded a good plan for CVISN deployment and helped establish the contacts and working relationships needed to be successful with CVISN deployment.
		From the start, the management team contained representatives from roadside enforcement and from all the credentialing agencies, so their involvement ensured a fair degree of cooperation. The cooperation within this group was immensely important, but these were mostly staff level (non-managerial) representatives and were, in some cases, unable to effect agency policies that CVISN wished to change (e.g. e-payment). Also, state IT initially did not want to be adequately involved with the project and this led to several 'surprises' regarding state IT policies.
		Cooperation was strong, and as systems were designed, key decision makers were kept involved and supported changes in practices.
		Slow to start but did not delay the DOT.

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13	How did the availability of vendors, consultants, or contractors affect your deployment of CVISN?	We had a false start on the EC project. The initial vendor could not produce what was promised and the contract was terminated. This fact set us back about 18 months. The new contractor delivered the system on time within budget and has been extremely helpful with supporting the system during the warranty phase.
		From the beginning, the number of consultants and contractors was very limited. Throughout the effort, what consultants were available was further reduced; in fact, the contractor that our state selected decided to terminate involvement in the CVO arena. This election was made before the contract was completed. Negotiations with the contractor took approximately 9 months before a restart could occur. The software development contractor was located out-of-state and did not have a local office. Future contracts of this nature should include a provision which requires the software contractor to have technical support personnel on-site (or available by telephone) during the initial hardware configuration and software installation process.
		The prime vendor/architect of our CVISN program was extremely capable, cooperative and accountable and was instrumental in keeping the CVISN program on track and timely. The hardware vendor for weigh scale clearance equipment did an excellent job of working cooperatively with the prime vendor to deploy the ramp sorter WIMs, load detectors, loop sensors, and CVIEW data terminals at the Weigh Stations.
		We have had great support from our WIM vendor and several consultants. We are currently receiving CVISN systems support from another state's DOT. We are in the process of hiring an external contractor to design physical CVISN infrastructure for a small construction contract.
		Great support from Consultant in assisting us with CVISN plan and design.
		Had no effect on our deployment. Tasks were completed on time.
		Our consultant has provided valuable expertise in developing our automated systems. They keep us focused and help us digest the abundance of information available as project guidance, implementation documents and from nationwide working groups.
		A vendor was selected through a Request for Proposal process for development of the EOSS Business Plan and accomplished the work in a timely manner. A vendor assisted with the development of the CVISN Top Level Design and Program Plan. We did not have the resources to complete this effort alone.
		Based on early meetings and information, the products appeared to be ready when the actual products did not exist and had to be developed and deployed. This has caused us very significant delays on parts of our deployment.
		Availability was not a major issue. Initially FMCSA contracted with a university laboratory and subsequently the state contracted directly with the same university laboratory.
		The primary vendor/consultant/contractor for our CVISN related systems worked very well with the our CVISN team, which had a positive impact on completion of all deployments related to CVISN.
		The vendors, consultants, and contractors are out there. They are willing to share information in a general way, which helps overall to advance CVISN. Their experiences with various states are shared in a practical way. They bring their insight and experience to bear in new contracts with states moving through the CVISN process. The private sector is truly a partner in this realm.
		The quality of our consultant is great. The CVISN Program would not be where it is today if it were not for our consultant (CVISN State Advisor).
		Another critical issue. CVISN is an "add-on" activity that could not have been built with existing staff. Contract employees (particularly IT related) and vendors/contractors helping to build technologies were required, because insufficient state resources exist.
		There needs to be a better forum for states to determine who can perform these services. The lack of such a forum has made deployment difficult, especially when seeking bids for project components from potential bidders.
		Like many states, we initially envisioned accomplishing CVISN project deployment through use of in-house resources. Like many states, we came to realize that its in-house employees are a scarce resource in high demand, subject to the variable needs of many competing projects and priorities. The state has recently decided to contract out some portions of its deployment to third party vendors (CVIEW) and to engage contractors to assist in design / development of state-owned systems (IRP; IFTA; Transportation Database – SSRS; and, potentially, OS/OW). After 12+ months of limited forward motion, projects are beginning to move forward as a result. It was not so much quality / availability of vendors, but a recognition by the various agencies involved in CVISN planning / deployment, that either the required expertise did not reside in house, or that in-house resources were already engaged 100+% in addressing ongoing agency needs, that has led to the decision to engage outside resources to assist in the deployment effort. In our view, this is a critical lesson learned to stress to other states - in-house resources are generally fully utilized; it is imperative to bring in not only specialized expertise, but, even where specialized resources may not be required, to bring in outside contracted resources to augment in-house resources. It can also be very useful to engage the services of outside system architect / project management resources to help guide project-specific contractors. Without state staff devoted full-time to CVISN deployment, finding time to properly manage project-specific contractors can be challenging.

Q#	Question	Responses (Sanitized to maintain anonymity)
		Initially we didn't have a good response to our RFPs because we didn't have a lot of money for contractual services. In addition, qualified consultants were all located out of state, which causes logistic problems. Once we actually got consultants on board, we developed good working relationships and were able to develop most of our CVISN technologies. However the long-distance relationship still causes problems when trying to complete day-to-day operations.
		The CVISN architecture and program framework provided by a university were extremely beneficial. Vendors and consultants provided strong support, to the extent that funding was available. Lack of full funding caused delays in implementation.
		Somewhat helpful, but on the other hand it got confusing as to who represented whom and what authorities and expertise these folks had.
		Our DOT did not have sufficient staffing in numbers of FTE and in range of skills to produce a CVISN plan/design and complete CVISN deployment. Contractors were used to supplement program and IT staff during the planning/design phase. Contractors were also used as project leaders and programmers to supplement DOT IT staff during CVISN deployment. Vendor products were used when available. Without the use of contractors and vendor products, we would have been far behind in our CVISN deployment efforts.
		It was critical. Beyond the Project Management staff, state personnel were not available for the development of the CVISN systems. Vendors, who continue to support the systems, did most of the project. State personnel were used for Project Management, rollout, data review, and operational activities.
		We are a low-population state with a small DOT. Without consultant support, CVISN deployment would not have been realized.
		Because of lack of funding the first portion (workshops) was performed by in-house staff without the assistance of a systems architect.
14	Describe any issues or problems that arose related to questions of jurisdiction.	No.
		Deployment of the CVISN program required the efforts of 4 different departments. Issues related to jurisdiction were satisfied through the establishment of an interdepartmental task force. Issues were discussed and resolved through bi-weekly meetings held during the development effort.
		In our state, vehicle and driver licensing credentials are issued by Driver & Vehicle Services unit of a public safety department (i.e., IRP, IFTA, CDL). Roadside enforcement and weigh scale operations are conducted by the State Patrol, a unit of the public safety department. Carrier operating authority credentials, SSRS, HM permits, oversize & overweight permits, and CVISN project management is the responsibility of Dept of Transportation. Cross-organizational business planning and operational support was (is) the biggest obstacle to an effective/efficient CVISN deployment. Although the CVO Steering Committee helped reduce some obstacles it was not enough to deal with all of the institutional issues and organizational resistance that arose due to CVISN implementation.
		We have a State Trooper assigned to us from the public safety department to support Commercial Vehicle Enforcement efforts for safe and efficient CV movement. We are coordinating data exchange between the Department of Motor Vehicles, Public Safety, Highway data, traffic safety. We required support from our Information Technology Division.
		None.
		No unexpected coordination was needed.
		The State Tax Commission, Transportation Department, and State Police worked closely to identify areas of common concern and resolve issues relating to program responsibility. In all cases the issues were clear and easily resolved by cooperation among members of the CVISN working group.
		No such issues have been encountered to date.
		Very few issues.
		There have been issues between infrastructure deployment and operations, e.g., deploying the network to scalehouses and communicating through firewalls.
		No new or unexpected forms of coordination were encountered, as each state agency accepted their roles regarding CVISN participation. No SLAs or MOAs between agencies were required.
		We had already migrated to a one-stop operation prior to CVISN and therefore few if any functions crossed Departmental lines.
		Much of what was attempted in CVISN deployment was underway in various forms in the agencies. The key to success is understanding the agencies, their resources and priorities. In bringing the systems together we were able to get agencies to share resources that they had already developed. This way other agencies did not have to invest in building a system that existed elsewhere. The success was a result of bringing the partners together where they could state what they needed and share what they had in place.
		Personnel turnover has been a challenge internally. Interagency cooperation has been uniformly strong in our state.
		Five agencies were involved. Staff members from each agency met together to discuss common issues. After a couple meetings it became apparent that a formalization of the working relationships being developed would be a positive step. The heads of the agencies signed an MOU creating an interagency group and an agreement to work together. The formalization of the group and the support from upper level management created an environment where cooperation and coordination became the norm.

Q#	Question	Responses (Sanitized to maintain anonymity)
		CVISN has bridged multiple state agencies and due to its broad scope, and far-reaching implications have often necessitated new or unexpected forms of coordination and confusion.
		Early on, the CVISN Team made a conscious decision to ignore some political realities to move the overall program forward. For example, the agencies operating our fixed scales do not have size and weight enforcement authority. The team discussed whether it should focus on this institutional issue and work to convince the legislature to change this situation, and decided that it was in the best interest of the state to move forward on other fronts where statutory authority already existed – replacing antiquated legacy systems, implementing automated credentialing, joining national Clearinghouses, implementing the state CVIEW, upgrading communications to scale houses and mobile units, building relationships among the various agencies with CVO responsibilities, and tackling sticky political issues only when we had accomplished the many other aspects of CVISN functionality / coordination that were more easily accomplished. There is currently a bill in the state legislature which would move all CVO functions except MCSAP and size and weight enforcement from three other agencies to the DOT. The CVISN team has chosen to continue moving forward as if the ultimate location of CVO functions were not in question. To do otherwise would bring all projects to a grinding halt.
		While we had good working relationships with each of the affected CVISN agencies, we did run into a few issues when it came to maintaining the new software. Most agencies did not receive dedicated CVISN funds, so they had to assume new duties without adequate compensation and did not have dedicated funds for future operations.
		The DOT and highway patrol have always had a cooperative relationship in Motor Carrier Safety. The biggest problems were in schedule coordination. CVISN resulted in better definition of agency responsibilities, and a more simplified organization structure. No problems or issues on the credential administration side of the deployment. State patrol and the DOT developed an MOU outlining most responsibilities. Most jurisdictional issues were covered by state law pertaining to agency functions, e.g., enforcement, highway construction.
		Minimal issues since all CVISN programs are within one state agency, the DOT.
		For CVISN development, these institutional issues were handled up front by involving all the pertinent agencies in the project team, and were not an issue. The multi-agency effort started with RFP preparation, evaluation and continues to this day. There is an issue concerning maintenance and support of the weigh stations. Weigh stations are owned by one agency (Transportation) and operated by either of two others (Motor Vehicles and Public Safety), depending on the location. As a result, there is no "standard" support for the stations and, critically, there is no maintenance and support budget for the facilities. This has been an ongoing issue which the state is working to resolve.
		The CVISN Program has brought together agencies that already were under one roof and in constant communication. There were no jurisdictional issues that delayed or impacted planning or deployment.
		Yes, automated credentialing resides in DHSMV and trying to get their total commitment even though the project is DOT funded, has been slow.
15	Describe your state's approach to balancing data privacy with data availability.	No. We allow trucking companies to view event data in our version of CVIEW once they are given a password. Certain companies use this data to more efficiently manage their drivers and the hours of service regulations.
		Requirements for this issue were developed and recommended by an interdepartmental task force which was made up of information security officers of the departments involved.
		There is very little data that is considered private (by state statute) that resides on our CVIEW.
		Currently, all data is considered confidential. We have had one carrier ask specifically for their Weigh In Motion data, and will try to accommodate this request when transponders are deployed.
		We are trying to insure that only qualified, registered users access data pertinent to them.
		This was not an issue.
		In most instances the data provided is public information subject to our public information laws. An exception to this is data gathered and maintained by the State Tax Commission which is confidential. The working group was able to follow statutory guidelines regarding the use and availability of information.
		Implementation must comply with the state's Internet Use and Privacy Policy and such was stated in related Request for Proposals.
		This has not been an issue to much extent except for the IRP credentialing process where we need electronic verification of the HVUT which the IRS cannot provide, and as it currently stands we would not be able to obtain since we are not a revenue agency.
		IRP registration renewal is hampered by the lack of an electronic verification for HVUT tax payment. The sharing of IFTA data is limited by legal restrictions.
		Data exchanged between state agencies for purposes of supporting CVISN did not raise any privacy issues.

Q#	Question	Responses (Sanitized to maintain anonymity)
		All privacy and security features have been developed as part of our application.
		Driver confidentiality/privacy has been an issue in the past. With security concerns, it is hoped that this information will be more accessible. Information privacy has not been an issue to date. Firewall protection of enforcement information systems is meticulously maintained. One agency indicated that Federal guidelines on privacy protocol has been lacking, making it more difficult to know what information is public.
		This issue has led to some difficulties for the agencies involved and it is not totally resolved. We still experience some data sharing issues because data, especially tax data, is protected by statute. We have developed some work-arounds and are pursuing statute changes to make the data more accessible to appropriate parties.
		Enforcement, by law, has always had access to driver and vehicle data, so this should not be an issue.
		This issue has arisen particularly as it relates to taxation data.
		We have always pursued the original goal of CVISN "Interoperability." This caused problems later in the development process when FMCSA allowed a business model that did not follow the interoperability goal. Representatives from that e-screening provider made statements that caused our trucking industry representatives a lot of concern. It took much effort on our part to work with industry to dispel the misinformation. A stronger role and commitment from FMCSA to follow the original CVISN goals would have been very helpful.
		We have tried to insure that only qualified, registered users access data pertinent to them.
		Interagency data privacy didn't cause many problems because our state's agencies were already sharing information. CVISN data was protected simply through secure Internet protocols. The way one e-screening provider sees the data privacy issue prevents all states from achieving interoperability in E-Screening systems.
		We abide by our jurisdiction statutes and administrative regulations, trying to balance between need to know and our ability to provide information.
		This hasn't been an issue with us. We are a PrePass state, so data sharing related to e-screening is covered by PrePass policies.
		The state had some existing agreements concerning the sharing of data, which the project used and expanded upon where necessary. We have tried to limit the available CVISN data to what is publicly available, and have limited a carrier's view to their own information. State users, who can view any data, sign user agreements before being given access to the system.
		Varying levels of access to data are being developed so that the state will allow employees to only see data they need to see.
		Since we are a HELP, Inc. state this has not been an issue.

Q#	Question	Responses (Sanitized to maintain anonymity)
16	How has deployment affected your state's approach to maintaining data quality?	We have had in place since 1986 an electronic data gathering capability. CVISN technology and our re-engineering efforts enhanced the quality of data. ASPEN improved the efficiency and accuracy of roadside inspection data. CAPRI has improved efficiency and accuracy of compliance reviews, safety audits, and Hazmat.
		N/A until fully deployed
		The interaction between multiple systems and the Federal database will allow us to maintain higher data accuracy than was possible before.
		We continue to maintain a high level of data quality. CVISN helps us meet this goal.
		CVISN data exchange has not yet been implemented.
		We are very concerned with the accuracy and availability of timely updates on data and there have been issues with the reliability of data, normally due to the timeliness of the data refresh we can get from SAFER, etc.
		It has been complimentary by improving timeliness of data input and better editing of data.
		Information relating to interstate safety and credentials can now be verified in an automated fashion, whereas before CVISN deployment verifications could only be done by contacting the agency responsible for authoritative data by telephone, fax, or email.
		CVISN has helped us tighten the systems. It probably would have happened anyway, but CVISN provided a reasoned blueprint.
		MTD is currently within the Department of Public Safety. The DPS has a focus on security and data privacy.
		We have consistently striven to maintain data quality in its files. CVISN has had very little effect on the data in the various legacy systems. We have found that where several legacy systems contain information regarding a single carrier, the data has been very consistent.
		It has forced some state agencies to look at their data quality and seek means to improve it.
		CVISN deployment has improved the data quality and timeliness for credentials, safety, and e-screening activities.
		Certain aspects have improved data quality or shown areas of need for improvement.
		We have had to expend a considerable amount of time in this area, particularly with cleaning up bad data in the IRP and IFTA systems.
		CVISN deployment has highlighted data quality problems and the need to address them. Examples: (1) Loading our CVIEW database brought to light problems with inconsistencies between USDOT numbers and state account numbers. These problems were addressed to ensure consistency. (2) Reviewing bridge and highway data for use in OSOW automated routing highlighted data discrepancies that are now being resolved, and spurred an effort to set a new policy for timeliness of data updates.
		It has been in line with the existing policies. It has improved existing data quality by requiring individual organizations to be accountable to a "bigger picture" of what commercial vehicle information is.
		The CVIEW will become the main source of information and all efforts are being made to ensure it is accurate and in sync with SAFER.
		Not to date.
17	What institutional barriers did you encounter?	No.
		The major area of barriers was in the level of security and privacy of the departments involved. Each department based upon what was perceived as their own requirement was at a different level of security. How these issues were resolved was the creation of an interdepartmental task force that was specifically constructed to address the issues.
		Encountered problems in merging CVISN projects that required construction with larger DOT projects to leverage resources & shorten timelines. DOT Projects easily fall behind schedule due to short 4-month construction season. We have to clear a large hurdle in interfacing data between CVISN and legacy systems. N/A until fully deployed
		We needed legislation to be able to enforce some of the sanctions required by CVISN.
		As mentioned earlier, the State Tax Commission has strict rules to maintain the confidentiality of taxpayer information. When the working group identified a need to share Employer Identification Numbers (EINs) the options were thoroughly discussed. A way was found to share this information among the participating agencies.
		No significant issues were encountered to date.
		Very few if any.
		The major barriers encountered involved network installation (who was responsible for what) and firewalls when moving data between agencies.

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		None. In 1994 we already had plans for automating the IRP, IFTA, and SSRS credentialing, as required by state law. No laws had to be changed as a result of CVISN.
		Previous managers guarded their systems, fearing that use by other agencies would negatively impact on their system/equipment. Key retirements opened a greater opportunity to communicate and cooperate. The paradigm shifted.
		Not really a problem.
		The lack of policy or experience in certain areas led to some issues in the area of e-screening technologies, the use of electronic payment methods, and electronic signature. Interactive Internet commerce is a new endeavor for state Government and we continue to work through issues of electronic validation, electronic accountability, and electronic payment methods. ES technology is also becoming more varied and with electronic license plate readers and or vehicle identifiers, the state is moving in the direction of electronically screening all vehicles, rather than only those who enroll in screening programs.
		We do not anticipate any barriers from our existing infrastructure. Funding to complete CVISN is the major issue.
		Barriers in each of the mentioned areas were encountered. Where they could be overcome substantial progress was made, but where they could not problems have arisen. Purchasing is one area that has presented unique problems. Exchange of certain data (i.e. tax information) was initially a problem that required legislative enactment which too was overcome. Coordination of activities, expenditures and contracting for work has been and continues to be a problem.
		It was very difficult to follow a moving target with regards to both CVIEW and Safer connections. It appears that each state had to go in their own direction to try and develop the necessary software. There was no long-term commitment from FMCSA for technical support or funding. Another big issue revolved around the use of credit cards or e-checking to pay for the required CVISN e-government activities. States are not allowed to pass on the credit card transaction fees to our customers; this results in a net loss of revenue to the state for complying with the CVISN requirements. Yes. Purchasing rules hamper procurement of certain items. Regulations impede deploying some web-based solutions and have had to be planned around.
		We did not encounter any significant institutional barriers. We did, however, at the beginning insist that our EC system would be internet based with a direct connect to our systems, which the initial CVISN deployment model did not allow. We had to convince USDOT that our approach should be considered CVISN compliant.
		All CVISN-related programs are within one state agency (DOT), but it was unclear at the start which division (IT, motor vehicles, enforcement, planning) should take the lead in the CVISN effort. Motor vehicles was assigned as the lead division. This required the motor vehicles team members to become more knowledgeable about the IT and enforcement aspects of CVISN, and to establish methods of information sharing about projects and finances to allow for overall monitoring of the CVISN program.
		The state IT department has unwritten policies that were encountered after the Project had signed contracts with vendors. The first issue arose from an unwritten policy that a state web application cannot connect to a system or database located in another organization. In combination with another policy that all state web sites must be hosted at the state's IT department (DOIT), the policy has the effect of isolating all application servers in the DOIT building, which was neither intended nor desired by the agencies responsible for implementing the CVISN project. Another unwritten policy is that the state IT department does not allow "desktop" access to servers at the state IT department. This includes doing ad-hoc queries and viewing of the servers to monitor performance and data integrity. The issue is that a vendor's contract, including 5 years of maintenance and support, were written and priced without knowing the conditions under which work would be performed. These issues with state IT are still outstanding. Probably the most tenacious institutional barrier is the lack of a comprehensive state-wide policy and method for accepting electronic payment. While the state has a policy allowing e-payment, it is left up to each agency to implement this in its own way. The results vary by agency. One agency immediately implemented credit cards, but others avoided doing anything. In another agency, some of the involved staff do not appear to wish to implement e-payment. A third agency, with a low number of low-priced credentials, regards any overhead cost as prohibitive. The big problems with e-payment have been the absorption of transaction charges into individual agency budgets and, for credit cards, the inequity of customers who pay with credit cards and receive rebates, perks, etc. versus those who pay with cash.
		Our state DOT's security policies presented barriers to checking safety status at the time of registration. Instead of using CVIEW, the department of motor vehicles decided to download PRISM files, and check safety status using their own IRP database. State DOT security policies also affected the consultant's ability to implement CVISN, due to their refusal to allow a VPN connection. Implementing CVIEW at the state DOT was hampered by the DOT staff's other commitments. The project did not receive sufficient priority to meet target dates, and is still struggling.
		Funding issues have been the main barrier. PRISM may be delayed because of legislative change requirements.
		No.

Q#	Question	Responses (Sanitized to maintain anonymity)
18	How did your deployment fit in with any institutional barriers you encountered?	Did not achieve deployment status.
		N/A until 9/04
		N/A until fully deployed
		We deployed without authority to sanction. That authority is being requested in the upcoming legislative session.
		We closely followed our Program Plan, flexing when needed. We feel that the development of a Program Plan is a key element to successful implementation. When stakeholders agree to the elements and schedule in the Plan it tends to bridge institutional barriers.
		No significant issues were encountered to date.
		Institutional barriers were addressed incrementally resulting in an evolutionary deployment.
		No institutional barriers were encountered as a result of CVISN level 1 requirements. The personnel employed by the state Departments of Transportation and Justice work more closely together.
		Very well.
		Some components worked quickly and others (which seemed simple) took much longer than expected. A timeline is helpful from a general standpoint, but certain things may not be ready to move, due to an institutional barrier. This must be recognized in CVISN deployment. Things do not necessarily follow a formula; the team must be flexible and intelligent enough to accomplish what can realistically be done, and be willing to take a fresh look at the approach when needed.
		All agencies worked together to remove the barriers so the deployment could take place.
		A number of systems were deployed independent of the CVISN effort. This has caused a variety of issues to arise. While on one hand their deployment met the requirements of CVISN, the fact that they were done independent of one another created other issues and in some cases made it difficult if not impossible to utilize some eligible funds since projects were done outside the CVISN framework.
		Delays in CVIEW implementation caused our State Tax Commission to take an alternate approach to PRISM deployment, using separate PRISM files. In spite of the disjointed state IT policies mentioned above, we are currently running our applications. We are also lobbying for the full-scale implementation of ACH.
		There were group meetings between different state agencies where problems were discussed and resolved. There was a steering committee that provided policy oversight to ease deployment and mitigate institutional barriers. We also created a design/deployment team consisting of members of each agency.
		A multi-divisional steering committee and work group were established to provide oversight of the deployment effort by all involved areas.
		N/A.
19	Conversely, how did deployment bring about changes to the established institutions in your state?	We gained some efficiencies in the credentialing enforcement arena. Old points of view concerning the need to physically check every vehicle gave way to the idea of "why always check the good companies, when we need to take a closer look at those companies that are noncompliant."
		More interdepartmental efforts.
		CVISN has allowed a better discussion among the jurisdictions and partners on general CVO regulatory and enforcement activities.
		N/A until 9/04
		N/A until fully deployed
		None that we know of.
		We communicate better and more frequently. The cooperation among agencies that was fostered by the working group was another key element to a successful deployment.
		No significant issues were encountered to date.
		Moved us in the electronic payment direction for multiple credentials.
		It improved cooperation and understanding.
		There were no changes in the way our agencies conducted business as a result of CVISN level 1 requirements.
		Limited change was required.
		The agencies really worked as a team. Anytime this happens...it is a good thing!
		The interagency cooperation that began with the staff from the various agencies has increased. Operational units staff within each agency have cooperated with each other when issues with carriers arise.
		It has helped to increase coordination and communication between agencies but will require even more work in the future.

Q#	Question	Responses (Sanitized to maintain anonymity)
		Agencies now share more data and resources.
		We are working toward solutions to better serve the carriers. Electronic registrations and e-screening are two of those.
		No major changes occurred. State transportation agencies have always worked closely on traffic safety issues. Certain offices within each agency were brought closer because they were working towards the same goal.
		Our state's Dept. of Transportation, Department of Public Safety, and Tax Commission personnel communicated better because of CVISN meetings and joint projects. The CVIEW database provides much better information for roadside enforcement and E-screening.
		The implementation of CVISN hastened the partial implementation of ACH payments and legitimatized the use of credit cards to pay for state services. And, in some agencies, this was done without having to pass on convenience charges to the customer.
		Establishing a better flow of information among DOT divisions about CVISN project costs helped to provide accurate status reports about funds available for the overall CVISN program, and solid plans for funding individual deployment projects.
		CVISN elements have not been deployed long enough to detect institutional shifts.
		It created trust and a new willingness to work together.
20	What were the personnel or human resources constraints?	We were firmly entrenched in the electronic arena before CVISN.
		Within all departments involved, there was a shortage of trained personnel available. Most of the legacy systems involved were developed many years ago using now antiquated software systems. CVISN was constructed to interface and not change the multiple legacy system interfaces. Lack of knowledgeable trained state staff had a detrimental impact on the development effort.
		The lack of trained staff from each agency involved hindered better understanding of CVISN concept model, adoption, and progress of standards.
		We experienced multiple CVISN managers due to staff turnover during the 3-year period. Information Technology resources are shared in the Division and we have lacked dedicated IT for CVISN deployment.
		None
		We were adequately staffed to complete the task.
		We encountered some staff turnover among the members of the working group. This problem was overcome by communication and patience among the members. High-level staff turnover among the CVISN Steering Committee had no effect on implementation.
		No significant issues were encountered to date.
		Lack of available tech staffing, lack of available enforcement staffing, lack of adequate staff to do outreach or advertising efforts.
		A problem is adequate staffing levels to actually inspect credentials/vehicles that are pulled out of the queue at fixed scales; perhaps FMCSA could consider a funding pool similar to MCSAP funding to augment staffing levels at fixed inspection sites that are not operated by the MCSAP agency.
		Limited availability of knowledge experts and turnover constrained progress.
		IT infrastructure already existed prior to CVISN deployment as did all software and hardware required to support CVISN systems. This is due to the fact that we contracted the lion's share of CVISN development, deployment, and maintenance.
		We were not and never will be able to devote full-time employees to this project. All work was integrated into existing work schedules.
		Enforcement and credentialing areas both faced staffing challenges. It is important that the second team be well trained. More important than ever, we must use technology to provide solutions when human resources do not keep pace with the job function/demand. This the old adage of the necessity to work smarter, not harder.
		There was both a lack of resources to roll CVISN out in a quick and efficient manner and there was a fairly constant turnover of staff, especially at the system architect level. Because of the nature of state government staffing, there were changes to the state staff at every level. Staff receiving promotions were often removed from the CVISN projects to other areas. The system architect position was filled by four different people and the managers from most of the agencies were different at deployment than at project initiation. The new staff needed time to absorb institutional knowledge and the constant turnover led to resolved issues being revisited. Additionally, a determination was made on the required level of staffing to obtain rollout goals. Positions were created; however, all the positions were not filled. The above difficulties left the original timelines unreachable.
		IT staff resources are limited and are not assigned solely to CVISN but, to date, the project is on schedule.
		Budgetary freezes on hiring became an issue.
		Waiting for in-house resources to be freed up has delayed initiation of several projects by 12-18 months; we are now at the point where we are engaging outside resources to assist in our deployment.

Q#	Question	Responses (Sanitized to maintain anonymity)
		All of the CVISN Team members have regular jobs that also required their attention. Because of the lack of a long-term funding commitment for CVISN, we were not allowed to hire additional FTE's to do the extra work. We also had difficulty finding anyone with the required experience to work on the CVISN technologies.
		Beyond the Project Management staff, only very limited state personnel were available for the project, so it was entirely developed by vendors and consultants. In some cases where state involvement was necessary, the project needed to wait for months until personnel could be found (e.g. finding personnel to review a permit routing database or review the accuracy of IRP test transactions)
		Our state never received its full share of CVISN funding. Most CVISN deployment was accomplished using state funds. Projects were delayed due to lack of internal staff time and lack of funding for consultant help.
		Money
		We had to contract for some specialized technical services and expertise.
		We had to shift folks who had been previously processing IRP and IFTA work over to a liaison role, handling issues and questions from our carriers using the EC system.
		Particularly in the IT area, there weren't enough in-house staff to handle all the development work. Additionally, some of the skills needed (e.g., web development) weren't available from in-house staff.
		Consultant help has been relied on heavily in the absence of trained state personnel.
		Lack of committed IT resources.
21	Describe any other institutional issues you observed that would be of interest or value for other states considering a CVISN deployment.	To ensure that institutional issues are resolved, multiple task forces should be established under direction of a multidepartmental steering committee. For example, task forces should be established for security, technology, and policy. In this way, the correct resources would be used to address concerns.
		Sufficient effort must be put into having adequate cross-organizational involvement and support.
		N/A until fully deployed
		We recommend that staff turnover be accepted as inevitable. The working group should maintain good meeting minutes documenting decisions and justification. Participating agencies should have clear policies, procedures, short-/long-term goals and written responsibilities.
		None
		A senior executive champion for the project is essential.
		An executive level champion to support CVISN related deployments is essential.
		The CVISN coordinator must be flexible and neutral. It has been an advantage not to be in enforcement or in credentialing. This way there was never a bias over another system. Each group could be objectively integrated for their unique strengths and weaknesses.
		The biggest issues are the lack of a long-term funding commitment for CVISN activities. When states comply with the CVISN directives, we end up with a net loss of revenue. This is due to the fact that states cannot pass on the transaction fee costs associated with credit cards and e-checking. Every time we allow our customers to use a credit card to pay for the credentials or registrations etc., we have to pay the cost of the transaction fee, which results in a net loss of revenue to the state. The higher our CVISN goals for electronic credentials, registrations, etc., the higher our losses.
		Deployment of roadside data collection methods has improved data quality and timeliness as well as reducing the need for as many data entry staff.
		Depending upon a state's organization, CVISN deployment will involve many different working groups within an agency or different agencies. All of these groups should be brought "on board" as early as possible in the project life cycle. Moreover, industry groups were key for Project steering purposes and in identifying the scope of services to be offered by the Project.
		1. States should look for other funding sources to supplement Federal grants. 2. The state Trucking Association's involvement in the CVISN working group was very helpful. 3. The time lapse between planning and deployment of CVISN systems was discouraging. 4. When CVIEW deployment gets bogged down, states might consider hosting the CVIEW database at another agency, or a private facility.
		Within government there are always the "turf and ego" issues. We found the best way around those was buy-in from all parties through the use of the steering committee and weekly/monthly team meetings of all stakeholders.
		We found it beneficial to dedicate specific in-house and contract staff to handle the major CVISN program responsibilities. This ensured the plan was completed on time, deployment projects stayed on track, and funding was available and accounted for. If staff had not been assigned to cover these responsibilities in addition to normal day-to-day activities, we wouldn't have made progress as quickly as we did. We also found it valuable to establish an inter-divisional CVISN steering committee and work group early on to build cooperative relationships and share information across the department.

Q#	Question	Responses (Sanitized to maintain anonymity)
22	What were the most challenging technical issues in deploying CVISN for e-credentialing?	The multitude of technologies used by the various legacy systems and the lack of technical staff supporting the maintenance of the legacy systems. The lack of current documentation of the legacy systems.
		Trying to integrate separate IT infrastructures of two separate agencies to provide seamless exchange of data.
		IRP & IFTA exempt. Automated a Trailer Permit Registration for 1 carrier that has an electronic portal exit at a major port. Working with several legacy and/or manual systems to merge permit data is challenging.
		Will probably encounter several legacy and/or manual systems to merge permit data that will be challenging.
		Integrating multiple legacy and vendor based platforms and finding a solution suitable to our state's relatively low volume of activity.
		The deployment of our system required an extensive system debug by the contractor which resulted in delays. There are continuing service/maintenance issues relating to this system. Motor carriers have reported problems with their firewalls and other related system security issues.
		EC has not been deployed.
		Legacy system interfacing was a challenge.
		Use of EDI and developing systems and the interfacing of mainframe and client server systems.
		1. Initially, the architecture required the use of EDI for data exchange, however technology had progressed to the use of XML. 2. Obtaining interface specifications.
		Setting up the WAN/LAN connectivity which provided a means for all jurisdiction users to access credentialing systems in one town. The most problematic area is for printing documents LAN to WAN.
		SAFER information exchange.
		Bidding under our state guidelines has been onerous for our credentialing team.
		Trying to link a variety of credentialing legacy systems residing on a variety of computer platforms at various agencies, at various physical locations.
		It's too premature to determine, but assume that it will be the CVIEW interface.
		Ensuring that all systems could properly communicate with one another.
		To be determined.
		The biggest challenges were the development of CVIEW and the connections to SAFER. It appears we were trying to catch a moving target and when we did finally catch it, the rules were changed. We were never told that a query windows development would also be needed before the CVIEW could be used at non-ES ports of entry. FMCSA did not have a working CVIEW that all states could use. Each state had to develop their own CVIEW and many states did not have the expertise to do it. Consultants were not available at a reasonable cost, and each one had their own version of CVIEW. If a state accepted the consultant's version, they had to work out a long-term contract for support. Since there is not a long-term commitment for funding by the FMCSA, this leads to additional costs for the states. We also have difficulty getting information from Volpe in a timely manner. Another big issue for those states wanting to get into electronic permitting and routing is the need for good GIS data to develop a roadway network. A standardized set of GIS specifications and requirements for defining bridge locations and roadway networks is needed before commercial vehicle routing can be developed. These standards should be incorporated into the ITS Architecture so that states can share their networks and provide the capability of regional CVO permits.
		Limited these issues by contracting.
		On the IRP/IFTA side of the deployment, the most challenging technical issues surrounded network security and routing of data.
		Vendor had a really difficult time creating valid XML files for IFTA and IRP transactions. State DOT security issues created challenges in implementing and using the CVIEW database.
		Integration of data from multiple systems with multiple vendors and agencies. This was expected, as was the issue of identifying the source of a problem in this situation. Ongoing connectivity issues with federal systems. Security issues for sensitive information (e.g. SSN).
		The most challenging issues related to vendor products—how to get the products customized to meet our needs, and how to establish connections with vendor products (i.e., a VPN connection to a vendor product).
		Unknown at this point. EC has not been deployed.
		(Commitment by DHSMV, still not deployed.
23	What were the most	Establishing a technology bridge between the legacy system software with the software of the CVIEW data base management system.

Q#	Question	Responses (Sanitized to maintain anonymity)
	challenging technical issues in deploying CVISN for safety info. exchange?	We decided to deploy ASPEN to all CVE. The cost and time was more than anticipated. National software upgrades are demanding, unscheduled and ongoing. Lack of wireless infrastructure was a problem. Mobile communications are a tough nut to crack at present for many large, sparsely populated western / midwestern states. Satellite cannot interface with Volpe systems; CDPD is too slow; broad band wireless and wi fi are limited coverage; 800 MHz is expensive and constrained by topography. Would be beneficial if Volpe could move up priority of satellite access to SAFER, Query Central.
		Getting CVIEW deployed presented the greatest challenge. Selecting the best CVIEW and platforms was a key decision. Having to change our applications for the new SAFER 4.2 XML model during the last few weeks of the project was a final challenge.
		The process has gone pretty smoothly to date with only minor problems encountered with SAFER VPN and AAMVAnet issues.
		SIE (CVIEW/SAFER) has not been deployed.
		Data communications, particularly wireless.
		LAN/WAN interconnectivity between SAFETYnet and ASPEN for sharing state specific information, such as weigh station location and officer lists, etc., between all laptops and PCs statewide in two agencies. PreView deployment using XML interface between SAFER and PreView was difficult to develop and deploy. Maintenance of XML is also difficult due to the frequent changes made by the ACCB.
		SAFER information exchange. We have had difficulty loading our complete registration file to SAFER. Technical staff continue to work closely with Volpe technical support, but to date we have not had adequate success. It is our concern that if the size of our file is difficult for SAFER to handle, the problem may only get more complex as additional jurisdictions begin to send complete vehicle snap shots to SAFER.
		CVIEW. We will get there...some other components had to work out first. There is an advantage in being later in the process. We are gathering information from success/failure stories of other states.
		VPN from Safetynet to SAFER; issues are both technical—firewalls, security settings, etc.; and institutional—policies, procedures, getting to the right person, authorizations, etc. on both ends. DPS Network Environment—ongoing network improvements require continual adjustment to interfacing CVISN systems Volpe's Network Environment—ongoing network improvements require continual adjustment to interfacing CVISN systems (UAS deployment is a recent example) Communications—west, distance, numbers
		Finding a communication method that could be used across the entire state. We deployed five different technologies until recently when we were able to deploy a single wireless communication technology.
		Too early in development to know or comment on.
		Ensuring that proper communication with field systems could be established and that all systems continue to receive timely updated information.
		We have satellite units in each of our MCSAP mobile units. However, satellite systems cannot yet deal with internet protocols, and SAFER is not yet "satellite" ready. The state is thus waiting for its satellite vendor to develop capabilities to enable internet access to SAFER / Query Central, and / or waiting for FMCSA / Volpe to develop satellite interface capabilities. In the meantime, we can access systems only through the OLETS portal on the DPS networks (NLETS, OLETS and SafetyNet on the DPS network).
		Poor coverage for cellular modems. Developing the SDCVIEW and establishing the SAFER 4.2 Connection. The development of our statewide GIS roadway network was also very challenging.
		CVIEW development. Determining best practices for establishing this system.
		SAFER 4.2 wasn't operational until late in our CVIEW development process, delaying our ability to test SAFER-CVIEW connections. Additionally, some expected functions were not included in SAFER 4.2 (e.g., subscriptions; automated CVIEW to SAFER queries).
		Integrating data from the legacy systems.
24	What were the most challenging technical issues in deploying CVISN for e-	Still deploying in 9/04 Deployed Pre-Pass which reduced or eliminated challenges with cost and procurement.
		We contract with HELP, Inc., so there was no challenge.

Q#	Question	Responses (Sanitized to maintain anonymity)
	screening?	Initial difficultly completing test period for the WIM to meet specifications. Additionally, vehicles with stiff suspensions, as in log trucks, have been difficult to accurately weigh in motion.
		No significant issues were encountered to date.
		1. Lack of data on out-of-state motor carriers and vehicles. 2. System stability—lightning strikes, electrical power outages, moisture in roadside cabinet, hardware failures, maintaining proper configuration, WIM calibration, keeping up with SAFER evolution.
		Modifying the bridge compliance calculations within the HELP, PrePass software to support our LCVs (Longer Combination Vehicles).
		We used PrePass and have had great success.
		This an exciting arena, where ITS can really make things easier and smarter. Interoperability is the biggest obstacle. This is a business obstacle, not a technology problem.
		We have two issues that continue to create ES issues. First, there is inadequate timely data to screen against. We believe this is a nationwide issue. No repository(s) hold up-to-date data. Second, the ES technology to do effective screening is only now becoming available. Currently, screening relies on voluntary entrance by motor carriers into screening programs. The number of registrants in our region is minimal and with only one other regional state fully deploying e-screening, it makes transponder screening almost useless.
		We will likely not have ES in the near future.
		Unknown
		Construction of a Port of Entry. Developing the CVIEW and establishing a communication link between the CVIEW and the Roadside Operations Computer. Upgrading the Roadside Operations Computer to be SAFER 4.2 compliant.
		Deployed Pre-Pass. This reduced or eliminated problems associated with cost and procurement.
		Integrating PREPASS into our CVISN architecture requiring a "dual path" data query system to be designed and implemented.
		SAFER was not up and running as was envisioned initially. The ability to exchange needed information was not there. On the deployment side we had issues with tracking vehicles, matching vehicles and getting pictures of vehicle to match the data.
		Keeping the equipment operational. Besides the already mentioned maintenance issues, we had a problem with the mast arms, which were removed and replaced after only 6 months.
		Poor data quality was an issue in extracting credential information for ES. (Duplicate registrations, missing carrier numbers, duplicate transponders)
		We have been unable to get an agreement to update PrePass by direct updates from our CVIEW to PreView; as a result, we are relying on quarterly flat file updates that are costly and inefficient. Additionally, a post-implementation challenge has been unreliable WIM equipment that has been down for lengthy time periods.
		An ongoing challenge is trying to make sure screening is done to our criteria and with the most up to date inspection information. Because PrePass performs ES, we have little control.
		Developing mutually agreed upon control of the E-Screening program between the department and HELP, Inc./PrePass.
25	What technical challenges did you observe in integrating functions of CVISN across all commercial vehicle operations (CVO)?	CVISN will only be deployed in one region initially. As future funds become available, we will deploy screening capability at all fixed weigh stations and possibly all WIM sites. N/A until fully deployed
		We had four separate platforms to contend with—one of which was with an outside vendor. We had to develop methods to ensure that all the information across these four platforms was current, accurate and "in sync".
		Only minor software issues to date.
		No significant issues were encountered to date.
		Security policy and bridging firewalls.

Q#	Question	Responses (Sanitized to maintain anonymity)
		Integrating and synchronizing SAFER to PreView databases, specifically the XML interface, both outbound and inbound.There is a common thread connecting both of our state's issues. Basically, changes to CVISN architecture and associated standard are taking place, which make CVISN increasingly more time consuming for us to manage. If these changes continue to occur over the long term, using the current ACCB process, we may have no other choice but to disengage from the federal CVISN initiative.The ACCB (Architecture CVISN Control Board) does have a process for states to request and make changes to the CVISN architecture, but we believe this process is flawed. Although some states are active in the ACCB and request changes to the architecture, the changes are accepted and adopted by only the states that are represented at the monthly ACCB teleconference. Our Recommendation: Although some effort is put in to evaluating the impacts of changes, we believe that the board needs to establish a more formal review and adoption process to include: (1) a more thorough evaluation of the impacts to the architecture and/or standards; (2) formally distribute the evaluation results; (3) request a timely response from participating states; and, (4) institute a formal electronic balloting and voting process. Our CVISN managers understand that when IRP and IFTA were institutionalized, similar issues were present. As these programs developed, formal processes were adopted to assure that realistic changes and modifications were made so that there was minimal financial and program impacts on member states.
		No technical challenges of any scale were really noticed.
		The technical challenge will be to integrate the credentialing info to the roadside/weigh stations.
		We operate differently from most states using no permanent weigh station or inspection sites. As such we had to invent technologies to support mobile operations and tie them technologically to our CVIEW equivalent data system.
		When developed, this should not be an issue as only two agencies are involved.
		Communication across state agencies to ensure all are getting the right information at the right time.
		Once the CVIEW is deployed, state enforcement personnel will be able to enter a plate number or carrier DOT number into the CVIEW query screen, and will be able to view an "alert screen" detailing any safety or credential status information that falls outside of acceptable parameters for that vehicle / carrier. However, this capability is of limited utility in mobile applications (officer has insufficient time to view / key in plate number or DOT number at mainline speeds and receive response before vehicle is gone), and at high volume weigh stations where vehicles are queued at fixed scale, allowing officer 3-5 seconds to view plate, key in number, get response and pull vehicle out of queue. Further, fixed scale enforcement personnel is limited – even if we know that 15 vehicles across the fixed scale per hour should be pulled over for further inspection, we are hard pressed to provide the personnel to accommodate 15 additional inspections of paper documents, driver and/or vehicle. Two potential solutions come to mind: 1. Promulgation of a rule by FMCSA to standardize the format and placement of apportioned plates, significantly increasing the efficacy of plate readers at both mainline and (particularly) ramp speeds. Plate readers could then be used to digitize the plate, feeding a query that would hit against the CVIEW and provide information back to the officer in the scale house re: a "pass/fail" reading based on snapshot information contained in the CVIEW. The officer could then pull "failed" vehicles out of the ramp queue for further inspection. 2. Establishment of a program similar to the MCSAP program, where state funds for size, weight and credential enforcement at fixed scales can be augmented by federal funds (in many states, the fixed scale operation is by an agency other than the MCSAP agency)
		Dealing with all of the different data platforms and getting the various legacy systems to communicate with each other.
		Networking the various functions.
		Security issues, such as VPN connections, and secure Web access were the biggest roadblocks. Establishing a connection to SAFER was also a challenge.
		The state's legacy systems are mission critical, and as such cannot experience any significant down time. Developing interfaces, testing them and then implementing them without interrupting the legacy systems was technically demanding. The system architecture needed to consider the issue of working with new technical specifications as well as older legacy system specs.
		Interfacing with other agencies. The dirty data. Lack of centralized data storage and processing. Lack of real-time data flow between agencies. The need for the elimination of duplication of data. Let the business needs dictate the technology—don't let technology dictate the business needs. It has also become obvious that concentrated efforts of communication and data sharing within our truck-shed should continue. Even though CVISN is a national program, there is still a greater need at the regional/truck-shed level.
		We chose to use the messaging approach as a system integration mechanism, with middleware. Our challenge was to establish a middleware environment and support mechanism within DOT.
		We are still early in the deployment process and have not encountered significant technical challenges, yet.

Q#	Question	Responses (Sanitized to maintain anonymity)
		1) In the summer problems with lightning strikes taking out PrePass equipment; 2) Co-location of Dept of Agriculture Interdiction stations at other organization's weigh stations and/or locations where the two stations are very close together. Because the green light remains on for a certain period of time when passing the other station, trucks incorrectly think the green is also for the Agriculture site when many times it is not. PrePass has found a work around but the fix affects the Agriculture PrePass statistics.
26	Overall, would you characterize hardware or software as the greater challenge in CVISN deployment?	Hardware: 0 Software: 24 Both: 1
26	Why?	The knowledge level of the state staff and the contractor of the software used by the respective parties was not always at the same level.
		Software is the backbone of the system infrastructure, and the most difficult for agencies to have to revise and adopt. Hardware only requires funding. Software requires the bulk of programming time, user interaction, training, etc. Agencies hesitate to change their legacy systems if they are working for them.
		Software is dynamic and needs constant maintenance or upgrades to mobile personnel across vast geographic area.
		Most of the hardware network was already in place.
		Vendors sell products that are promoted as robust and interoperable. This claim is sometimes accurate.
		Designing and developing legacy system interfacing for the EC was the greater challenge.
		1. Performing requirements analysis—gathering requirements from multiple internal and external sources. 2. Setting-up and maintaining a test environment due to legacy system interfaces.
		Difficulty with the software meeting the needs of the end user. This was due to communications between the end-users and managers of CVISN software development and the developers and programmers who built the software.
		Web interface and security were new areas for us in this environment.
		Determining who will be the responsible party for an item that is a new system of equal value to multiple agencies.
		Communications are a very difficult issue.
		Complexity of integrating legacy system mentioned in 22 above. The software combinations used had to be configured in such a way to allow each one to operate correctly.
		The applications need to be analyzed, designed, and developed.
		Hardware is pretty consistent but the software changes constantly.
		Institutional issues are still the greatest challenge. We have (or there exists) hardware and software to enable enforcement personnel to electronically read electronic logs, read "black box" data from the engine at mainline speeds; we know that transponders can be used to identify carriers, drivers, load data (cargo, haz mat, etc.)—but we have no authority to access these data (unless, in the case of transponders, a carrier is enrolled in a clearance program). Basically, we have the ability to electronically track the good guys who authorize us to track and bypass them. Searching for the "bad guys"—the problem carriers and drivers—is still looking for the needle in the haystack, although it is a somewhat smaller haystack by virtue of the fact that some of the "good guys" are now transponder-equipped. We need to start considering mandatory transponder issuance for MCSIP carriers. We need to engage in a very focused dialogue with ATA, the National Truckload Carrier Association, state associations and other industry avenues to move forward with initiatives along the lines of the airline industry and FAA model, to better level the playing field for safe and legal carriers and to increase the effectiveness of enforcement activities in identifying and changing the practices of higher risk carriers and drivers.
		There were a number of CVIEW issues that needed to be resolved, including developing a connection to the SAFER 4.2 database. There was not a CVIEW prototype that was available until late in the CVISN deployment process. We did not find out that we needed some type of a CVIEW window query program until after our CVIEW was developed. This resulted in additional expense for our development efforts. None of the workshops focused on what exactly a CVIEW was and how the information needed to be deployed to the roadside users.
		Both, actually. The procurement of hardware presented many challenges, while the integration of software presented other challenges.
		Various data sources & distribution.
		It takes longer to develop the software to meet user requirements.
		Because, except at the roadside screening equipment, the hardware was all standard issue—but the software is customized at all levels

Q#	Question	Responses (Sanitized to maintain anonymity)
		Creating XML IFTA and IRP transactions was difficult for the vendor. Parsing XML transactions for an Oracle 8i system took some very complex Java programming. Porting CVIEW update procedures from SQL Server to Oracle was much more difficult than expected.
		Especially regarding software from vendors: less control over product features and timelines.
		Hardware was not an issue since most systems are already in place. Getting those systems to talk to each other required far more development support.
		Hardware is very much standard. Software varies with applications and departments.
		Cost of development and agreement on acceptable design by all agencies.
27	Considering all of the technical challenges faced by your state in deploying CVISN, which tools or approaches tended to work the best in overcoming them?	It was easier for the contractor to provide approaches to the state's software by learning the technology or by obtaining staff that did.
		Strong leadership support.
		N/A until fully deployed
		We used our CVISN contact list as a knowledge base. We conducted interviews with states with similar platforms to learn from their experiences—their suggestions and willing input aided our development efforts greatly. In one instance, a state shared an application that we used as a shell for our development.
		A team approach with constant communication between/among stakeholders.
		Using systems engineering methods and following a structured project management approach.
		Cooperation and communications between all parties involved.
		Keep It Simple.
		The support from other states, I-95 CC, FMCSA CVISN staff, our CVISN state advisor and the consultants/vendors providing ideas, encouragement and strategy. Only with that support, could we have reached this far.
		The CVISN team providing project management and systems architecture with contractors providing technological support.
		Not applicable at this time.
		Unknown
		Muddling through. Talking with states who had been there, done that. Talking with individuals at Volpe, etc. The technical challenges are really not the showstoppers.
		The best approach was to assign qualified personnel and just do it.
		Outsourcing as much as possible.
		For EC, establishing clear roles, expectations and communications protocol between the various agency and vendor IT staff involved.
		Patience and thorough testing.
		Strict adherence to the principles of Quality Assurance; for instance regression testing when changes are made or errors corrected.
		Overall, our technical challenges were best addressed by having a good, detailed CVISN plan and design to work from.
		Advanced planning and awareness by all stakeholders has been the best plan of attack.
		Having all the players at the meetings all the time.
28	Describe any unusual or innovative approaches to paying for your deployment.	Deployment of a limited pilot system is primarily funded by federal resources. Based upon the state's forecast of the budget deficit, a funding source has to be identified to continue the operation on an ongoing basis.
		We strictly used the FMCSA CVISN Grant.
		Our state deployed using the usual methods. We applied for and received ITS earmarks.
		The state has had difficulty securing funding for CVISN activities. Elements have been funded by a third party (PrePass) or MCSAP funds (ASPEN).
		Public/private partnerships with PrePass and other in-state sources.
		None.
		Our CVISN program was developed through state/private sector funding partnerships. Federal CVISN funds paid for CVISN related travel and a federal Earmark funded one of our five automated weigh stations.
		Hardware which is purchased by other grants/units can reasonably be used for CVISN purposes. The mainline WIMs are used for data development. They are now being used for weight screening also. The only difference is the dial into the box. The telecommunication cost is covered under a broad contract that provides for the cost of this service.

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		Our credentialing system and the related IFTA returns project were funded by grants awarded by the I-95 Corridor Coalition. While these represent FHWA monies for accounting purposes, these are not earmarked funds. We also used field operations test funds from I-95 to automate safety inspection.
		Funds have been a combination of various Federal funds with matching state dollars. MCSAP, CVISN SPR, etc.
		We have relied primarily on the above mentioned structure.
		Used toll road credits for CVISN matching funds.
		We used funding from: CVISN grants for business plan and program plan development; PRISM deployment; State Planning & Research; Borders & Corridors earmark; federal-aid construction; state funds; Motor Carrier Safety Assistance Program; National Highway Traffic Safety Administration Commercial Vehicle Accident Reporting Systems Program.
		None.
		Dedicated funding for IFTA and IRP EC was obtained by increasing the fees for single trip permits. Automating OW/OS truck permits reduced POE staffing levels, which enabled Motor Carrier Division to hire two programmer/analysts.
		None
		Nothing unusual in seeking funding. One agency does use a revolving account generated by OS/OW fax transmission fees to support the operational unit.
		Our state trucking association backed a bill to place a surcharge on permits to help pay for this program. This support of a "self tax" was extremely helpful in securing the funding necessary to deploy the initial and continued program. It showed legislators that the industry wanted this program.
		(1) We are using federal STP fuel tax evasion funds to pay for part of our IFTA e-credentialing project. (2) We used federal MCSAP funds to pay for most of our CVIEW development. (3) Our OSOW permit automation project has been primarily state-funded. Approximately half of the state funds spent on the new OSOW system are being reimbursed by the carriers via a 10% temporary surcharge on OSOW permits. (4)To match our federal ITS earmark and MCSAP funds, we have used the state funds spent on OSOW automation, and the in-kind contributions PrePass made to our e-screening installations.
		Much of the initial plan and design for CVISN has been paid for through research funds, used to assess feasibility and design prototypes.
		We were given $1 million of 0.08 alcohol grant funds to use toward CVISN deployment.

Q#	Question	Responses (Sanitized to maintain anonymity)
29	Describe your method of learning about innovative funding sources.	No innovative financing methods have been identified.
		For credit cards, the state learned from real-world use and justified their use through cost-benefit analysis.
		The increase in trip permit fees was presented to the Legislature, with the backing of the state Trucking Association.
		None
		We are a member of the I-95 Corridor Coalition and applied for grants through the standard coalition process.
		Earmark funding grants were applied for, but not approved.
		We learned about the funding sources from FMCSA, FHWA, and NHTSA staff and from state DOT staff involved in federal funding. Applications were made through federal agencies, with the exception of the Borders and Corridors funding which was secured through Congressional earmark. Funding was managed by defining several discrete project accounts and allocating the various funding sources among eligible projects, taking care to maintain required state/federal match requirements. Costs were charged to the respective project accounts as they accrued.
		(1) STP funds: We were aware of the fuel tax evasion program because we had used these funds for other IFTA activities, and the state Dept. of Revenue uses the funds for redesign of its fuel tax system. We worked with our DOT budget office to apply for the funds. (2) We discussed the use of MCSAP funds with State Patrol and FMCSA at CVISN team meetings. We listed all future CVISN projects and got guidance from FMCSA on what portion, if any, of each project was MCSAP-eligible. (3) During the state budget process, we worked with motor carrier industry reps to develop a proposal for a permit surcharge to reimburse the state for funding an automated OSOW permit processing and routing system. The Legislature agreed to provide the money up-front in the state budget with the understanding the surcharge would reimburse the state during and after the project. (4) We generated ideas for state match and discussed them with our state, regional and national level FMCSA reps to get their approval. (5) We had a single DOT staff person administer most of the funds used for CVISN deployment, to provide one point of contact for monitoring and reporting on funds available and funds spent.
30	Describe any special terms and conditions or strings attached to innovative funding sources.	No innovative financing methods have been identified.
		The programs had to offer regional benefits.
		None
		Funds for OS/OW permitting were partially justified by not replacing FTEs who retired prior to deployment. The state has a standard "master software agreement" it uses with vendors. While this is cumbersome to deploy, in the long term it has proved to be an extremely useful contracting tool. On the negative side, getting around the federal holdback was a challenge.
		Several funding sources were supplied for specific purposes. It took quite a bit of care to ensure that funding was allocated only to eligible activities, and that all match requirements were met.
		MCSAP funds must be tied exclusively to safety enforcement, making it difficult to determine what percentages of individual project costs were eligible for MCSAP funding. Our state OSOW funds needed to be spent within the same fiscal year they were allocated, which was difficult when the OSOW automation project did not proceed on the original schedule.
31	What interagency issues did you encounter relative to funding for CVISN?	Our Dept. of Transportation was the entity used to purchase and maintain WIM under our re-engineering initiative.
		None. Each participating department provided state resources as a match to the federal funds provided. All of these resources were involved in supporting CVO efforts.
		ITS earmarks 50% support for a new WIM at one weigh station. It was difficult to find the 30/20 matching funds for this effort. Our state was able to utilize the pooled fund study for both the On-line Oversize Overweight Permits CVISN project and our traveler information system. The pooled fund study greatly hastens the procurement process and timeline, leverages both CVISN & ITS technology and resources, and yields lower deployment costs.
		N/A until deployed
		None encountered.
		Leveraging other states' investments to cost effectively meet our needs - we implemented another state's CVIEW at a fraction of the cost that it would have taken to develop our own CVIEW system or to modify the APL CVIEW for our use.
		Used state transportation trust fund to match federal grants.
		No interagency issues for level 1 deployment.
		The answer is to leverage your resources....
		To undertake our e-screening roadside project, we initially used the state's SPR funds to cover the project's initial costs. New scope items are being partially funded with federal I-95 Corridor funds as well as additional SPR funds.

Q#	Question	Responses (Sanitized to maintain anonymity)
		The biggest issue is that we have not communicated as well as we should have. Had we done so, we could have better leveraged our funds and produced better results.
		The only significant issue was finding mechanisms for sharing or transferring funding among state agencies. In most cases, the solution was to bill costs through the Department of Transportation. States are not allowed to pass on the credit card transaction fees to our customers; this results in a net loss of revenue to the state for complying with the CVISN requirements.
		CVISN competed for ITS grant funding with the DOT Traffic Operations Center and other ITS projects. A major event held in the state took most of the money. MCSAP grants were used for some CVISN projects. PRISM funding was used to build the CVIEW-SAFER interface.
		None
		State matching funds were from non-CVO sources.
		None.
		No major issues after it was decided which agency would ask for which portion of the budget. DOT did the AVI portion, state patrol did the WIM, and another agency had funding for the credentialing interface. Payment responsibility was resolved via contracts between the various partner agencies.
		A major issue within DOT was finding state match. The two major CVISN divisions (Motor Vehicles and State Patrol) had little or no extra funds available for state match, and the highway and planning divisions had already committed most or all of their state highway funds for other projects. The fact that we were able to identify in-kind and soft match sources allowed us to use DOT's federal ITS earmark funds for CVISN activities.
		MCSAP and Research funds have different requirements, so a plan and matrix has to be developed to ensure the money can be spent within the program rules, and that each CVISN element can be fully funded.
32	How did cooperation between your state and the motor carriers affect your deployment?	The regulatory agencies and industry associations have the same goal, which is safety. Industry has been a CVISN partner from the beginning.
		An industry advisory group was established initially to support the CVISN effort. They represented the various entities impacted by CVO. The council was established very early in the development effort and was made aware of the design of the state's CVISN system.
		The state motor carrier association was involved during the initial phases of CVISN program design. Minimal involvement during program deployment.
		We have experienced great support from the state Trucking Association and several carriers. Carriers have been willing to carry transponders during troubleshooting of AVI data capture, and test GPS devices statewide, thru Canada and the United States.
		It is working well. We have a good working relationship with all partners.
		We worked through a state motor transport association and found them always helpful, willing to provide input, and willing to pilot new programs.
		We involved motor carriers in all aspects of CVISN from initial training through systems development. It is another key element to a successful deployment.
		The trucking community has been involved in our program throughout the process by participating in the EOSS Steering Committee and the Secretary of State, Truckers Advisory Board. A "Safety Coalition" of for-hire and private carriers and state agencies is currently meeting to resolve legislative issues related to issuance of USDOT numbers to Intrastate carriers. Our success in motor carrier programs depends on support from the carrier community.
		The state Motor Carriers Association was an active and supportive partner throughout the process.
		Motor carriers and associations have been involved since the beginning of the project. They helped to formulate policy and procedures.
		Motor carriers were represented on the CVISN team and were fully supportive of level 1 capabilities.
		The industry has been very supportive of the project and a great resource to direct the development of a useful product.
		The state Motor Truck Assoc. has been very supportive of CVISN. They wish to have safe and expeditious commerce in the state. This priority dovetails with CVISN deployment.
		We have used outreach to the trucking industry and industry representatives. We have included individual motor carriers to assist us in determining what products to deliver and to test various computer applications before they were deployed. Industry is represented on the interagency group by staff of the state Motor Truck Association.
		Motor carriers have been supportive in the development but have provided no funds.
		Thus far we have worked with the industry but it is still too soon to know if that groundwork was sufficient to yield results.
		We developed a good working relationship with the state Trucking Association and included them as members of our CVISN Team. This helped us when we defined our requirements for our web site and our Automated Permitting and Routing System.

Q#	Question	Responses (Sanitized to maintain anonymity)
		The state's Motor Transport Association has been involved since the beginning of the Project and was critical in defining the Project. They helped obtain the original State funds for the Project and have worked to keep funding available to us. Their input to the planning process led to the inclusion of OS/OW Permitting as part of the state CVISN plan.
		The state Trucking Association has been very supportive of the CVISN program. Trucking industry focus groups provided good information about their priorities for a state Electronic Services Feasibility Study.
		No impact
		It has worked well. We have a good working relationship with all partners.
		The backing of the state Trucking Associations was instrumental in getting the program approved. They testified and worked their legislative contacts in support of CVISN.
		The motor carrier industry's support of the PrePass program and the proposed 10% temporary surcharge on OSOW permits was critical to the state's decision to become a PrePass state and to develop a new system for automated OSOW permit issuance and routing.
		The Trucking Association is part of the CVISN Program Team and has been an active participant in the planning process. They support the goals and objectives of CVISN.
		Initially DOT deployed E-Screening prior to CVISN so very little involvement. Once we committed to CVISN the trucking association and four company representatives joined our team.
33	Describe the role of the private sector in collaborating on your deployment.	We used private industry as a consultant.
		Cost for participation in the council meetings was borne by the private sector. Because the state utilizes a private sector system for its ES process, costs for establishing the system interface was borne by the private sector.
		We had 3 GPS vendors offer free services including real-time pilot tests, and 1 nonprofit has offered to review our RFP & vendor proposals.
		None We did not have any private sector involvement other than that of the motor carrier industry.
		PrePass provided expertise and capital resources in exchange for the right to do business with motor carriers. A state agency provided software development and user-interface capabilities.
		The project was supported by various universities. One university used other federal grants to support the project. The private sector did not provide direct financial contributions.
		Vendors/partners deployed AVI systems at little or no cost to the state.
		No. The vendors, consultants and contractors are willing to share information in a general way, which helps overall to advance CVISN. Their experience with various states is shared in a practical way. They bring their insight and experience to bear in new contracts with states moving through the CVISN process. The private sector is truly a partner in this realm.
		We have received equipment free of charge at times to test in deployment applications.
		They were participants in determining direction but did not provide any direct financial support. Rather they have/will serve as advisors and educators.
		Permit services and carriers acted as beta testers, were involved in original software design, and helped to obtain some state financing.
		Our state has recently joined Pre-Pass, and expects Pre-Pass to supply some of the equipment and software for ES.
		None
		The HELP, PrePass public / private partnership was key to providing ES in our state. State funds were not available to implement a state-owned / maintained program.
		The private sector did not provide any funding for the CVISN deployment.
		PrePass provided in-kind contributions to the installation of e-screening at two state scale facilities. We also worked with vendors to purchase and customize their e-credentialing products and their CVIEW code as a base for developing our own CVIEW.
		The private sector has had no material participation in CVISN planning and deployment.
		HELP, Inc. took over and outfitted all of our weigh stations at no cost to deployment.

Q#	Question	Responses (Sanitized to maintain anonymity)
34	What were the challenges in cooperating with private-sector partners?	Consensus is powerful.
		The major challenge encountered with the private sector was in building the technical interface with the ES interface. In addition to the original private sector development contractor, the several instances where the company was bought and merged required a learning curve on the part of the private sector.
		Need to keep ongoing communications with private sector partners to keep them involved throughout.
		No response
		Soliciting and awarding of contracts was lengthy.
		The challenge was negotiating a viable agreement; the lessons learned are to maintain good working relationship between both entities.
		We believe the working relationship we have established with the industry has allowed us to launch programs they are supportive of and are willing to participate in and use. We also have learned that it has to be understood that testing equipment in applications is not a commitment to use the technology.
		Need better ways to get their participation and involvement in the development of the systems.
		It is important to keep each other informed about issues, since there can be institutional differences that can impact deployment. This was especially evident in discussions about data sharing and ES.
		The private sector partners are more agile than state governments, and this must be made clear to them lest they become impatient and disenchanted. Trucking trade organizations generally have access to legislatures and the press, which can be parlayed into calls for action to overcome any organizational recalcitrance on the part of state agencies.
		None
		Lack of interoperability between Pre-Pass, NorPass, and other screening systems is still a major roadblock to CVISN success.
		Maintaining good current communications.
		None.
		Establish clear expectations up-front as to what functions/capabilities the vendor product should include. Monitor progress on these expectations carefully and continuously.
		Be very explicit and make sure all areas are agreed on prior to signing any contract!
35	Describe your state's approach to implementing ITS standards.	EDI was a hindrance since we are not mainframe-based. Political considerations for sharing transponders across different systems. IRP/IFTA clearinghouses was a benefit.
		The state's approach was based upon the existing standards at the time (EDI) of planning. While it was not the state's standard of choice, we elected to support the ITS standard. Over the course of the years, there are a lot of resources being spent at both the state and federal levels looking for a more robust standard. I wonder if the national effort would be further along in support of the only current available standard?
		Still deploying 9/04. Using DOT model including their roadside operations software and CVIEW.
		When we fully implement CVISN, this technology will be compliant with ITS standards and the National ITS Architecture
		When we developed the Top Level Design, we only chose solutions that were consistent with the recommended standards. The Top Level Design was approved and development was begun that utilized those standards. Effective implementation of the solutions thereafter was never a problem.
		We developed CVISN architecture using the National ITS Architecture tools. This enabled us to easily characterize data exchange requirements.
		We will follow CVISN guidelines.
		CVISN architecture was included in the state-wide ITS business plan.
		Adhered to national architecture which hindered deployment by requiring use of older technologies such as EDI.
		Our state and vendor both use open standards, such as TCP/IP, html, etc., which allows any user (jurisdiction or carrier) to access and operate our CVISN related systems using common web browser software via extranet or internet.
		We were fortunate, in that the various agencies already conformed with the basic national ITS architecture. As our systems develop, we have been able to work through this.
		We approach CVISN with the intent of following the ITS standards. Generally, the architecture does not present a problem. We did have some issue with the original architecture calling for an expensive EDI solution to data transfers. We pushed for a newer, more open, and inexpensive XML solution.
		We are too premature in the process to have a valid response.

Q#	Question	Responses (Sanitized to maintain anonymity)
		Consistency has been valuable in some areas and a problem in others. It has been valuable in areas where there is national leadership and a common view on how to accomplish specific goals. It has been problematic where there is less federal leadership and where states have vastly differing views on how to accomplish specific goals.
		We implemented EDI standards for IRP application data exchange because it was the industry standard at the time of implementation. We will use XML in some aspects of CVISN program deployment because it is the standard expected by receiving systems (SAFER) and where it makes sense from a cost / design standpoint for the state. Transponder and other device interoperability standards promulgated by the federal government are in the best interests of all states and carriers, as it enables "plug and play" capabilities among various vendor systems
		We used the National ITS Architecture to help us define the requirements for our Automated Permitting System and ES operations.
		The CVISN architecture, standards, and coordination provided by FMCSA are major factors in making the program a success. State systems are so diverse that interface standards are the only way data sharing can be accomplished.
		National Standards were not an issue.
		We by-passed EDI standard in favor of XML.
		EDI.
		The initial standards were incorrect and we had to fix them.
		We mapped our state CVISN architecture/design into the National ITS Architecture using the ITS Turbo tool. It did demonstrate that our CVISN architecture was consistent with the National ITS architecture, although we didn't necessarily do it for that purpose. The applicable ITS hardware standards are primarily roadside. Specifically DSRC for transponder to roadside equipment communication, and the transponder itself. Since we opted for PrePass, rather than implementing our own e-screening system, this wasn't applicable for us. The other major standard was EDI - - the data interchange specification (TS 284,285, and 286). Although a data interchange standard is obviously necessary, this was very troublesome due to the fact we planned to use XML. See comment concerning #36.
		We developed a CVISN Architecture that is consistent with the state and national ITS Architectures.
36	Did implementing standards present any challenges to your deployment?	EDI.
		The Feds contracted with the private sector to manage the deployment of the EDI software to reduce costs for the state. Over the years, the Feds changed the private sector participant who manages the maintenance. It is my opinion that the Feds have given up on the use of this standard and is spending more resources looking for a replacement. With the changing level of federal commitment, the costs to the state's will always be increasing. Multi year projects are hard enough to manage without the changing standards employed.
		Still deploying 9/04
		No response
		No
		No barriers were encountered as a result of using the ITS architecture. In fact, using the architecture helped in conveying the total program to stakeholders in a consistent and meaningful way.
		The standards and architecture incorporated everything anyone could think of, making it overly complex and resulting in testing of items that were never used.
		None.
		No unique challenges.
		No significant barriers were encountered. It has presented challenges and barriers. In particular the challenges presented are the extensive amount of paperwork, and bureaucracy presented by the overall system. Also, the other issue has been where state policies and or legislative direction have been counter to those of the ITS architecture.
		No.
		No.
		Maintaining consistency has been interesting, as the CVISN standard has evolved considerably over time. When the state began its CVISN Project, the credentialing "algorithm" seemed to revolve around EDI transaction sets and e-carrier "CAT" software. Since then, it has (sensibly) moved to a XML and web-based processes. Unavoidable, but fortuitous, delays in our Project allowed us to avoid the earlier 'dead-end' technologies and implement the more recent standards.
		XML interfaces were difficult to implement, because they were new technology. We think that EDI interfaces would have been even more difficult.

Q#	Question	Responses (Sanitized to maintain anonymity)
		EDI.
		When we found they were insufficient we had to work with the folks at APL and FMCSA to have them changed.
		At the point we were doing the CVISN workshops, EDI standards were still required, so our design reflected that. Meanwhile FMCSA and our university partner unofficially indicated XML would ultimately be an alternative to EDI, since the Pilot states found EDI to be very problematic.Our major difficulty centered on the fact that while it was clear XML exchange was what we should develop for, there was little if any definition at that time. When the definition finally was ready, we discovered that important functionality contained in the EDI version of SAFER had been left out of the XML SAFER, i.e., subscription capability, CVIEW to SAFER direct query. This led to cost concerns and schedule delay in getting our CVIEW fully operational.
		No, we used a User Services approach and identified the market packages for each CVISN project, and developed downward from there.
		(No
37	What methods of overcoming challenges would you recommend?	Be certain that your state has a clear understanding of federal goals and objectives.
		Understand the status of the existing standards at the time of development. It is safe to assume that without a standard, the development effort will be delayed in addition to being exposed to many changes.
		None at this time Choose solutions that adhere to the standard. Make infrastructure planning decisions based on those solutions. Maintain consistency.
		Use the National ITS Architecture for the basis of the CVISN design and supplement that with standards defined by the CVISN program.
		1. Now that leading edge problems have been resolved, states beginning deployment should use knowledgeable resources with prior experience. 2. Use systems engineering techniques, a formal systems development life cycle methodology, and structured project management process.
		Set it up right to begin with. As your system evolves you will be able to maintain the necessary standards.
		None
		Locate your funding and Executive commitment before initiating.
		Communication is the key and any structure that can be implemented to increase communication would be essential to establish early and maintain throughout.
		Insist that the state IT function be fully involved at the earliest stages of the development process.
		Hire a consultant with solid CVISN deployment experience.
		We recommend following the Architecture.
		We developed our CVIEW to enable us to transfer the correct data in a efficient manner.
		Designing and building CVIEWs and associated CVISN applications based on well documented architecture and federal system descriptions, then finding some of the functions don't exist, made for a very difficult deployment process. We recommend that states become knowledgeable about SAFER and its capabilities, and impress on FMCSA the importance of getting the required functions into SAFER. Participation in the ACCB teleconferences is a good method to discuss and overcome these challenges with FMCSA, Volpe and other states.
		Plan CVISN in conjunction with an architecture. Do not do ad hoc deployments.
38	What are the most important lessons your state has learned in deploying e-credentialing?	Credit card acceptance. Marketing and training issues.
		I could understand the principle of developing a standard documentation methodology that all states could use. In this way, the Feds would assure that everything is addressed and would be standard. The experience of the prototype states was to be the foundation of this planning effort. In truth, what was experienced was that the prototype effort was not as far along to use the effort as a standard. This resulted in a more than an inordinate amount of time to complete the planning cycle. Extended time periods resulted in a lack of focus on the part of the state. It also seemed that the planning effort was an academic exercise. I question if the support of this effort by the federal government was based upon the practical experience of implementing such a complex effort or was the design of a consultant or a member of academia?
		Successfully deployed electronic temporary trailer registration for 1 carrier. Complete EC automation requires several pending data interfaces. No response
		The fewer entities involved in the process the better. High level of communication critical to success.
		Continuous communication with your vendor is a must. Insist that the vendor understand our customer service processes and philosophy before the deployment of an automated system.
		Not yet implemented.

Q#	Question	Responses (Sanitized to maintain anonymity)
		Using a "phased approach" helped to make it a manageable project.
		1. Use the web/internet for carrier transactions. 2. Technology is constantly evolving and systems must be upgraded regularly or they will become obsolete.
		The business case needs to be made, which benefit applies to the state, including government, trucking industry, and any private interests.
		Clearly define customer expectations and allow for schedule slippage for external systems that do not get developed on time, i.e., Treasury payment systems, SAFER.
		Join the Clearing House. Your time can be better spent than trying to apportion the fees. Please get the other states to join. They are creating too much work that could be done electronically. Could we underwrite their fee if this is the hold-up?
		Implementing new system for OS/OW permitting; automated permitting. Expect about 60% of 150,000 permits issued annually will be able to be applied for/processed using automated system, enabling permit operators to focus on the 40% of permits requiring more complex routing. Will significantly reduce time spent in permit application process for carriers, get vehicles on the road faster. Upon full operation, expected to save carriers more than $5 million annually in increased operating productivity (based on getting loads on the road 1 hour faster at $60/hour operating costs).
		Involve carriers in designing and testing EC applications. Develop close working relationships between agencies. Look for creative funding sources, or prioritize credentialing systems as part of the regular workload. Budget for ongoing maintenance costs.
		Hire a consultant with solid CVISN deployment experience.
		Existing databases for out-of-state credentialing (IRP, IFTA) do not exist. The clearinghouses do not have all necessary data and it is not timely, 30-90 days old.
		Funding should be assured up front. States are cutting back on IT resources and new projects.
		Each state and each state agency has its own systems, methods, and even authorizing legislation and as such must be taken into consideration. Utilizing the most flexible format that builds into the structure good communication yields the best results. The more rigid the structure the more difficult it becomes to achieve results.
		Reliance on in-house resources alone leaves states vulnerable to the competing demands of a host of other projects, day-to-day routine demands, and changing priorities. Vendor / contractor (acting as state employees) assistance is invaluable. Carriers must be involved in both initial design and beta testing.
		Our state put most of its efforts into developing an electronic permitting and routing system. We discovered many problems with our GIS data and had to do additional data collection and cleansing in order to create a functional routing system. Once we developed our permitting system, we found out that we had to absorb the cost of the credit card transactions since we were not allowed to pass the fees on to our customers. We also had a number of issues with our IFTA and IRP data bases that were required for the CVIEW and snapshots. Most of these issues were directly related to our consultant's reorganization and the loss of experienced personnel.
		Plan your work, get buy-in, and work your plan.
		Ensuring that the system requirements and design are thoroughly evaluated by users. Also ensuring that testing time is sufficient prior to deployment of the product.
		(1) Choose your vendor wisely. Be certain the vendor understands and can provide what is required to meet CVISN Level 1 e-credentialing capabilities. (2) Conduct a scoping effort with IT staff prior to seeking funding for a major automation project.
		EC is very expensive and may not be cost-effective for small states.
		Be careful.

Q#	Question	Responses (Sanitized to maintain anonymity)
39	What are the most important lessons your state has learned in deploying safety info. exchange?	Our state was far ahead of the feds in this area. Successful ASPEN deployment June 2002. Experienced scope creep from Fixed Weigh Stations and Supervisors, to all staff and external police departments. Deploying our CVIEW 9/04
		Many states are designing their CVIEWs with query capabilities, where an officer can key in a plate number and the system runs the plate through a series of checks similar to an ES routine. The officer gets a "pass / fail" screen back and can then pull the vehicle out of the queue for further checking. There is a need, however, for this query to be an automated one, where a reader reads the plate (or DOT number) digitizes it, hits against the CVIEW and delivers the "pass / fail" information to the officer without the need to key in the number. (There is no officer to key in the plate number at a virtual weigh station, and officers have very limited time at high volume scales to key in recognize and key in the plate number). If plates were standardized in terms of placement on the vehicle, font type, character pattern, contrast, reflectivity – plate readers could perform with great accuracy at both high and low speeds, and states would have a much better tool for focusing enforcement activities on higher risk carriers. A federal rule to promulgate standardization of placement and format of apportioned plates would be of great benefit to utilizing the data in states' CVIEWs.
		Our effort crossed many boundaries of responsibility with each having its own administrative and technological characteristics. Good communication was essential. Making everyone feel a part of the team motivated them to implement changes in their respective areas for the benefit of the project.
		Ensure that software deployment is uniform and the latest version.
		Not yet implemented.
		1. Business rules are not always reflected in data management processes. 2. There needs to be an audit trail to maintain data quality, i.e., data sources and date/time stamp.
		Cooperation and flexibility among all parties involved, including FMCSA.
		Keep the exchange mechanism as simple as possible, i.e., flat file.
		In a small corridor state, SIE in real time is essential. We have a good relationship with our border states. We realize that safety must be addressed from a regional standpoint, because we all have limited resources.
		The screens and displays that are proper for office use are not necessarily good for the roadside. Displays for laptops in cruisers must concentrate on bare bones information to save bandwidth and response time.
		Being on the leading edge (working on pilot projects) is not always productive. Use proven technology. Start with a small deployment, then expand. Implementing CVIEW, bringing current, accurate credential/safety information to the roadside—upon full deployment, expected to increase officers' ability to focus enforcement resources on potentially higher risk carriers/vehicles by enabling officers to key in plate number and instantly screen for safety/credential compliance. Potentially non-compliant vehicles can be pulled out of queue for further inspection.
		Don't get too far ahead of the curve in technology applications. So long as the software is supported nationally, you can run the risk of trying to deploy technologies that won't work or aren't supported.
		There is no one wireless technology (at least in the west!) which meets all needs at present. Satellite (limited connectivity), CDPD (very slow), broadband wireless (limited coverage), wi-fi (very limited coverage), 800 MHz (very expensive; topo limitations) can all play a part. As time goes by, we assume that capabilities will increase, costs will come down, but mobile communications are currently a key limiting factor in information exchange / information access. The biggest surprise was the SAFER 4.2 delay and the slow timeframe for certification. We also experienced delays in getting information from Volpe.
		Communicate and share information with other jurisdictions attempting the same projects.
		Plan time for data cleanup. Our CVIEW data loading process has been more painful and time-consuming than expected due to data inconsistencies.
		The CVIEW is key. As it is being built, try to plan ahead for all the potential uses for the data, and how those uses may access it.

Q#	Question	Responses (Sanitized to maintain anonymity)
40	What are the most important lessons your state has learned in deploying e-screening?	Partnership with our Dept. of Transportation allowed us to move quickly with WIM Still deploying 9/04
		PrePass has been very beneficial in minimizing or eliminating barriers.
		We contract with HELP, Inc, so there were no lessons to learn in this area.
		Must stay current with software changes and service agreements. Standardize operating systems among WIM/AVI deployments.
		Limited implementation but coordination with the screening vendor (PrePass) was essential.
		FMCSA could consider beefing up funding to improve performance of plate readers and/or instituting national standards for placement/format of apportioned plates to improve performance of plate reader technology.
		1. The need to be able to isolate and test components. 2. The lack of available timely and accurate data for out-of-state carriers and vehicles. 3. The need to have an experienced highway engineer involved in the planning, design and construction.
		Deploying systems that have the least cost impact on the enforcement budget and yet maintain enforcement requirements and goals.
		We are looking forward to Virtual Weigh Station concept, because we realize that not all screening can or should take place at weigh station sites.
		We must look to technologies which do not require carrier participation to make ES effective. Transponders are not deployed in enough commercial vehicles and when they are, the vehicles are not necessarily enrolled in screening programs.
		The lion's share of vehicles are not transponder-equipped. States with CVIEWs deployed are all dressed up with nowhere to go. We have a wealth of information about the safety and credential status of vehicles on our highways, available to us at fixed sites and potentially available to use in mobile units, but we are limited in our capabilities to access it in relation to non-transponder-equipped trucks – 80+% of the trucks on the road. We need: (1) a federal rule standardizing the placement and format of apportioned plates so that plate readers at fixed scales and at strategic roadside locations can read, reliably digitize the plate and electronically hit against the CVIEW to deliver information to enforcement officers, (2) federal subsidy / enhancement of operating funds for non-MCSAP organizations enforcing state size and weight and credential regulations to enhance enforcement functions, (3) federal investment / incentives to improve mobile communications / reduce associated costs / increase associated coverage, (4) a federally sponsored initiative to work with industry to identify mechanisms to better take advantage of available technologies to improve the productivity of safe and legal carriers and identify / change the practices of higher risk carriers / drivers.
		Limits of the project—E-screening has had more difficulties with the "undefined" management of the screening facilities than with anything else. Also, for all the effort in sending automated information to the screening system, the information at the roadside is still simply an aid in the enforcement and inspection process. Importance of outreach to carrier community to convince them to participate. E-screening means that carriers need to purchase transponders and they will not do so until there is a demonstrated advantage in doing so. Having an implementation strategy for the long term. (e.g. weigh station maintenance.)
		Define your objectives (Minimize congestion? Ease workload at POE? Reduce delays?) E-screening can be a tough sell to the trucking industry. You must look at the industry perspective. Uniform bypass criteria helps to ease industry fears. Interoperability is still an issue and an important goal.
		We learned that we needed stronger leadership from the FMCSA. The issue of "Interoperability" has caused a number of institutional problems between the different states involved with e-screening. Data sharing is a big issue and if we don't have interoperability, we cannot share the data.
		Use what works. Pre-pass has been very beneficial in minimizing or eliminating barriers.
		The technical portion is not that difficult; however, getting transponders on time is the key piece.
		Stick to the project plan, finish your phases before moving on to any enhancements, and thoroughly consider all enhancements before taking time to develop them. Obtain stakeholder buy in to the ES criteria.
		If possible, address site selection for e-screening during (instead of before) the CVISN planning and design process.
		Small states may be forced to make compromises in order to deploy ES. In our case, that compromise was PrePass rather than a configurable home-grown solution.
		Make agency head commit all resources up front.
		Technology issues are handled by PrePass
		Failed to recognize the number of transportation companies that wanted to participate.

Q#	Question	Responses (Sanitized to maintain anonymity)
		A suggestion I would make to other states deploying Pre-Pass is to be sure and spec out an all dielectric fiber cable only so that no metallic sheath entry is brought into building which might carry EMF, lightning etc. Also, be sure and have primary contractor building weigh station put spare conduit to hand-hole at end of project for PRE PASS cable so that once your prime is done with sodding and you have accepted facility you don't have to come back and tear up facilities placing PRE-PASS communications cable.
41	What are the most important lessons your state has learned in deploying CVISN across all CVO functions?	All state transportation functions should be consolidated for greater customer satisfaction.
		Unfortunately, CVO responsibilities are spread over many departments within state government. The requirement by the feds to have a strategic business plan on CVO rather than organization was something that the state never contemplated. The effort to develop one required the close coordination to understand the institution issues. While the CVISN deployment addresses the technical integration of CVO activities, there is still a need to address the organizational environment. The successful deployment of CVISN may be a catalyst towards addressing other CVO issues addressed in the CVO strategic business plan. Whenever the state enters into a contract which requires the use of proprietary software, the contract should include a source code escrow agreement. The state would only be able to obtain the proprietary source code in the event the contractor was unable or unwilling to provide ongoing software maintenance support for the software at the conclusion of the development contract. In future projects, it would be beneficial to have training personnel with application knowledge and experience conduct the user training sessions. Additionally, it would be beneficial to have department testing personnel involved in reviewing the training outlines and subject matter.
		1. Commit sufficient resources; 2. Establish clear, committed communication protocols across agency lines; 3. Seek stronger federal agency intervention to resolve policy barriers; 4. Creation of a CVO Steering Committee helps focus resources and projects; 5. Develop a cross-organizational working committee empowered to overcome institutional barriers that prevent integrated deployment.
		Still deploying 9/04 Getting everyone involved at the beginning and keeping them involved was invaluable. Let everyone participate - an open exchange of ideas was the key to getting all needed input in the problem-solving process.
		Must have cooperation with all affected agencies.
		It was approached as a PROGRAM rather than as a project. This insured that each individual project could be defined and still be consistent with the program vision.
		Interagency cooperation went well. The CVISN planning and design process provided an excellent means to bring all the various agencies and departments involved in CVO to the same table. Helped the state consider and address CVO issues from a statewide rather than agency-specific perspective. FMCSA might consider directing earmark funds directly to the agency which will utilize these funds, rather than always directing through the DOT or MCSAP agency.
		1. Coordination and communication across state and federal agencies and with the motor carrier industry is a major task. 2. CVISN is a very large and complex system which takes a long time to develop and deploy, making the management of expectations an important function.
		Working together toward a common CVISN goal that benefits all parties involved.
		The time requirement is far greater than expected.
		Use every resource available and participate in any dialogues on ITS. Information is important and there is much out there. Use your Universities to research issues, develop in-state work relationships in work groups that touch on CVO issues. Think outside the box, for other groups may have the resources you need to accomplish some of your ends. Leverage...
		It is imperative to keep the affected industries involved throughout the entire process. If multiple agencies are involved, all of the agencies must continue to support the programs and supply the needed resources.
		Too early in development.
		Coordination of efforts can be very difficult and not planning as a group can cause problems. Too much effort and progress was made early on as individual state agencies and as such we operated only under a framework and not as a single unit.

Q#	Question	Responses (Sanitized to maintain anonymity)
		A good solid CVISN development plan is necessary. The deployment takes more time and money than initially thought. Without a long-term commitment of CVISN funds, it will be very difficult to continue the CVISN deployment. Project scope should be well-defined, and implementation tracked closely. Provide for ongoing maintenance. Plan for obsolescence of both software and equipment.
		While there is a great deal of common data across the various CVO functions; there are enough differences to require that each function receive individual design efforts. The importance of general hardware/software/organizational coordination issues.
		Plan your work, get buy-in, and work your plan.
		Communication is key. All aspects of freight movement and enforcement need to be coordinated. We really had, and still do, to a lesser degree similar projects being started or considered within our or another transportation agency which resulted in duplication of effort and/or duplication of an entire system.
		We learned that CVIEW had greater potential for Division of Motor Vehicles CVO operations than originally thought. CVIEW is becoming an important data source in DMV's credentialing programs.
		A strong and supportive program team that can champion individual projects to their own sections is a critical part of the process.
		Additional planning.
		Make sure there is buy-in and support for the program
42	What are the most important steps you would have taken (or avoided taking) if you had known what you know now?	We should not have contracted with a single source transponder provider. Our own event data is unavailable to us.
		More frequent executive steering committee meetings. It is evident that over a long period of time, the original intent of the executive commitment was lost.
		Maintain continuity of project team leaders and key people so that commitment to project remains; better documentation of key portions of project (i.e., best cases); clearer up-front understanding of the limitations and benefits of the CVISN effort across all agency lines.
		Better internal coordination with engineering We had a very smooth implementation. There is very little we would change if given a second chance.
		Our best choice was in hiring a consultant - the best in the business. Obtain high level commitment from all participating agencies.
		1. Broken the system down into a smaller set of projects. 2. Assigned a full time project manager.
		During the CVISN training sessions, involving the same people that were eventually involved with deploying and operating the CVISN systems. In our case, many of the people that attended the training sessions were not at either the workshops nor did they participate in development and deployment.
		We would have allowed ourselves an additional year to implement.
		It is better not to be the prototype state, unless you have a lot of funding available to try the newest ideas. We are happy to learn from those who are testing and are willing to move ahead based on what they have discovered.
		None.
		Again, funding.
		Better coordination from the state level would have been employed and deployment would have been slowed to allow for more leveraging of state resources between agencies.
		We would have brought in vendors / contract employees to deploy systems from the beginning.
		We did not find that the workshops were very valuable or relevant, especially the ones that focused on the thread diagrams. We needed more technical expertise especially with the development of a working CVIEW and its connections to SAFER 4.2. The FMCSA should have had reliable, cost-effective prototypes available before charging ahead with all of the workshops.
		1. CVISN implementation requires a long-term funding commitment. 2. Implement mainline sorting, rather than ramp sorting. 3. Start with legal truck configurations, rather than permitted. 4. Organize a Steering Committee and a Working Group, and have regular meetings. 5. Lack of interoperability is still a huge issue. FMCSA should have provided more leadership in this area. Policy directives have not been sufficient to effect change.

Q#	Question	Responses (Sanitized to maintain anonymity)
		1. Ignore EDI and GUI. This model for CVISN proved to be a dead end (as opposed to web based credentialing). 2. Emphasize credential e-payment from the beginning, and pursue high-level commitment from the involved agencies to commit to e-payment for their credentials. Focus on making systems relevant to users (easy to use, interact with systems they already use).
		Ask for more money, outsource more.
		Nothing.
		Don't go down the CVISN path too early.
		More realistic cost estimates and examples of other states' experiences would have helped immensely in the planning process.
		Not started until we had a dedicated architect.
		Additional FTEs allocated to the functions performed by our Dept of Revenue.
43	What was the greatest surprise your deployment team encountered?	The very high percentage of EC and ES users.
		The lack of a testing facility for infrastructure systems. The two that come to mind are our state's regional processing center and SAFER. Both of these organizations have no facility to test the state interface. While the Feds were good at spending a lot of time to develop interoperability test scenarios, they still do not have an adequate test facility to ensure that the interface and data content are correct. It is possible for a state to corrupt the SAFER data base to the point of being inoperable.
		Workshops/training/conferences are excellent, and that reduced our surprises to none.
		No response
		We were surprised how smoothly everything went. We were also impressed at how comprehensive the material in the COACH documents proved to be.
		We were always in a battle for funding.
		The length of time to complete procurements and contracts.
		It was surprising how difficult it was to develop an XML interface between SAFER and PreView. In addition, the effort required to maintain this interface, particularly with frequent changes being made by the ACCB.
		We were surprised to realize how much we have accomplished. We discovered that we are well on the way to accomplish other listed goals. The setbacks are not insurmountable and progress has been made.
		We found that scope creep expanding the potential applications has been impressive. Improving technologies, availability of additional data and agency wishes have led to changes to the original designs. The events of 9/11 have also offered an obvious synergy to CVISN programs, with security issues growing more important. These issues have increased the potential importance of the program and they need to be added to CVISN projects.
		The "yarn diagrams" in the planning workshops were an eye-opener. CVISN has greatly increased communications, cooperation, and work simplification between agencies.
		The free exchange of information among the interested parties across the nation – states, federal agencies and industry organizations.
		The extensive, detailed requirements that did not always fit with the way our state did business.
		The biggest surprise was the delay in getting a workable CVIEW that could communicate directly with SAFER. The long drawn out SAFER certification is also a surprise. Finally finding out that there is not a national CVIEW with long-term support from the FMCSA is also a surprise. It appears that each state had to develop its own CVIEW with the help of a handful of different consultants.
		Data can cost lots of money, even if it is YOUR data.
		Lack of understanding of how the industry (motor carrier) and agencies function as it relates to IRP and IFTA processing by folks who did the initial designs. There were, and still are, many incorrect assumptions out there. We also found out how inaccurate some of our legacy data bases were.
		There were several surprises related to deploying CVIEW. SAFER 4.2 was late in arriving and didn't include all the functions originally promised. Therefore, we needed to make changes in our CVIEW development project late in the game. The CPU costs for loading CVIEW were also much higher than anticipated.
		The support we received from the executive level and trucking industry was beneficial in moving forward.
44	Describe your best-case scenario for CVISN deployment.	Transparent borders.
		The state's best case scenario is for the current administration to see the benefits of CVISN and provide the correct resources to complete a pilot test of the concept. Because of the current budget deficits, resources are no longer available to complete the process. Adoption of the system has potential benefits that would increase public access at the same time of reducing state resources.

Q#	Question	Responses (Sanitized to maintain anonymity)
		Seamless exchange of safety and credentials data across all jurisdictional areas and standardized carrier ID system recognized by all jurisdictions that promotes targeting unsafe carriers and those without valid credentials.
		Each state has sufficient resources and is able to deploy same or very similar technologies. Real-time exchange of all safety and credential related information. If able to capture the US DOT #, uniformity in processing an automated screening decision at all CVE sites including mobile enforcement. The driver is able to receive information when he passes CVE (i.e., currently most data collection is for regulatory purposes, however the driver needs the data too!). Ideally, complete interoperability including AVI. Uniformity in the definition of a CV, regulations, permitting, fees, etc. across state lines. Ability for intrastate CV safety ratings in SAFER. Federal system is able to handle all the data versus regional CVIEWs.
		A) Real-time exchange of all safety and credential related information. B) If able to capture the US DOT #, uniformity in processing an automated screening at all sites including mobile enforcement. C) Ability for intrastate safety ratings in SAFER. Federal system is able to handle all the data versus regional CVIEWs.
		Fewer unsafe vehicles and drivers on the road. Greater voluntary compliance with regulations. Greater use of the Web for reporting and licensing. A decreased workload for state employees.
		The sharing of real time data with state enforcement and trucking industry. The ability to focus efforts/ resources on unsafe carriers.
		Best Case: Full implementation of a web based credentialing application w/ integrated CVIEW. A common demographics database (verified against USDOT files) will provide the capability to identify carriers attempting to change identity to "reset" their safety and fitness rating and an increased capability to identify carriers trending towards poor safety and fitness.
		Completion of the "seamless national highway vision" would bring uniformity and consistency to the motor carriers.
		We expect to experience a reduction in the number and severity of CMV crashes, fatalities, and injuries; more efficient and timely credentials processing; and enhanced highway preservation. In the future, we would expect to integrate CMV security with CVISN.
		Uniformity in data and sharing of safety and credentialing information between all participating jurisdictions.
		E-carrier credentialing 'modernized' so it is quick, fully available on the web (including payment), and as paperless as possible. E-screening effectively used at busy roadside site, allowing enforcement to concentrate on bad carriers and allowing good carriers to travel with fewer interruptions. Interoperability between adjacent states.
		Complete interoperability between state systems. Improved safety. Reduced delays at Ports of Entry. Better enforcement and compliance. Reduction in administrative work and costs for both carriers and state governments.
		Accuracy of data and improved operational efficiency for the states and their customers.
		In a small corridor state, SIE in real time is essential. We have a good relationship with our border states. We realize that safety must be addressed from a regional standpoint, because we all have limited resources.
		The basic objectives of a safer highway that operates marginally more cost effectively would be achieved. It's also reasonable to assume that we can improve security.
		EC has the greatest possibility for benefits to both the carriers and the states.
		Real time exchange of data about carriers from registration through enforcement. Carriers would be able to process all transactions electronically, roadside enforcement would be aided by transponders or other technology that would provide carrier, driver and vehicle information far in advance of the vehicle pulling into an inspection station; and, enforcement actions would be available in real time to carriers and other enforcement agencies to speed up the process and ensure that bad actors were kept off the road.
		Reduced accidents; reduced wear and tear on the state's highway infrastructure; ability to accommodate increased demand for credentials without increasing staff; ability to deploy additional FTEs from credentials processing to revenue recovery functions such as audit; higher operating productivities for safe and legal carriers; improved motor carrier compliance.
		Interoperability!
		Better access to better quality data.
		Increased freight mobility, improved safety, and reduced carrier operating costs.

Q#	Question	Responses (Sanitized to maintain anonymity)
		There would be consistent CVISN deployment across all states, resulting in a decrease in traffic fatalities/injuries, more efficient carrier operations, and increased efficiencies and effectiveness for state agency CVO programs.
		Better enforcement will be the biggest advantage, followed by administrative efficiency.
		All trucks would have transponders. Enforcement personnel would be able to look at just vehicles they need and would be able to perform safety inspections.
45	What benefit or lesson learned, not covered in any previous question, do you think of as important?	Do your homework. Research providers and insure all collected data is shared by the collectors.
		Early involvement of technical it staff is essential in obtaining success. Often times, new approaches to technical solutions are not embraced by existing staff unless integrally involved in the development of the solution.
		Cost and time projections were under estimated. It's more difficult to obtain fiscal resources today versus in previous years due our state's fiscal shortfall.
		N/A until further progress is made in CVISN deployment
		Follow the CVISN Checklist. Cross every "T" and dot every "I".
		None.
		Despite the focus of FMCSA on CVISN implementation, the ability to obtain Federal funding for CVISN costs is very limited. Implementation schedules must be based on funding availability.
		Costs have been much higher than originally estimated and obtaining funding has been a constant challenge.
		Be flexible and realize that your timeline is not cast in concrete. Seize all opportunities to move the program forward, even if it doesn't happen in the order you thought it would. Don't let setbacks become overwhelming. Join in the conference calls on a monthly basis and realize that each state has unique challenges. You are not alone.
		Progress should be in increments. We think that we have been, in part, successful because we didn't try to do everything at once. Our EC project was actually initiated apart from CVISN and enabled us to focus on what we needed from this rather than what CVISN required. This actually produced a richer product.
		Implementation of CVISN, intensifies the integration CVO functions and the sharing of information across organizational and geographic boundaries. These concepts are not new, but the scope and intensity are; what was done in the past will probably have to be changed.
		Plan for the future, including maintenance and replacement. High-tech systems will become obsolete in a short timeframe. Be flexible. Take advantage of systems developed by vendors and other states. Think of regional and corridor solutions.
		To be effective, a long-term funding commitment will be necessary. States will have to provide information to SAFER and the data must be verifiable. The FMCSA will need to re-evaluate its position on interoperability.
		Don't think that the CVISN deployment, particularly on the EC side of the program, will reduce costs for the state. Don't market it as a cost saver. States do need to be aware of the benefits of centralized data storage and processing and the CVISN program can be used as the catalyst to having real time data flow between agencies and the elimination of the duplication of data.
		It's important for the CVISN program to have an adept IT staff that can translate vague directions into a CVISN plan. FMCSA shouldn't encourage states to proceed with CVISN plans/designs until the states have the needed organizational structure and skills (especially in the IT area) in place. Unprepared states don't get much out of the CVISN workshops and don't produce a useful CVISN plan/design.
		CVISN is not a one-size-fits-all program. States should only proceed with the elements that benefit them. The Program Plan should not parrot the FMCSA planning documents, but rather be a serious study of what the state wants to do.

Q#	Question	Responses (Sanitized to maintain anonymity)
	Use the space provided below to add to, clarify, or expand on your answers.	In October of 1998, it was determined the CVISN software being developed by two other prototype states would not be ready for distribution to the CVISN pilot states as public domain software. Therefore, it became necessary to procure custom developed software from a third party vendor. As a result of not having public domain software available, there was a significant increase in the projected cost of the project, as well as a lengthy time delay. In September of 1999, the Governor signed the Commercial Vehicle Registration Act of 2001. This legislation dramatically changed how commercial vehicle registration weight fees were calculated and had a significant impact on the DMV legacy systems. This resulted in DMV's technical support personnel assigned to assist the CVISN Project being removed from project support for a period of approximately 15 months, causing further delays.
		Challenges have included increasing motor carrier use of CVISN technologies, especially ES; increasing roadside inspectors' confidence in CVISN, and the ability to identify all commercial vehicles at mainline speeds.
		CVISN Observations: Over six years after CVISN first surfaced nationally, CVISN goals and objectives remain timely, valid and worthwhile. This is very significant because in our rapidly changing world, any technology project that remains valid six years after origination must have been pretty well thought out. Our state is pleased to be a CVISN participant and believes that FMCSA deserves a good deal of credit for the assignment, over the long haul, of quality people to the CVISN project. 1.) Our DOT envisioned and designed an automated and integrated system very much like CVISN several years before CVISN became a Federal initiative. DOT undertook this pre-CVISN work to improve the delivery of customer services, to automate manual services at the instruction of our Legislature, and to provide access to enforcement information electronically at the roadside and the desktop. Beginning in 1994, using state funds secured through our normal Legislative budget review and approval process, DOT partnered with a private firm and HELP/PrePass to develop and implement this vision. As a result, CVISN was nearly a reality in our state when DOT signed on as a CVISN state in 1999. But our CVISN design incorporated different technology components, architectural standards and processing methodology than the FMCSA-approved CVISN, and we spent the better part of the next three years arguing these differences with FMCSA, university supporters, and state-level CVISN leaders. DOT's single largest barrier to CVISN Level 1 attainment, therefore, has been FMCSA's unwillingness to accept the possibility that more than one "right" way to accomplish CVISN might exist. 2.) From the beginning, CVISN has been broadly supported inside our state. This is because the technology applications resident within CVISN provide critical information and services for our state's customers and employees at a price we can afford. This affordability is the direct result of a price sensitive state/private-sector partnership approach to doing business that is an economic necessity in our state. Our CVISN Level 1 capabilities cost slightly over $1 million because it was built with proven, existing, private sector developed products and equipment. Our approach is also consistent with the National ITS recommendation to develop private sector partnerships. In our state, CVISN is not a unique or "free standing" program with dedicated hardware, software, support resources or its own operating budget. Rather, CVISN was designed to operate in concert with other technology applications using shared communication lines, shared servers, and with shared user and maintenance support provided under comprehensive DOT service contracts. Throughout most of the past six years DOT's state/private sector partnership approach to CVISN received little or no support from FMCSA. Fiscal necessity led us to affordable, private sector-subsidized technology solutions. Private sector/state partnering is a cost-based necessity for our state, but for a very long time FMCSA failed to acknowledge or support technology development and implementation alternatives contrary to its own. Thank you for the opportunity to comment.
		Final word of advice...bring others in your state or on your team up to speed, so you have back-up for deliverables if needed.
		Although this is a useful exercise it needs to be understood that this evaluation is difficult at best to provide good information for our state. The project was started almost 10 years ago and this information is being requested after much of the work has been completed. Consequently, we are ending up spending an enormous amount of time recreating work rather than moving forward. It is important to share lessons learned but it should be something that is done from the beginning versus going back in time and trying to recall information. This is especially true with regard to the fiscal and computer deployment information which is almost impossible to go back and figure out who did what where when and why since a lot of it may have been done under other programs for other reasons but also accomplishes the goals of CVISN.

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APPENDIX G.
CVISN SELF-EVALUATION DATA COLLECTION TEMPLATES: BENEFITS, COSTS, AND LESSONS LEARNED (OCTOBER 2003)

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Memorandum

U.S. Department
of Transportation
Federal Motor Carrier
Safety Administration

Subject: Templates for CVISN Self-Evaluation Report

Date: October 17, 2003

From: Jeffrey L. Secrist
Transportation Specialist
Office of Research and Technology

In Reply Refer To:
MC-RTT

To: State CVISN Program Managers

Enclosed are three questionnaire-style templates for your use in preparing your state's CVISN Self-Evaluation Report. The templates are designed to help you report on the status and plans for CVISN deployment, costs, benefits, and lessons learned in your state, and to help the U.S. DOT combine, compare, analyze, and publish information on deployments across all states receiving CVISN earmark funds for infrastructure deployment.

By completing and returning the three enclosed templates, you will have provided the major part of your self-evaluation report to DOT, which is required under the terms of your partnership agreement with the Federal ITS earmark program.

You are asked to complete the templates by December 19, 2003**.** Be sure to keep a copy of the completed templates for your records. Please contact me by e-mail, Jeff.Secrist@ fmcsa.dot.gov, or by phone at (202) 385-2367, if you need more information about the CVISN self-evaluation program in general. Please send completed templates and supporting information to Vince Brown. This hard-copy version is intended to match the content of the Web-based self-evaluation templates. If you have questions about the Web-based data collection templates, contact Pamela Vandergriff at vandergriffp@saic.com.

Below is some background information on the self-evaluation process and guidance for completing the three templates. Note that separate guidelines are included for each template, in case you need to distribute any of the three templates to other agencies or departments for completion.

Purpose of the Self-Evaluation Process

Self-evaluation reports are expected to foster the widespread deployment of CVISN through the sharing of timely, accurate, usable information among states. That is, states now in the planning, decision-making, or early deployment stages can learn from the experiences of others; and states further along in the deployment process can learn new ideas that might help them improve their existing systems and networks. Self-evaluation reports will also help DOT in overall program planning and economic/investment analyses.

Purpose of the Templates

As part of the ITS Partnership Agreement for states to receive federal funds under TEA-21, each state has agreed to prepare and submit to DOT a self-evaluation report, which is to cover three main topics:

1. Lessons Learned
2. Benefits of CVISN
3. Costs of CVISN.

The Federal Motor Carrier Safety Administration (FMCSA), in cooperation with the ITS Joint Program Office, has developed a series of self-evaluation templates or information collection forms that will yield important information. In setting up these self-evaluation templates, the FMCSA is building on the evaluation framework developed for the CVISN Model Deployment Initiative (March 2002) by defining data elements and measures that are as realistic and quantifiable as possible.

The information reported on the **Deployment Template** will help DOT to better understand the general shape and extent of CVISN deployments at this time across the states. This template will provide objective data on what technologies are now being deployed, in what numbers, and in what specific configurations or applications. The information reported on the **Cost Template** will enable DOT to gather actual, current information on what states have spent (including funds from federal, state, local, and other revenue sources) to deploy their particular version of CVISN. The information reported on the combined **Benefits and Lessons Learned Template** will help DOT understand what positive outcomes have been observed, what obstacles have been encountered and overcome, and what challenges remain.

Quantitative information reported on the templates, when summed and viewed across the states, will be especially helpful as input to broader, more formal economic and benefit-cost analyses of CVISN. These analyses will be made available to states. Thus, no state is expected to generate its own full-scale, quantitative benefit-cost report.

The challenge in this process has been to identify relevant descriptors or data categories. Data elements in the templates have been designed to be recognizable, applicable, and comparable from state to state, and helpful to future cost analyses, given the variety of CVISN deployments now in progress.

General Guidance for Completing All Templates

- The costs and benefits templates are based on the deployment template, so it is recommended that you complete the deployment template first.

- Information requested on the deployment and cost templates should be available from your state's funding decision packages, plans, budgets, reports to legislators, and other business documents. In completing the benefits and lessons learned template, please share any available quantitative, measurable benefits information. Any supporting qualitative and anecdotal evidence you have is also requested.

- It may be helpful for you to go over the templates in a meeting of your state's CVISN team, so that several viewpoints can be represented in the responses, especially regarding the perceived and measured benefits of CVISN deployment.

- This self-evaluation reporting process is not related to the separate deployment assessment matrix, CVISN Level 1 checklist, or scorecard process.

- The self-evaluation reporting process is not intended to be an audit of federal, state, or local expenditures. Rather, the process is intended to help states learn what is being deployed, what it has cost other states to deploy and operate particular systems for commercial vehicle operations, and what the most important lessons have been. In this way it is much more like an independent, research-oriented survey than a cost accounting activity.

- DOT expects to aggregate unit cost data before making any public statements or summaries of findings. DOT may, however, choose to post some kinds of system cost data, which would be traceable to a specific state source, on the existing ITS cost database (www.benefitcost.its.dot.gov). If you wish any of the cost data you report in your state's self-evaluation templates to be considered proprietary or sensitive, please note it as such in the space provided in the Comments and Qualifiers section.

- As expected with any emerging technology, different states and jurisdictions use different labels or terms to refer to similar CVISN processes, systems, and devices. We have attempted to use prevailing or standard terms. If your state uses terminology different from that given in the templates, you are welcome to add comments or clarifications in the space provided.

- Space is provided for you to supply additional information applicable to your state, if a data element is not included in the template, or if you need more room.

- **When You Have Completed Your Templates.** You are asked to complete the templates by December 19, 2003. Be sure to keep a copy of the completed templates for your records. Please contact Jeff Secrist by e-mail, Jeff.Secrist@ fmcsa.dot.gov, or by phone at (202) 385-2367, if you need more information about the CVISN self-evaluation program in general. Send completed templates and supporting information to Vince Brown.

Guidance for Deployment Self-Evaluation Template

- **Organization.** This template has five major parts:

  - Information About Respondents
  - Credentials Administration (IRP, IFTA, and other credentials)
  - Roadside Safety Information Exchange
  - Roadside Electronic Screening (clearance or preclearance)
  - General Information About CVISN

  Please note that the IRP section (Q6 through Q18) and the IFTA section (Q19 through Q31) are very similar to each other.

- **Current Versus Future Services.** The template is mainly intended to represent the current, actual deployment status in your state, and what your state's experience has been. Many items, however, also request information on your state's plans for deployment 6 months and 12 months from now. These are supposed to be your best estimates of the near-term future of CVISN services or elements not yet deployed in your state, so that we can better distinguish states just on the verge of deployment from those that have chosen not to deploy one or more functions of CVISN. The 6- and 12-month estimates should include the sum of both existing and new deployments.

- **Counting the Sites You Operate.** Several questions ask about the number of weigh and/or inspection sites operated by your state. Count such sites that are located on opposite sides of the same highway as two sites. For example, count I-5 northbound and I-5 southbound at milepost 275 as two separate weigh station sites.

- **Reporting Annual Data.** Several questions ask for annual data, which can be either the past 12 calendar months or your state's most recently completed annual (12-month) reporting period, such as a fiscal or accounting year. Use whichever period is more convenient.

Guidance for Cost Self-Evaluation Template

- **Organization and Definitions.** This template has four major parts:

  - Information About Respondents
  - Electronic Credentialing
  - Roadside Safety Information Exchange
  - Roadside Electronic Screening (Clearance or Preclearance)

  Electronic credentialing, or credentials administration, is understood to consist of four discrete steps: motor carrier application, state processing, carrier fee payment, and state

issuance of the official credential. A state may have automated one or more of these steps in stages while deploying CVISN electronic credentialing. CVISN electronic credentialing is understood to include IRP, IFTA, and other types of credentials or permits.

The two roadside functions are (1) safety information exchange, or the transmittal of safety and credential information to and from the roadside for use in supporting enforcement and inspection decisions; and (2) electronic screening, or the enrollment of transponder-equipped vehicles in an automated preclearance program enabling some portion of vehicles to bypass weigh stations.

To help you navigate the template, here are the major divisions of cost categories:

One-Time (Start-Up) Costs

- *Equipment and Materials (including installation costs and excluding lease payments)*
- *Purchased Software*
- *Labor for Start-Up (separate lines for state employees, contractors, and third-party vendors)*
- *Other Start-Up Costs*

Recurring (Annual) Costs

- *Operating and Maintenance (including lease payments)*
- *Labor for Ongoing Activities (separate lines for state employees, contractors, and third-party vendors)*
- *Other Recurring Costs*

It is important to distinguish between one-time or start-up costs and recurring or annual costs.

For most elements, unit cost information is preferred to total cost information. Unit costs make the data more meaningful in comparing deployment costs across states. Total costs are meaningful only if supported by a quantity deployed or by a clear description of what the cost represents.

- **Cost Elements Not Shown on the Template.** Space is provided in each part of the template for you to add cost elements from your state that are not included in the given lists of cost elements. You can also list costs of other ITS/CVO systems not directly related to CVISN Level I deployment, such as infrared inspection system (IRIS) vans or remote monitoring sites. As expected with any emerging technology, different states and jurisdictions use different labels or terms to refer to similar CVISN processes, systems, and devices. We have attempted to use prevailing or standard terms. If you add your own cost elements, be sure to describe the function specifically, so that comparisons can be made across states.

- **Supporting Cost Documentation.** You are also welcome to send in supporting cost documentation, such as spreadsheets or existing budget reports, using the address shown at the end of the template.

- **Actual Versus Estimated Costs.** The costs that you report on this template should relate to the CVISN systems that your state has deployed or is deploying in the near future, as reflected in your state's deployment template. That is, analysts should be able to track from the information on your state's deployment template to the information on your state's cost template, to better understand what the cost values represent. Indicate in the space provided whether each cost is actual or estimated. Actual incurred cost values are preferred, but good-faith estimates, especially for components or services that have been negotiated and purchased or ordered but not yet delivered or deployed, are also useful.

- **Reporting Annual Costs.** For annual costs, you can use either the last 12 calendar months or the most recent 12-month reporting period, whichever is more convenient. If your state has been incurring CVISN O&M or labor costs for less than 12 months, estimate what the annual cost will be after the first year, and indicate in the "Actual" or "Estimated" column that the value given is an estimate.

- **Costs Applicable to More Than One Function.** Because one of the purposes of CVISN is to permit separate CVO functions to interact electronically, some cost elements could be double-counted by mistake. For example, a single network server or your state's CVIEW system could be configured to collect fuel tax and license/registration information from the credentials administration program as well as safety inspection information from the roadside (part of the safety information exchange function). The same server could also make this information available to your state's transponder-based electronic screening (preclearance) system.

  To avoid erroneous double-counting, be sure that the costs for a single piece of equipment or software package used across several CVO functions are counted only once in completing your cost template. If a single hardware item or software system is used in more than one function, you should indicate this in the "Comments and Qualifiers" column of the template.

  Likewise, computer equipment and software may be used for both CVISN and non-CVISN functions. Such cost items should also be allocated as accurately as possible to reflect (a) the portion of the cost incurred because of the CVISN deployment and (b) the portion giving users access to a function that was unavailable before CVISN deployment.

  Computers used in CVISN functions may not belong to a single state agency. For example, states may purchase computers for state DOT or highway departments, motor carrier or public utilities enforcement, or state patrol. Any computer equipment purchased by the state for use in CVISN deployment should be included in your report.

- **Labor Costs.** Regarding labor hours and labor costs, it is expected that, in some states, a single staff member will work on some CVISN tasks and some non-CVISN tasks during a typical year. Estimate or allocate the number of hours dedicated to your state's CVISN deployment (both the initial or start-up hours and the recurring or annual hours). When reporting labor costs in terms of dollars, include the "fully loaded" labor cost to the state, including base pay and fringe benefits for your state's employees.

- **Equipment Purchased by Contractors.** Equipment purchased for state use, even if purchased through a contractor, should be included in the state's capital cost section, not in the contracted cost section. That is, contracted costs are intended to represent only the labor and services—and not the capital equipment—that your state purchases from a contractor.

- **Request for Baseline (Pre-CVISN) Labor Costs for Credentialing.** The annual labor hours or labor cost section for Electronic Credentialing requests baseline data on pre-CVISN (legacy system) labor levels and on post-deployment labor levels. The purpose of this comparison is to assess any change in labor costs to the state resulting from the deployment and use of CVISN technologies.

- **Comments and Qualifiers.** For each cost element, you are encouraged to provide comments and qualifiers to represent special circumstances or descriptions of the function of cost elements particular to your state's deployment.

  Examples of comments and qualifiers that would be useful to future cost analysts include pointing out whether the deployment cost includes installation; giving a vendor name and model or product identifier (model number or software version); and saying whether a dollar cost reflects a quantity discount or other special pricing arrangement. As another example, assume that your state awards a single maintenance contract, covering labor, parts, and materials, and that these costs cannot be separated from each other. On your template, you would record the cost under either "annual maintenance cost" or under "purchased or contracted annual labor," but not both, and indicate the nature of the charge in the "Comments and Qualifiers" column.

Guidance for Benefits and Lessons Learned Template

- **Organization and Definitions.** This template has eight parts:

  - Information About Respondents
  - Benefits of CVISN Deployment
  - Institutional Issues
  - Technical Challenges
  - Innovative Financing
  - Public-Private Partnering
  - ITS Standards and Architecture
  - Other Benefits or Lessons Learned

  You are asked to supply written responses to specific questions and to provide supporting data where available.

- **Qualitative and Quantitative Information.** This template is more open-ended and qualitative than the deployment or cost templates. This template gives your state the opportunity to supply the DOT and other states with information on the surrounding issues and the broader context of your state's CVISN deployment. Still, you are encouraged to provide quantitative data (e.g., statistical, financial, or other numeric-format information), because such data tend to be much more comparable from state to state and more valuable for conducting benefit-cost evaluations. The most useful information on benefits and lessons learned would include some numerical values demonstrating tangible, measurable outcomes from your state's CVISN deployment, as well as the written observations and opinions of hands-on project leaders who witnessed the deployment and can speak to its successes and challenges.

- **Supporting Documentation.** DOT may want to post information from your template on the ITS Benefits Database Web site. To be included on that site, your information needs to be supported by backup documentation in the form of an evaluation report, peer-reviewed journal article, conference paper, or other credible evidence based on some thorough methodology and internal or peer review. Please send any available supporting documentation to the address shown at the end of the template.

- **Questions That Do Not Apply.** If a question is not relevant to your state's deployment, indicate "N/A" (not applicable) in the space provided.

Glossary

FTE	Full-time equivalent, or a unit of labor equal to one person working 40 hours per week (2080 hours per year)
IFTA	International Fuel Tax Agreement
IRP	International Registration Program
ITS	Intelligent Transportation Systems
Plug-and-Run	A weigh scale site with no above-ground scale house, but with a static scale installed permanently in the ground
Snapshot	A condensed collection of safety and summary-level information pertaining to who is a carrier, where a carrier is based, his basic type of operation, and the carrier's safety rating and safety record.

CVISN Deployment Self-Evaluation Template

U.S. Department of Transportation, Federal Motor Carrier Safety Administration

Version: October 17, 2003

When completed, this template will become part of your state's CVISN Self-Evaluation Report, as required in the ITS Partnership Agreement between your state and the federal government.

Send completed templates to: Please send completed templates and supporting information to Vince Brown by December 19, 2003**.** Be sure to keep a copy of your completed template for your records. See the instructions included with the letter of transmittal. You are welcome to attach additional pages with clarifications and supporting information. If you attach additional pages, please indicate the template item number to which your information is related. If you are completing the form by hand, please print.

I. Information About Respondents	
1	Name of person primarily responsible for completing the form:
2	Telephone number of person completing the form:
3	Agency, department, and division of person completing the form:
4	Names of other persons providing supporting information on the form:
5	Date when the form was completed (mm/dd/yyyy):

I. Credentials Administration

IRP Credentials

Item	Question
6	Approximately how many commercial motor carrier accounts and commercial vehicles (power units) now have IRP credentials in your state?

Number of IRP Carrier Accounts (rounded to nearest hundred)	Number of IRP Commercial Vehicles (rounded to nearest hundred)

7	An IRP credentialing **transaction** is defined as the process of obtaining new registrations, renewals, or supplemental credentials for one or more vehicles. Approximately how many of each of the various types of credentialing transactions were processed in the past 12 months (or the latest reporting year) in your state, including CVISN, electronic, walk-in, paper-based, or legacy system transactions? Show both the total number of IRP transactions and the total number of IRP credentialed vehicles.

	New IRP	Renewal IRP	Supplemental IRP
Total number of transactions per year			
Total number of vehicles credentialed per year			

8	Considering every credentialing transaction as having four main steps (shown below at left), complete the table below to show the estimated percentage of each step or part of your state's IRP transactions that now are or soon will be completed using CVISN electronic technology. Include all types of credentialing transactions—new, renewal, and supplemental—in your estimated percentages. Percent = (Number of CVISN IRP transactions / total number of IRP transactions) * 100

		Now	In 6 Months	In 12 Months
Step 1	Carrier transmits the application to the state	%	%	%
Step 2	State processes the application	%	%	%
Step 3	Carrier pays the fee to the state	%	%	%
Step 4	State issues the official credential	%	%	%

Item	Question
9	Consider the percentage of commercial motor carrier accounts in your state that apply for IRP credentials electronically. Complete the table below to show the approximate percent of motor carrier accounts using CVISN for IRP applications now and those expected to be applying for such credentials using CVISN in the near future.

	Now	In 6 Months	In 12 Months
Carrier Accounts	%	%	%

Item	Question
10	Consider a credentialing system as having two parts: a "front-end" user interface or data entry part and a "back-end" database management and data processing or reporting part. Use check marks (✓) in the table below to indicate who owns and who operates each of the various parts of your state's electronic credentialing system for processing IRP credentials. If the ownership or operation is a joint effort, briefly describe the arrangement in the space below.

	Owned by Your State	Owned by Vendor	Operated and Maintained Mainly by State Employees	Operated and Maintained Mainly by Vendor Employees
Front-end user interface system and related central-office hardware				
Back-end database management system and hardware				

11 Comments on special ownership or other types of operation/maintenance arrangements for your state's IRP credentialing system (if applicable):

12 Which third-party vendor (if any) does your state use for any aspect of IRP credentialing?

Check all that apply:

- ☐ ACS/VISTA/MVS Express
- ☐ Polk/COVERS/COVERSnet
- ☐ CACI International Inc.
- ☐ Not applicable
- ☐ Other (please specify): _____

Item	Question
13	If carriers in your state now can (or soon will be able to) pay fees and costs related to IRP credentials electronically, use check marks (✓) in the table below to show the methods that they can use now and in the near future.

	Carriers Can Use Now	Carriers Can Use in 6 Months	Carriers Can Use in 12 Months
Credit card			
Debit card			
Automatic clearinghouse (ACH) credit			
ACH debit			
Other automatic withdrawal or account sweep service			
Other electronic payment method (please specify):			

14	If your state now issues (or soon will be able to issue) official IRP credentials electronically, use check marks (✓) in the table below to show the issuing methods used now and in the near future.

	State Uses Now	State Will Use in 6 Months	State Will Use in 12 Months
E-mail messages			
Internet/HTML/Web-based			
Facsimile/fax machine			
Other method of issuance (please specify):			

Item	Question
15	What is the schedule for your state to join the IRP Clearinghouse? ☐ Already participate in the IRP Clearinghouse ☐ Expect to join within 6 months ☐ Expect to join within 12 months ☐ Expect to join within 1 to 2 years ☐ Do not plan to join the IRP Clearinghouse
16	Which type of computer connections do carriers use to participate in your state's IRP electronic credentialing system? Check all that apply: ☐ Internet/HTML/Web-based system ☐ Electronic bulletin board system ☐ Carrier automated transaction (CAT) ☐ Not applicable ☐ Other (please specify): _____
17	About how often are your state's IRP credentialing data updated and transferred to CVIEW (or another centralized system) where the data can be accessed for roadside safety or credentials checks? Check one: ☐ Hourly ☐ Daily ☐ Every 2 to 6 days ☐ Weekly ☐ Twice monthly ☐ Monthly ☐ Less often than once per month ☐ Not applicable ☐ Other interval (please specify): _____

Item	Question
18	If your state provides IRP credentialing data to an outside organization for electronic screening (for example, PrePass), about how often are the IRP credentialing data typically transferred to the electronic screening or clearance system? Check one: ☐ Hourly ☐ Daily ☐ Every 2 to 6 days ☐ Weekly ☐ Twice monthly ☐ Monthly ☐ Less than once per month ☐ Not applicable ☐ Other interval (please specify): _____

IFTA Credentials

Item	Question
19	Approximately how many commercial motor carrier accounts and commercial vehicles (power units) now have IFTA credentials in your state?

Number of IFTA Carrier Accounts (rounded to nearest hundred)	Number of IFTA Commercial Vehicles (rounded to nearest hundred)

20	An IFTA credentialing **transaction** is defined as the process of obtaining new registrations, renewals, or supplemental credentials for one or more vehicles. Approximately how many of each of the various types of credentialing transactions were processed in the past 12 months (or the latest reporting year) in your state, including CVISN, electronic, walk-in, paper-based, or legacy system transactions? Indicate both the total number of IFTA transactions and the total number of IFTA credentialed vehicles.

	New IFTA	Renewal IFTA	Supplemental IFTA
Total number of transactions per year			
Total number of vehicles credentialed per year			

21	Considering every credentialing transaction as having four main steps, complete the table below to show the estimated percentage of each step or part of your state's IFTA transactions that now are or soon will be completed using CVISN electronic technology. Include all types of credentialing transactions—new, renewal, and supplemental—in your estimated percentages. Percent = (Number of CVISN IFTA transactions / total number of IFTA transactions) * 100

		Now	In 6 Months	In 12 Months
Step 1	Carrier transmits the application to the state	%	%	%
Step 2	State processes the application	%	%	%
Step 3	Carrier pays the fee to the state	%	%	%
Step 4	State issues the official credential	%	%	%

Item	Question
22	Consider the percentage of commercial motor carrier accounts in your state that apply for IFTA credentials electronically. Complete the table below to show the approximate percent of motor carrier accounts using CVISN for IFTA applications now and those expected to be applying for such credentials using CVISN in the near future.

	Now	In 6 Months	In 12 Months
Carrier accounts	%	%	%

Item	Question
23	Consider a credentialing system as having two parts: a front-end user interface or data entry part and a back-end database management and data processing or reporting part. Check the boxes below to indicate who owns and who operates each of the various parts of your state's electronic credentialing system for processing IFTA credentials. If the ownership or operation is a joint effort, briefly describe the arrangement in the space below.

	Owned by Your State	Owned by Vendor	Operated and Maintained Mainly by State Employees	Operated and Maintained Mainly by Vendor Employees
Front-end user interface system and related central-office hardware				
Back-end database management system and hardware				

Item	Question
24	Comments on special ownership or other types of operation/maintenance arrangements for your state's IFTA credentialing system (if applicable):

25 Which third-party vendor (if any) does your state use for any aspect of IFTA credentialing?

Check all that apply:

- ☐ ACS/VISTA/MVS Express
- ☐ Polk/COVERS/COVERSnet
- ☐ CACI International Inc.
- ☐ Not applicable
- ☐ Other (please specify): _____

Item	Question
26	If carriers in your state now can (or soon will be able to) pay fees and costs related to IFTA credentials electronically, check the boxes below to indicate the methods that they can use now and in the near future.

	Carriers Can Use Now	Carriers Can Use in 6 Months	Carriers Can Use in 12 Months
Credit card			
Debit card			
Automatic clearinghouse (ACH) credit			
ACH debit			
Other automatic withdrawal or account sweep service			
Other electronic payment method (please specify):			

27	If your state now issues (or soon will be able to issue) official IFTA credentials electronically, check the boxes below to indicate the issuing methods used now and in the near future.

	State Uses Now	State Will Use in 6 Months	State Will Use in 12 Months
E-mail messages			
Internet/HTML/Web-based			
Facsimile/fax machine			
Other method of issuance (please specify):			

Item	Question
28	What is the schedule for your state to join the IFTA Clearinghouse? ☐ Already participate in the IFTA Clearinghouse ☐ Expect to join within 6 months ☐ Expect to join within 12 months ☐ Expect to join within 1 to 2 years ☐ Do not plan to join the IFTA Clearinghouse
29	Which type of computer connections do carriers use to participate in your state's IFTA electronic credentialing system? (Check all that apply) ☐ Internet/HTML/Web-based system ☐ Electronic bulletin board system ☐ Carrier automated transaction (CAT) ☐ Not applicable ☐ Other (please specify): _____
30	About how often are your state's IFTA credentialing data updated and transferred to CVIEW (or another centralized system), where the data can be accessed for roadside safety or credentials checks? (Check one) ☐ Hourly ☐ Daily ☐ Every 2 to 6 days ☐ Weekly ☐ Twice monthly ☐ Monthly ☐ Less often than once per month ☐ Not applicable ☐ Other interval (please specify): _____
31	If your state provides IFTA credentialing data to an outside organization for electronic screening (for example, PrePass), about how often are the IFTA credentialing data typically transferred to the electronic screening or clearance system? (Check one) ☐ Hourly ☐ Daily ☐ Every 2 to 6 days ☐ Weekly ☐ Twice monthly ☐ Monthly ☐ Less often than once per month ☐ Not applicable ☐ Other interval (please specify): _____

Credentials Other Than IRP and IFTA

Item	Question
32	If your state issues any other kinds of permits or credentials besides IRP and IFTA, complete the table below to indicate approximately how many applications were received for each kind of credential using CVISN technology in the past 12 months (or the latest reporting year) in the first column. Then indicate in the second column how many were received by all methods combined (walk-in + paper forms + legacy system + CVISN, etc.).

Type of Permit or Credential	Number of Applications Received per Year	
	Applications Received Using CVISN	Total Applications Received by All Methods (CVISN + Non-CVISN)
Single state registration system		
Single trip (motor carrier, use fuel, permit)		
Registration (30-, 60-, 90-day)		
Envelope permits		
Oversize/overweight		
Hazardous materials		
Weight/distance		
Highway use tax		
Others (please specify):		

II. Roadside: Safety Information Exchange

Item	Question
33	How many permanent, fixed weigh scale sites (with a scale house or other permanent structure and with a static scale installed in the ground) does your state operate? Consider each site on a divided directional lane separately. For example, if your state has separate northbound and southbound weigh stations near the same milepost, count them as two sites.
34	How many of these permanent weigh scale sites (with a scale house structure) are also used now for vehicle safety inspections and/or credential or compliance checks?
35	How many so-called "plug-and-run" weigh scale sites does your state operate now?
36	How many of these plug-and-run sites are also used now for vehicle safety inspections and/or credential or compliance checks?
37	In the past 12 months (or the latest reporting year), approximately how many commercial vehicles were weighed at your state's permanent weigh scale sites (where a scale is installed in the ground), counting all types of permanent weigh scale sites combined, including those with a scale house and those that are plug-and-run sites?
38	How many of your state's permanent weigh scale sites (where a scale is installed in the ground) are also international or interstate ports-of-entry?

	Sites
Number of **international** ports-of-entry (between the U.S. and another country)	
Number of **interstate** ports-of-entry (between states within the U.S.)	

39	Approximately how many mobile or portable scale systems (meant to be moved from place to place and used on top of the pavement surface) does your state operate now?
40	In the past 12 months (or the latest reporting year), approximately how many commercial vehicles were weighed using state-owned mobile or portable scales in your state?

Item	Question
41	How many permanent roadside **inspection-only** sites (without a static weigh scale installed in the ground) does your state operate now?
42	In the past 12 months (or the latest reporting year), how many commercial vehicles were inspected (for example, Level I, II, or III) by your state's personnel or at your state's weigh and/or inspection facilities, counting all permanent, plug-and-run, mobile, and inspection-only sites combined?
43	How many full-time equivalent (FTE) officers and/or inspectors does your state employ in a typical year to perform commercial vehicle safety inspections?
44	What percent of your state's officers/inspectors involved in CVO or enforcement now use laptop computers equipped with Aspen or equivalent, or are expected to start using laptops soon, to support the inspection process? Percent = (Number with laptop computers / total number of officers or inspectors) * 100

	Now	In 6 Months	In 12 Months
Percent of officers			

45	Is CVISN technology used at any of your state's permanent weigh scale sites to aid the inspection selection process (for example, Aspen with Inspection Selection System, ISS, or connection to SAFER)? ☐ No (go to Question 46) ☐ Yes
	Which of the following scenarios best describes how the inspector's professional judgment, experience, or discretion is typically combined with CVISN computer-based information systems for commercial vehicle inspections in your state? (Check all that apply) ☐ Inspector obtains numeric ISS ratings after inspector decides which vehicles to inspect ☐ Inspector obtains numeric ISS ratings before inspector decides which vehicles to inspect ☐ Computerized decision or selection algorithm queries a database and then, in real time, selects which vehicle to inspect and at what level (inspector has little or no discretion) ☐ Other method of using CVISN technology in inspection selection

Item	Question
	If none of the scenarios (in Item 45) apply to your situation, describe below how your state uses computer-based information systems in commercial vehicle inspections.
46	How many of your state's permanent weigh/inspection sites (where a scale is installed in the ground) are connected now to CVIEW (or equivalent) for carrier or vehicle electronic data "snapshots" (or equivalent)? How many new sites are expected to be connected soon for snapshots? Consider each site on a divided directional lane (for example, eastbound and westbound) separately.

	Now	In 6 Months	In 12 Months
Number of sites			

47	Does your state download or copy database files or full carrier safety profiles from a central system for use on roadside computers, or does it query the central system remotely from the roadside only as needed? ☐ *Downloads full database files for use on roadside computer* ☐ *Queries a central database from remote roadside computer as needed* ☐ *Combination of download and query; methods vary within the state* ☐ *Not applicable*
48	How often does your state usually update the carrier safety and credential information from a central system for use on computers at roadside weigh/inspection locations? ☐ Hourly ☐ Daily ☐ Every 2 to 6 days ☐ Weekly ☐ Twice monthly ☐ Monthly ☐ Less often than once per month ☐ Not applicable ☐ Other interval (please specify): _____

Item	Question
49	How many of your state's laptop computers supporting commercial vehicle safety inspections are configured (or will be configured soon—including existing and new laptops) for wireless data transfer with a central database management system (for example, SAFER or CVIEW)?

	Now	In 6 Months	In 12 Months
Number of laptops			

50 What kinds of wireless systems or protocols does your state use or plan to use?

- ☐ Analog cellular
- ☐ Digital cellular
- ☐ Satellite communication
- ☐ Not applicable
- ☐ Other system (please specify): _____

III. Roadside: Electronic Screening

Item	Question
51	Does your state now offer CVISN electronic screening to enable safe, registered, enrolled vehicles to bypass one or more open weigh stations, or does your state expect to offer electronic screening in the near future? ☐ Now offers electronic screening ☐ Expects to offer electronic screening within 6 months ☐ Expects to offer electronic screening within 12 months ☐ Does not now offer and does not plan to offer electronic screening (go to Question 60)
52	In which electronic screening program or partnership does your state participate or expect to participate? ☐ HELP/PrePass ☐ Norpass ☐ Self-administered ☐ Not applicable ☐ Other (please describe your program or partnership):
53	At how many permanent weigh sites (where a static scale is installed in the ground) does your state now offer (or plan to offer) electronic screening? (The 6- and 12-month estimates should include the sum of both existing and new sites.)

	Now	In 6 Months	In 12 Months
Number of permanent sites that have or expect to have electronic screening			

Item	Question
54	At how many other sites (remote from an existing permanent weigh or inspection site) does your state now use (or plan to use—including existing and new sites) electronic screening technologies?

	Now	In 6 Months	In 12 Months
Number of remote screening sites that use or plan to use electronic screening			

Item	Question
55	How many high-speed mainline weigh-in-motion (WIM) devices does your state have installed or plan to install (including existing and new devices)?

	Now	In 6 Months	In 12 Months
Mainline WIMs			

Item	Question
56	How many reduced-speed ramp or sorter-lane weigh-in-motion (WIM) devices does your state have installed or plan to install (including existing and new ramps/devices)?

	Now	In 6 Months	In 12 Months
Ramp or sorter-lane WIMs			

57 Counting each time an enrolled, transponder-equipped vehicle encountered an electronic screening site, in the past 12 months (or the latest reporting year), approximately how many:

	Number
Commercial vehicle electronic screenings were performed by your state's system?	
Screened vehicles were given a green light transponder signal to bypass an open weigh or inspection station?	
Screened vehicles were given a red light transponder signal to enter a weigh or inspection station?	

58 What is your state's prevailing random pull-in rate? That is, in approximately what percentage of electronic screening-site encounters would a safe, enrolled, transponder-equipped vehicle still be given a red light and requested to enter a weigh/inspection station?

Percent = (Number of red lights / number of station encounters) * 100

☐ Random pull-in rate varies from time to time or from carrier to carrier (If rate varies, briefly describe your state's method of determining pull-in rate in the space provided below:)

☐ Averages 0 to 5 percent

☐ Averages 6 to 10 percent

☐ Averages 11 to 15 percent

☐ Averages greater than 15 percent

☐ Not applicable

Item	Question
59	How are in-vehicle transponders purchased and distributed to motor carriers and vehicles? (Check all that apply) ☐ Purchased and distributed by state government, without direct charge to the participating motor carrier ☐ Purchased by state government and distributed by a third party (outsourced) ☐ Purchased and distributed by interstate program or partnership (for example, PrePass) ☐ Purchased directly from vendor by motor carrier ☐ Not applicable ☐ Other (please specify): _____

IV. General Information About CVISN

Item	Question
60	Does your state use or plan to use the EDI (Electronic Data Interchange) or the XML (Extensible Markup Language) computer programming format or language as your state's standard for CVISN deployment? (Check all that apply) ☐ EDI ☐ XML ☐ Not applicable ☐ Other (please specify): _____
61	Which of the following funding sources does your state use for deploying and operating CVISN technologies? (Check all that apply) ☐ State general revenue funds budgeted for department of transportation/highways ☐ State general revenue funds budgeted for law enforcement ☐ State general revenue funds budgeted for safety/public utilities ☐ State dedicated funds (special taxes, registration fees, or permit fee surcharges) collected from users (that is, from motor carriers) ☐ Federal grants ☐ Federal matching funds or subsidies ☐ Up-front transponder fees charged to motor carriers ☐ Per-bypass fees charged to motor carriers ☐ R&D or deployment funds from alternative sources (give examples) ☐ Private sources (give examples) ☐ Local government (city, county, regional planning) sources (give examples) ☐ Private sources (give examples) ☐ Local government (city, county, regional planning) (give examples) ☐ Not applicable ☐ Other (please specify): _____
62	Use the space provided below to add to, clarify, or expand on your answers, especially with information about aspects of your state's deployment that were not covered in the questions. Please send completed templates and supporting information to Vince Brown. Be sure to keep a copy of your completed template for your records.

CVISN Cost Self-Evaluation Template

U.S. Department of Transportation, Federal Motor Carrier Safety Administration

Version: October 17, 2003

When completed and sent to U.S. DOT, this template will become part of your state's CVISN Self-Evaluation Report, as required in the ITS Partnership Agreement between your state and the federal government.

Send completed templates to Vince Brown. by December 19, 2003. Be sure to keep a copy of your completed template for your records. You are welcome to attach additional pages to the completed templates with clarifications and supporting information. If you attach additional pages, please indicate the template item number to which your information is related. If you are completing the form by hand, please print.

Information About Respondents	
1	Name of person primarily responsible for completing the form:
2	Telephone number of person completing the form:
3	Agency, department, and division of person completing the form:
4	Names of other persons providing supporting information on the form:
5	Date when the form was completed (mm/dd/yyyy):

I. Electronic Credentialing

6	One-Time (Start-Up) Purchase Costs for Equipment and Materials (Including Installation Costs and Excluding Leased Equipment)	Quantity Deployed	Unit Cost, $	Actual (A) or Estimated (E)	Expected Service Life, Years	Comments and Qualifiers
a	Computer network servers for electronic credentialing					
b	Personal computers (desktop or laptop) for state employees to use in electronic credentials administration					
c	Consumable supplies and materials for outreach, internal and external publicity, training, or supporting the deployment of electronic credentialing					
d	Other central office or branch office network hardware and peripherals for electronic credentialing (specify function):					
7	One-Time (Start-Up) Purchase Costs for Software	Quantity Deployed	Unit Cost, $	Actual (A) or Estimated (E)	Expected Service Life, Years	Comments and Qualifiers
a	Credentialing software packages purchased for back-end database management and data processing or reporting					
b	Credentialing software packages purchased for front-end user interface and data entry					
c	Other software purchased for electronic credentialing start-up (specify function)					

8	One-Time (Start-Up) Costs for Labor	Total Labor Hours	Total Labor Cost, $	Actual (A) or Estimated (E)	Comments and Qualifiers
a	State employee labor for new electronic credentialing software development				
b	State employee labor for new hardware configuration (after original installation)				
c	Contractor labor for new electronic credentialing software development				
d	Contractor labor for new hardware configuration (after original installation)				
e	Third-party vendor labor for software development				
f	Third-party vendor labor for hardware configuration				
g	Labor for existing (legacy) system interface and/or modification (state employee labor plus contractor or vendor labor)				
h	Labor for training associated with credentialing system deployment				
i	Other start-up labor costs for electronic credentialing (specify function)				

9	Recurring (Annual) Costs for Operating and Maintaining Electronic IRP Credentialing System (Excluding Labor)	Total Annual Cost to State, $	Actual (A) or Estimated (E)	Comments and Qualifiers
a	Membership fees paid to IRP Clearinghouse			
b	Fees paid to third-party IRP credentials administrator (for example, VISTA, Polk) for operating a back-end database management and data processing system			
c	Fees paid to third-party IRP credentials administrator (for example, VISTA, Polk) for operating a front-end user interface and data entry system			
d	Lease payments for computer equipment (specify function in comments section at right)			
e	Recurring costs for marketing, outreach, publicity, etc.			
f	Other recurring (annual) costs for electronic IRP credentialing operation and maintenance, excluding labor (specify function):			

Include all labor charges for IRP credentials administration, including processing the applications, handling payments, issuing the final credentials, serving customers, analyzing computer systems, programming, reporting, and management. ***If you report labor dollars, use the fully loaded amount, including fringe benefits and other overhead-type labor costs.*** *Provide annual costs for your state's baseline credentials administration function, for comparison with the costs for your state's corresponding credentialing function after the deployment of CVISN technologies.*

		Legacy System Labor (Pre-deployment) Provide hours and/or $			CVISN Labor (Post-deployment) Provide hours and/or $			
10	Recurring (Annual) Labor for IRP Credentialing	Annual Labor, Hours	Annual Labor Cost, $	Actual (A) or Estimated (E)	Annual Labor, Hours	Annual Labor Cost, $	Actual (A) or Estimated (E)	Comments and Qualifiers
a	State employee annual labor							
b	Contractor annual labor							
c	Third-party vendor annual labor							
d	Other recurring (annual) CVISN-related electronic IRP credentialing labor cost elements not listed above (specify function):							

11	Recurring (Annual) Costs for Operating and Maintaining Electronic IFTA Credentialing System (Excluding Labor)	Total Annual Cost to State, $	Actual (A) or Estimated (E)	Comments and Qualifiers
a	Membership fees paid to IFTA Clearinghouse			
b	Fees paid to third-party IFTA credentials administrator (for example, VISTA, Polk) for operating a back-end database management and data processing system			
c	Fees paid to third-party IFTA credentials administrator (for example, VISTA, Polk) for operating a front-end user interface and data entry system			
d	Lease payments for computer equipment (specify function in comments section right in this row)			
e	Recurring costs for marketing, outreach, publicity, etc.			
f	Other recurring (annual) costs for electronic IFTA credentialing operation and maintenance, excluding labor (specify function):			

Include all labor charges for IFTA credentials administration, including processing the applications, handling payments, issuing the final credentials, serving customers, analyzing computer systems, programming, reporting, and management. ***If you report labor dollars, use the fully loaded amount, including fringe benefits and other overhead-type labor costs.*** *Provide annual costs for your state's baseline credentials administration function, for comparison with the costs for your state's corresponding credentialing function after the deployment of CVISN technologies.*

		Legacy System Labor (Pre-deployment) Provide hours and/or $			CVISN Labor (Post-deployment) Provide hours and/or $			
12	**Recurring (Annual) Labor for IFTA Credentialing**	**Annual Labor, Hours**	**Annual Labor Cost, $**	**Actual (A) or Estimated (E)**	**Annual Labor, Hours**	**Annual Labor Cost, $**	**Actual (A) or Estimated (E)**	**Comments and Qualifiers**
a	State employee annual labor							
b	Contractor annual labor							
c	Third-party vendor annual labor							
d	Other recurring (annual) CVISN-related electronic IFTA credentialing labor cost elements not listed above (please specify):							

13	**General Question About Your Electronic Credentialing System**	**Comments and Qualifiers**
	Is your electronic credentialing system available (check one): ☐ In only selected regions within your state ☐ Statewide	

II. Roadside: Safety Information Exchange

14	One-Time (Start-Up) Purchase Costs for Equipment and Materials (Including Installation Costs and Excluding Leased Equipment)	Quantity Deployed	Unit Cost, $	Actual (A) or Estimated (E)	Expected Service Life, Years	Comments and Qualifiers
a	Computer network servers for safety information exchange, including mobile network servers used in roadside enforcement					
b	Desktop personal computers for administering the safety information exchange system (including desktop computers used at roadside check stations)					
c	Laptop personal computers for roadside use in inspections for safety information exchange					
d	Portable printers for mobile enforcement					
e	Wireless modems for vehicle and/or roadside use					
f	Consumable supplies and materials for outreach, internal and external publicity, training, and supporting the deployment or safety information exchange					
g	Other central office, branch office, roadside, or mobile telecommunications equipment for safety information exchange (specify function):					

15	One-Time (Start-Up) Purchase Costs for Software	Quantity Deployed	Unit Cost, $	Actual (A) or Estimated (E)	Expected Service Life, Years	Comments and Qualifiers
a	Safety information exchange software purchased off the shelf					
b	Other software purchased for safety information exchange start-up (specify function):					

16	One-Time (Start-Up) Costs for Labor	Total Labor Hours	Total Labor Cost, $	Actual (A) or Estimated (E)	Comments and Qualifiers
a	State employee labor for new safety information exchange software development (for example, CVIEW)				
b	State employee labor for new hardware configuration (after original installation)				
c	Contractor labor for new safety information exchange software development				
d	Contractor labor for new hardware configuration (after original installation)				
e	Third-party vendor labor for software development				
f	Third-party vendor labor for hardware configuration				
g	Labor for existing (legacy) system interface and/or modification (state employee labor plus contractor or vendor labor)				
h	Labor for training associated with safety information exchange system deployment				
i	Other start-up labor costs for safety information exchange (specify function)				

17	Recurring (Annual) Costs for Operating and Maintaining Safety Information Exchange System (Excluding Labor)	Total Annual Cost to State, $	Actual (A) or Estimated (E)	Comments and Qualifiers
a	Lease payments for computer equipment for safety information exchange (specify function)			
b	Telephone and internet service charges			
c	Wireless communication charges			
d	Charges for linking to central data services (for example, AAMVAnet)			
e	Other recurring (annual) costs for safety information exchange operation and maintenance, excluding labor (specify function)			

18	Recurring (Annual) Costs for Labor (provide hours and/or $)	Annual Labor, Hours	Annual Labor Cost, $	Actual (A) or Estimated (E)	Comments and Qualifiers
a	State employee annual labor				
b	Contractor annual labor				
c	Third-party vendor annual labor				
d	Other recurring (annual) safety information exchange labor costs (specify function):				

III. Roadside: Electronic Screening (Clearance)

Unless otherwise indicated, provide **only those costs that were incurred by your state.** For example, if a private organization or partnership other than your state pays for and installs transponder readers, wiring, computers, etc., at the roadside for electronic screening at no cost to the state, then do not list the costs for that equipment or infrastructure below. If your state purchases its own screening or computing equipment (for example, to interface with the private organization's equipment), then list your state's costs for the state-owned equipment. If a system or device is used in more than one CVISN function, **count it only once.** For example, if a computer database stores and shares information on credentials and inspection history with your state's electronic screening system, then determine the system's primary function, list the system in that section of the cost template, and count the computer and the database costs only once.

19	One-Time (Start-Up) Purchase Costs for Equipment and Materials (Including Installation Costs and Excluding Leased Equipment)	Quantity Deployed	Unit Cost, $	Actual (A) or Estimated (E)	Expected Service Life, Years	Comments and Qualifiers
a	Computer network server dedicated to electronic screening					
b	Desktop personal computer dedicated to electronic screening					
c	Laptop personal computer dedicated to electronic screening					
d	Mainline (highway speed) weigh-in-motion (WIM) scale					
e	Sorter lane (ramp speed) WIM scale					
f	In-vehicle transponder purchased by state for distribution (free of charge) to motor carriers enrolling vehicles in electronic screening					
g	In-vehicle transponder purchased by state for resale (cost-recovery or other basis) to motor carriers enrolling vehicles in electronic screening					
h	Automated vehicle identification (AVI) equipment/system (specify type, for example, DSRC, optical, video, other)					
i	Telecommunication equipment between upstream site and weigh station/base					
j	Electronic sign for weigh station					
k	Loop detector for weigh station					

19	One-Time (Start-Up) Purchase Costs for Equipment and Materials (Including Installation Costs and Excluding Leased Equipment)	Quantity Deployed	Unit Cost, $	Actual (A) or Estimated (E)	Expected Service Life, Years	Comments and Qualifiers
l	Upgrade of existing fixed-site weigh station infrastructure (excluding items listed above) for electronic screening (specify function):					
m	One-time start-up fees paid to electronic screening provider or partnership (for example, PrePass, Norpass)					
n	Consumable supplies and materials for outreach, internal and external publicity, training, or supporting the deployment of electronic screening					
o	Other central office or branch office network hardware and peripherals purchased for electronic screening (specify function):					

20	One-Time (Start-Up) Purchase Costs for Software	Quantity Deployed	Unit Cost, $	Actual (A) or Estimated (E)	Expected Service Life, Years	Comments and Qualifiers
a	Electronic screening software purchased off the shelf					
b	Other software for electronic screening start-up (specify function)					

21	One-Time (Start-Up) Costs for Labor	Quantity Deployed	Unit Cost, $	Actual (A) or Estimated (E)	Comments and Qualifiers
a	State employee labor for electronic screening software development				
b	State employee labor for new hardware configuration (after original installation)				
c	Contractor labor for electronic screening software development				
d	Contractor labor for new hardware configuration (after original installation)				
e	Third-party vendor labor for software development				
f	Third-party vendor labor for hardware configuration				
g	Labor for existing (legacy) system interface and/or modification (state employee labor + contractor or vendor labor)				
h	Labor for training associated with system deployment				
i	Other start-up labor costs (specify function):				

22	Recurring (Annual) Costs, Operating and Maintaining Electronic Screening System (Excluding Labor)	Total Annual Cost to State, $	Actual (A) or Estimated (E)	Comments and Qualifiers
a	Lease payments for computer equipment for electronic screening			
b	Annual payments made to electronic screening administrator/vendor/ partnership (for example, PrePass, Norpass)			
c	Annual maintenance cost for mainline WIM scale			
d	Annual maintenance cost for sorter-lane WIM scale			
e	Annual maintenance cost for other roadside equipment (AVI, transponder readers, etc.)			
f	Recurring costs for marketing, outreach, publicity, etc.			
g	Other recurring (annual) costs for operation and maintenance, excluding labor (specify function):			

23	Recurring (Annual) Costs for Labor (Provide Hours and/or $)	Total Labor, Hours	Total Labor Cost, $	Actual (A) or Estimated (E)	Comments and Qualifiers
a	State employee annual labor				
b	Contractor annual labor				
c	Third-party vendor annual labor				
d	Other recurring (annual) electronic screening cost elements not listed above (specify function):				

Use the space provided below to add to, clarify, or expand on your answers, especially with information about aspects of your state's deployment that were not covered in the questions. Please send completed templates and supporting information to Vince Brown by December 19, 2003. Be sure to keep a copy of your completed template for your records.

CVISN Benefits and Lessons Learned Self-Evaluation Template

U.S. Department of Transportation, Federal Motor Carrier Safety Administration

Version: October 17, 2003

When completed and sent to the U.S. DOT, this template will become part of your state's CVISN Self-Evaluation Report, as required in the ITS partnership agreement between the state and the federal government.

Send completed templates to: Vince Brown by December 19, 2003. Be sure to keep a copy of your completed template for your records. You are welcome to attach additional pages with clarifications and supporting information. If you attach additional pages, please indicate the template item number to which your information is related. If you are completing the form by hand, please print.

Information About Respondents	
1	Name of person primarily responsible for completing the form:
2	Telephone number of person completing the form:
3	Agency, department, and division of person completing the form:
4	Names of other persons providing supporting information on the form:
5	Date when the form was completed (mm/dd/yyyy):

I. Benefits of CVISN Deployment

Item	Question or Topic
6	Does your state use CVISN electronic credentialing for **IRP?** ☐ No (go to Question 7) ☐ Yes (Continue) a. How has electronic credentialing affected the convenience, typical turnaround time, or processing time for **IRP** credentialing transactions, from the motor carrier's point of view, compared with using the legacy system of credentialing? b. What feedback have you observed from the IRP-credentialed motor carriers you serve?
7	Does your state use CVISN electronic credentialing for **IFTA?** ☐ No (go to Question 9) ☐ Yes (Continue) a. How has electronic credentialing affected the convenience, typical turnaround time, or processing time for **IFTA** credentialing transactions, from the motor carrier's point of view, compared with using the legacy system of credentialing? b. What feedback have you observed from the IFTA-credentialed motor carriers you serve?
8	How has CVISN electronic credentialing affected the internal operation of your state's credentials administration office, compared with using the legacy system of credentialing?
9	Does your state use CVISN safety information exchange to support your state's roadside inspection program? ☐ No (go to Question 10) ☐ Yes (Continue) What benefits have you observed, as reported to you by system managers, inspectors, other state employees, or motor carriers? Try to quantify the benefits as much as possible, in terms of labor hours, inspection volume or perceived efficiency, changes in maintenance trends observed for truck brakes, and/or changes in the percentage of out-of-service orders issued during a typical inspection period. Also consider less tangible benefits such as better working conditions, job satisfaction, or career opportunities.

Item	Question or Topic
10	Does your state use CVISN electronic screening (preclearance)? ☐ No (go to Question 11) ☐ Yes (Continue) What benefits have you observed, as reported to you by system managers, inspectors, other state employees, or motor carriers? Try to quantify the benefits as much as possible.
11	Has CVISN freed state employees to perform other functions? ☐ No (go to Question 12) ☐ Yes (Continue) If so, specify what the other functions are and how this change has affected the staff involved.

II. Institutional Issues

Item	Question or Topic
12	How did the degree of cooperation or coordination among various state agencies affect your state's initial deployment of CVISN technologies and infrastructure?
13	How did the availability, support, and quality of vendors, consultants, or contractors and/or subcontractors affect your state's initial deployment of CVISN?
14	Describe any issues or problems that arose related to questions of jurisdiction, as they affected your state's initial CVISN deployment. For example, did some CVISN functions bridge two or more existing state agencies, requiring new or unexpected forms of coordination?
15	Briefly describe your state's approach to balancing data privacy with data availability, as these competing interests affected your state's CVISN deployment, both initially and as part of your state's ongoing use of CVISN technologies.
16	How has CVISN deployment affected your state's general approach to maintaining a high level of data quality (reliability, accuracy, and timeliness)?

17	What institutional barriers did you encounter (and overcome, if applicable) in planning for and deploying CVISN technologies and infrastructure? For example, did you encounter any barriers caused by existing regulations, state policies, or established work rules?
18	How did your deployment fit in with any institutional barriers you encountered?
19	Conversely, how did your state's CVISN deployment bring about changes to the established institutions in your state?
20	What were the personnel or human resources constraints or issues (for example, shortage of trained, available staff) that most affected your state's deployment of CVISN?
21	Describe any other institutional issues you observed that would be of interest or value for other states considering a CVISN deployment.

III. Technical Challenges

Item	Question or Topic
22	What were the most challenging technical issues in deploying CVISN for electronic credentialing (IRP, IFTA, other permits and credentials) in your state?
23	What were the most challenging technical issues in deploying CVISN for safety information exchange in your state?
24	What were the most challenging technical issues in deploying CVISN for electronic screening (clearance or weigh station bypassing) in your state?
25	What technical challenges did you observe in integrating the various functions of CVISN across all of your state's commercial vehicle operations (CVO)?

26	Overall, would you characterize hardware or software as the greater challenge in CVISN deployment? ☐ Hardware ☐ Software Why?
27	Considering all of the technical challenges faced by your state in deploying CVISN, which tools or approaches tended to work the best in overcoming them?

IV. Innovative Financing

Item	Question or Topic
28	It is assumed that CVISN infrastructure deployment is financed primarily through a combination of (a) state transportation, law enforcement, and regulatory and/or public safety funds and (b) federal (DOT, FHWA or FMCSA) earmark funds. Describe any unusual or innovative approaches to paying for your state's CVISN infrastructure deployment beyond these funding sources.
29	If your state employed innovative financing methods, describe your method of learning about these funds, applying for them, and administering their expenditure.
30	If your state employed innovative financing methods, describe any special terms and conditions or strings attached that affected your state's deployment of CVISN technologies and infrastructure.
31	What interagency issues did you encounter relative to funding for CVISN? For example, did your state use any pooled funds or funds from combined sources outside the CVO area, or did your state piggyback the CVISN deployment by leveraging other, non-CVO funding sources?

V. Public-Private Partnering

Item	Question or Topic
32	How did the degree of cooperation or coordination between your state and the motor carriers or trucking associations affect your state's initial deployment of CVISN technologies and infrastructure?
33	Describe the role of the private sector (for-profit industries; businesses; independent foundations; or private, not-for-profit agencies, etc.) in collaborating on your state's CVISN deployment. Did the private sector provide direct funding or in-kind contributions to the deployment (for example, labor or materials and facilities) that helped the state's deployment of CVISN technologies?
34	What were the challenges and lessons learned in cooperating with private-sector partners in your state's deployment?

VI. ITS Standards and Architecture

Item	Question or Topic
35	Describe your state's approach to implementing ITS standards and achieving consistency with the national ITS architecture. For example, how did the standards help or hinder your state's CVISN deployment?
36	Did implementing the standards or maintaining consistency with the ITS architecture present any challenges or barriers to your state's deployment?
37	What methods of overcoming these challenges would you recommend for states beginning their CVISN deployments?

VII. Other Benefits or Lessons Learned

Item	Description of Benefit or Lesson
38	What are the most important lessons your state has learned in planning for and/or deploying CVISN technologies for **electronic credentialing?**
39	What are the most important lessons your state has learned in planning for and/or deploying CVISN technologies for **safety information exchange?**
40	What are the most important lessons your state has learned in planning for and/or deploying CVISN technologies for **electronic screening?**
41	What are the most important lessons your state has learned in planning for, deploying, and/or integrating CVISN technologies across all CVO functions?
42	Looking back, what are the most important steps you would have taken (or avoided taking) if you had known at the beginning what you know now about deploying CVISN technologies?
43	What was the greatest surprise your deployment team encountered in deploying or using CVISN technologies?
44	Briefly describe your best-case scenario for CVISN deployment. If all barriers were to disappear and the system were to be widely adopted and operated as efficiently as possible, what are the most important benefits you would expect your state and the country as a whole to experience?
45	What benefit or lesson learned, not covered in any previous question, do you think of as important for other states to know as they plan and make progress in CVISN deployment?

Use the space provided below to add to, clarify, or expand on your answers, especially with information about aspects of your state's deployment that were not covered in the questions. Please send completed templates and supporting information to Vince Brown by December 19, 2003. Be sure to keep a copy of your completed template for your records.

APPENDIX H.
SELECTED CVISN SELF-EVALUATION DEPLOYMENT DATA (March 2008)

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APPENDIX H.
TABULATION OF SELECTED 2008
SELF-EVALUATION DEPLOYMENT DATA

Data in this appendix are presented verbatim, as submitted and modified by CVISN state Program Managers and their teams at any time from late 2003 to March 2008 on the password-protected CVISN data collection and reporting web interface. Any corrections, additions, or clarifying calculations made in the course of preparing this summary tabulation are indicated by footnotes.

States whose entire records for a particular question are blank, missing, or zero have been removed from the tabulations. Depending on which jurisdictions elected to answer which questions, therefore, the numbers of states responding may vary from table to table.

A total of 41 states have some self-evaluation deployment data in the database. The following 10 jurisdictions had no information in the self-evaluation deployment database as of March 2008, and are not represented in these tabulations:

District of Columbia	Hawaii	Iowa
Louisiana	Mississippi	Nevada
New Hampshire	North Carolina	Pennsylvania
Vermont		

For selected tables, simple totals and other descriptive statistics were prepared. Statistics were performed in Microsoft Excel, using formulae such as AVERAGE, MEDIAN, and STDEV. For variables in which a large proportion of respondents reported values of 0, such that the median value of the range was 0, no descriptive statistics were prepared.

The original deployment questions numbered 1 through 5 concern respondents, affiliations, contact information, and details on other persons or departments who contributed to the completion of the template, so those questions are being omitted from this appendix. The original question numbers and the verbatim wording of each question are presented below the boldface table captions with the prefix “QD,” meaning “Question-Deployment.”

The original deployment template, along with the accompanying cost and benefits/lessons learned templates and the instructions provided to the states for completing the self-evaluation reports, are presented in Appendix G.

Electronic Credentialing

Table H-1. IRP Credentialing Volume: Carriers and Vehicles (CVISN and non-CVISN)

QD-6. Approximately how many commercial motor carrier accounts and commercial vehicles (power units) now have IRP credentials in your state? Number of IRP Carrier Accounts (rounded to nearest hundred); Number of IRP Commercial Vehicles (rounded to nearest hundred)

STATE	IRP Carrier Accounts	IRP Vehicles
AL	7,300	37,100
AR	3,600	11,000
AZ	2,100	150,000
CA	14,600	97,260
CO	2,543	10,233
CT	2,400	12,000
FL	12,100	32,900
ID	2,800	14,500
IL	16,000	165,800
IN	9,600	110,000
KS	3,200	20,000
KY	5,025	17,700
MA	4,800	20,500
MD	7,221	28,763
ME	2,800	8,300
MI	7,500	55,200
MN	6,800	35,000
MO	6,878	48,606
MT	1,500	17,800
ND	2,100	9,000
NE	4,000	38,200
NJ	14,000	60,000
NM	2,300	9,800
NY	9,100	39,000
OH	15,000	78,000
OK	11,609	179,000
OR	5,500	4,800
SC	6,354	20,353
SD	2,500	9,300
TN	8,100	71,200
TX	18,000	103,700
UT	3,100	28,700
VA	7,400	41,000
WA	2,500	26,000
WI	5,100	48,000
WV	3,300	12,500
WY	1,100	14,800
AVG	**6,482**	**45,568**
MED	**5,100**	**28,763**
STDEV	**4,576**	**45,286**

Table H-2. IRP Credentialing Volume: Annual Transactions and Vehicles Credentialed

QD-7. An IRP credentialing transaction is defined as the process of obtaining new registrations, renewals, or supplemental credentials for one or more vehicles. Approximately how many of each of the various types of credentialing transactions were processed in the past 12 months (or the latest reporting year) in your state, including CVISN, electronic, walk-in, paper-based, or legacy system transactions? Show both the total number of IRP transactions and the total number of IRP credentialed vehicles.

	Number of IRP Transactions/Yr			Number of IRP Vehicles Credentialed/Yr		
STATE	**New**	**Renewal**	**Supplemental**	**New**	**Renewal**	**Supplemental**
AL	1,430	5,874	8,939	3,264	13,430	20,405
AR	1,500	2,100				
AZ		0	2,400		0	150,000
CA	3,777	14,600	9,000	11,000	71,000	15,300
CO	538	5,380	2,240	852	18,603	6,670
CT	200	1,200	2,200	500	11,000	2,000
FL	3,596	8,525	4,925	5,637	27,287	8,607
ID	200	2,600	4,000	400	14,000	6,000
IL	3,000	14,000	29,000			
IN	2,000	9,000	24,000	4,000	110,000	8,000
KS	400	2,900	5,000	3,200	20,000	10,000
KY	1,084	3,941	1,742	1,100	15,200	1,400
MD	1,326	7,235	6,599		28,300	
ME	322	2,234	1,800			
MI	1,460	6,281	8,256	0	55,189	15,210
MN	1,000	5,700	13,000	1,100	26,900	7,000
MO	1,232	28,641	17,336	3,516	76,296	0
MT	0	0	0	3,721	14,063	4,733
ND	150	2,100	5,214	200	9,000	8,000
NE	438	3,656	4,112	2,406	32,830	11,500
NJ	2,000	9,700	1,100	9,200	44,000	5,000
NM	326	2,022	3,654	489	9,276	3,222
NY	1,651	7,437	6,796	3,607	34,393	9,066
OH	0	16,500	11,300	0	73,100	26,000
OK	673	6,281	17,540	0	0	0
OR	990	5,578	5,440	1,252	30,443	10,266
SC	700	4,416	0	1,091	20,353	0
SD	260	2,200	3,000	291	7,284	1,718
TN	2,011	6,107	13,000	0	0	71,281
TX	10,362	28,383	44,723	12,774	169,751	51,321
UT	637	2,927	0	28,717	0	0
VA	11,293	28,000	2,294		40,970	
WA	0	0	8,138	0	0	0
WI	451	4,531	11,421			
WY	0	0	2,600	0	0	0
AVG	**1,618**	**7,144**	**8,258**	**3,511**	**31,376**	**15,610**
MED	**845**	**5,380**	**5,107**	**1,100**	**20,000**	**7,000**
STDEV	**2,536**	**7,709**	**9,349**	**5,990**	**36,980**	**30,192**

Table H-3. Present and Future Percentages of IRP Credential Steps Completed Electronically

QD-8. Considering every credentialing transaction as having four main steps, complete the table below to show the estimated **percentage** of each step or part of your state's IRP transactions that now are or soon will be completed using **CVISN electronic technology**. Include all types of credentialing transactions—new, renewal, and supplemental—in your estimated percentages. Percent = (Number of CVISN IRP transactions / total number of IRP transactions) * 100

	Carrier Transmits IRP App. to State (%)			State Processes IRP Application (%)		
STATE	**Now**	**In 6 Mo.**	**In 12 Mo.**	**Now**	**In 6 Mo.**	**In 12 Mo.**
AL	5	10	20	5	10	20
AZ	20	30	40	0	0	0
CO	53	55	56	53	55	56
CT	3	5	10	3	5	10
ID	0	5	10	100	100	100
IL	22	25	50	0	0	0
IN	5	25	50	5	25	50
KS	34	34	34	34	34	34
KY	10	15	20	0	0	0
MD	0	2	5	50	50	50
ME	15	15	20	15	15	20
MI	0	20	40	0	20	40
MN	0	0	5	0	0	5
MO	38	40	45	100	100	100
MT	0	10	10	100	100	100
ND	0	0	70	0	0	70
NE	33	40	50	0	0	7
NJ	5	10	10	5	10	10
NM	10	12	15	10	12	15
NY	1	2	10	1	2	10
OH	0	0	10	100	100	90
OK	45	45	45	0	0	0
OR	3	3	4	3	3	4
SC	0	0	5	0	0	5
SD	0	0	10	0	0	10
TN	100	100	100	88	76	50
TX	41	43	45	0	0	0
VA	6	7	10	6	7	10
WA	10	10	10	10	10	10
WI	10	25	25	10	25	25
WV	0	0	10	0	0	10
AVG	**15**	**19**	**27**	**23**	**24**	**29**
MED	**5**	**10**	**20**	**5**	**10**	**10**
STDEV	**22**	**22**	**23**	**36**	**35**	**33**

Table H-3. Present and Future Percentages of IRP Credential Steps Completed Electronically (Continued)

QD-8. Continued

STATE	Carrier Pays IRP Fee to State (%)			State Issues IRP Credential (%)		
	Now	In 6 Mo.	In 12 Mo.	Now	In 6 Mo.	In 12 Mo.
AL	5	10	20	5	10	20
CO	53	55	56	53	55	56
CT	0	1	5	0	0	0
FL	0	0	20	0	0	0
ID	0	0	0	100	100	100
IL	100	0	0	100	100	50
IN	5	25	50	5	25	50
KS	12	12	12	18	18	18
KY	0	0	15	10	15	20
MD	0	0	0	0	2	5
MI	0	20	40	0	20	40
MN	0	0	5	0	0	5
MO	25	30	40	100	100	100
MT	10	10	10	100	100	100
ND	0	0	70	0	0	70
NE	0	0	7	0	0	0
NJ	5	10	10	5	10	10
NM	0	12	15	0	0	15
NY	1	2	10	1	2	10
OH	0	0	0	0	0	90
OR	3	3	4	3	3	4
SC	0	0	5	0	0	5
SD	0	0	10	0	0	10
TN	100	100	100	100	100	100
TX	24	26	28	24	26	28
VA	6	7	10	6	7	10
WA	10	0	10	10	10	10
WI	0	0	25	10	25	25
WV	0	0	10	0	0	10
AVG	**N/A**	**11**	**20**	**22**	**25**	**33**
MED	**N/A**	**1**	**10**	**5**	**10**	**18**
STDEV	**N/A**	**21**	**24**	**38**	**37**	**35**

N/A = not applicable, because median = 0.

Table H-4. Present and Future Percentage of IRP Carrier Accounts Applying Electronically

QD-9. Consider the percentage of commercial motor carrier accounts in your state that apply for IRP credentials electronically. Complete the table below to show the approximate percent of motor carrier accounts using CVISN for IRP applications now and those expected to be applying for such credentials using CVISN in the near future.

STATE	Percent of IRP Carrier Accounts Applying Electronically		
	Now	In 6 Mo.	In 12 Mo.
AL	5	10	20
AZ	15	15	25
CO	53	55	56
CT	0	1	2
ID	0	5	10
IL	5	5	15
IN	42	50	75
KS	18	18	18
KY	10	15	20
MD	0	2	5
ME	10	10	12
MI	0	20	40
MN	0	0	10
MO	45	50	55
MT	0	10	10
ND	0	0	70
NE	15	15	15
NJ	5	10	10
NM	10	12	15
NY	5	8	20
OK	7	7	7
OR	4	4	5
SC	0	0	5
SD	0	0	10
TN	12	24	50
TX	43	45	47
VA	9	10	12
WA	10	10	10
WI	9	25	25
WV	0	0	2
WY	0	1	2
AVG	**11**	**14**	**22**
MED	**5**	**10**	**15**
STDEV	**15**	**16**	**21**

Table H-5. Ownership and Operating Arrangements for CVISN IRP Credentialing Systems

QD-10. Consider a credentialing system as having two parts: a "front-end" user interface or data entry part and a "back-end" database management and data processing or reporting part. Use check marks in the table below to indicate who owns and who operates each of the various parts of your state's electronic credentialing system for processing IRP credentials. If the ownership or operation is a joint effort, briefly describe the arrangement in the space below (QD-11).

	"Front-End" IRP User Interface and Data Entry			
STATE	**State Owned**	**Vendor Owned**	**State Operate/Maintain**	**Vendor Operate/Maintain**
AL				X
AR			X	
AZ		X	X	
CA	X		X	
CO	X		X	
CT		X		X
FL	X		X	
GA	X		X	
ID		X	X	
IL	X		X	
IN	X		X	
KS	X			X
KY	X			
MA	X		X	
MD	X		X	
ME		X		X
MI			X	
MN		X		X
MO	X	X		
MT		X		
ND			X	
NE	X		X	
NJ	X		X	
NM		X		X
NY	X		X	
OH		X		
OK	X		X	
OR	X			
SC	X		X	
SD				X
TN		X		
TX	X	X		
UT	X		X	
VA	X			
WA		X		X
WI		X		X
WV		X		X
WY		X		X
TOTAL	**20**	**15**	**19**	**11**

Table H-5. Ownership and Operating Arrangements for CVISN IRP Credentialing Systems (Continued)

QD-10. (Continued)

STATE	"Back-End" IRP Database Management and Data Processing			
	State Owned	Vendor Owned	State Operate/Maintain	Vendor Operate/Maintain
AL				X
AR				X
AZ		X		X
CA	X		X	
CO	X		X	
CT		X		X
FL	X		X	
GA	X		X	
ID		X		X
IL	X		X	
IN	X		X	
KS	X		X	
KY	X			
MA	X			X
MD	X		X	
ME		X	X	
MI			X	
MN		X	X	X
MO	X	X		
MT		X		
ND			X	
NE	X		X	
NJ		X		X
NM		X		X
NY	X		X	
OH		X		
OK	X		X	
OR	X			
SC		X	X	X
SD	X			
TN		X		
TX	X			X
UT	X		X	
VA		X		
WA		X		X
WI	X		X	
WV		X		X
WY		X		X
TOTAL	**19**	**16**	**18**	**14**

Table H-6. Additional Comments on Ownership/Operation of CVISN IRP Credentialing Systems

QD-11. Comments on special ownership or other types of operation/maintenance arrangements for your state's IRP credentialing system (if applicable).

STATE	Additional IRP Ownership Comments
AL	Alabama servers are hosted by Sunguard in Phoenix AZ under a contract with Archon Tech. and maintained by Archon. Maintenance & enhancements for IRP & IFTA is done by a Archon's sub, Celtic.
CT	Carriers using the web-based IRP system log in through the Connecticut CVO Portal, which transfers them to the ACS system.
ID	N/A
KS	Interface is operated and maintained by accesskansas, the database is operated and maintained by the Kansas Department of Revenue.
MD	State developed back-end application and data base to replace third party vendor service at a savings of $233,000 annually and elimination of staff overtime during peak renewal periods.
MI	Currently, the software is owned/maintained by vendor. The data, server/server maintenance is owned by state. CVISN will be a combo of both.
MN	RFP has been released for a vendor-supplied web credentialing interface with a back-end legacy software system for IRP transactions.
MO	The IRP module is a commercial off the shelf (COTS) program. The COTS program is maintained by the vendor. The program is integrated into other modules owned by the state.
MT	System is operated by state; maintenance is provided by the vendor. Montana owns the IRP data.
ND	Our Web based application is currently in development so figures are estimates.
NJ	CACI leases to state but state owns code OPC has payment end (Official Payment Corp.)
NY	New York's electronic credentialing system was created and maintained primarily by state employees. However, we did work closely with our IRP system provider (CACI) in developing the system. CACI did make modifications to the IRP system to enable the electronic credentialing and does provide maintenance support for those areas of the IRP system that work in conjunction with the credentialing system.
SC	R.L. Polk is the vendor, SC will be using COVERSnet module for IRP e-credentialing.
TN	ACS provides these services under contract.
TX	The IRP software package is owned by the vendor and licensed by the state. The state owns all servers and other hardware. The hardware is maintained by the vendor except for backups and network connectivity.
UT	Utah pays an annual license fee to R.L. Polk.
WA	System is owned and maintained under contract by ACS
WI	WisDOT in-house system used to issue plates.

Table H-7. Third-Party Vendors Used for IRP Credentialing

QD-12. Which third-party vendor (if any) does your state use for any aspect of IRP credentialing?

Vendors for IRP	Numbers of States [States]
ACS/VISTA/MVS Express	10 [AZ, CT, ID, MN, MT, NM, OH, TN, WA, WV]
ACS/VISTA/RS	1 [VA]
Polk/COVERS/COVERSnet	8 [AR, ME, MI, SC, SD, UT, WI, WY]
CACI International Inc.	3 [MO, NJ, NY]
Celtic Systems	1 [AL]
Explore Information Services	1 [TX]
*	1 [OK]

* Oklahoma will contract with a local vendor to modify the Maryland IRP system for Oklahoma use. The resulting system will be a state-owned and state-maintained system.

Table H-8. Present and Future Methods for Electronic Payment of IRP Credentialing Fees

QD-13. If carriers in your state now can (or soon will be able to) pay fees and costs related to IRP credentials electronically, use check marks in the table below to show the methods that they can use now and in the near future.

Payment Method	Numbers of States [States] Where IRP Carriers Can Use This Method:		
	Now	In 6 Months	In 12 Months
Credit card	17 [AL, CO, GA, IL, IN, KS, KY, ME, MO, ND, NJ, NY, OR, SD, VA, WV, WY]	9 [AR, AZ, IN, KS, ME, NJ, NM, NY, WY]	12 [AR, FL, IN, KS, MD, ME, MT, NJ, NY, SC, WI, WY]
Debit card	4 [AL, MO, ND, OR]	0	4 [FL, MT, NM, WI]
Automatic clearinghouse (ACH) credit	5 [CO, ID, MN, MO, VA]	3 [IN, OR, MN]	9 [IL, IN, MN, MO, MT, ND, NE, SD, WV]
ACH debit	9 [AL, CO, ID, IL, KS, MO, OH, TX, VA]	6 [AR, CT, KS, KY, OH, OR]	13 [AR, CT, FL, KS, MI, MO, MT, ND, NE, OH, WI, WV, WY]
Other Automatic withdrawal or account sweep service	0	0	2 [MI, WV]
Other electronic payment method (please specify) Billing to an MCTD account e-check vitalcheck Wire transfer	 1 [OR] 2 [IN, MO] 1 [ME] 1 [WY]	 1 [IN] 1 [ME]	 3 [FL, IN, SD] 1 [ME] 1 [WY]

Table H-9. Present and Future Methods for Electronic Issuance of IRP Credentials

QD-14. If your state now issues (or soon will be able to issue) official IRP credentials electronically, use check marks in the table below to show the issuing methods used now and in the near future.

Method of Issuance	Numbers of States [States] Where IRP Credentials are Issued Using This Method:		
	Now	**In 6 Months**	**In 12 Months**
E-mail messages	5 [IN, MD, MO, ND, OR]	2 [IN, MD]	4 [IL, IN, MD, WV]
Internet/HTML/Web-based	13 [CO, IN, KS, KY, ME, MO, NE, NY, OR, TX, VA, WA, WI]	8 [ID, IN, KS, MD, ME, MI, NE, NY]	17 [AL, IL, IN, KS, MD, ME, MI, MN, MT, ND, NE, NM, NY, OH, SC, SD, WV]
Facsimile/fax machine	20 [CA, ID, IN, KY, MD, ME, MI, MN, MO, MT, ND, NE, NJ, NY, OR, SD, TN, WA, WI, WY]	10 [IN, MD, ME, MI, MN, MT, NJ, NY, TN, WY]	10 [IL, IN, MD, ME, MI, MN, NJ, NY, TN, WY]
Other method of issuance (please specify) Self-issue temporary vehicle clearances for approved carriers	1 [ID]		
Telephonic, US mail and in-person applications	1 [MT]	1 [MT]	1 [MT]
Wire service for 8C product	1 [CA]		

Table H-10. IRP Clearinghouse Membership Status

QD-15. What is the schedule for your state to join the IRP Clearinghouse?

STATE	Already Participate	Within 6 Months	Within 12 Months	Within 1 to 2 Years	No Plans to Join
AK					X
AL	X				
AR	X				
AZ	X				
CA				X	
CO	X				
CT	X				
FL	X				
GA	X				
ID	X				
IL		X			
IN			X		
KS	X				
KY	X				
MA	X				
MD	X				
ME	X				
MI			X		
MN	X				
MO	X				
MT	X				
ND				X	
NE	X				
NJ	X				
NM	X				
NY	X				
OH	X				
OK				X	
OR	X				
SC				X	
SD	X				
TN	X				
TX	X				
UT	X				
VA	X				
WA	X				
WI	X				
WV	X				
WY			X		
TOTAL	**30**	**1**	**3**	**4**	**1**

Table H-11. Computer Connections for IRP Electronic Credentialing

QD-16. Which type of computer connections do carriers use to participate in your state's IRP electronic credentialing system?

Connection Type for IRP	Numbers of States [States]
Internet/HTML/Web-based system	24 [AL, AZ, CO, CT, ID, IL, IN, KS, KY, ME, MO, MT, NE, NJ, NM, NY, OH, OR, TN, TX, UT, VA, WA, WI]
Internet/HTML/Web-based system (MVS Express)	1 [MT]
Electronic bulletin board system	1 [OK]

Table H-12. Frequency of Uploading IRP Credentials Data to Central System for Roadside Safety or Credentials Checks

QD-17. About how often are your state's IRP credentialing data updated and transferred to CVIEW (or another centralized system) where the data can be accessed for roadside safety or credentials checks?

STATE	Hourly	Daily	2 to 6 Days	Weekly	2X/Month	Monthly	<Monthly[a]	Other[b]
AL		X						
AZ		X						
CO		X						
CT								X
FL								X
ID		X						
IL		X						
IN				X				
KY	X							
MD		X						
ME	X							
MN		X						
MO	X							
MT	X							
NE								X
NJ	X							
NM								X
NY								X
OH	X							
OK								X
OR				X				
SD		X						
TN		X						
TX								X
UT		X						
VA								X
WA		X						
WI								X
WY		X						
TOTAL	**6**	**12**	**0**	**2**	**0**	**0**	**0**	**9**

a. <Monthly means "Less often than once per month."
b. Specific responses for states saying "Other" are presented in the next table.

Table H-12. Frequency of Uploading IRP Credentials Data to Central System for Roadside Safety or Credentials Checks (Continued)

QD-17. (Continued)

STATE	Frequency of IRP Upload to Central System
CT	'Near-real' time – CVIEW updated within 5-10 minutes
FL	Real-time; 'Status of IRP registration is available real time through law enforcement inquiry. Authorized jurisdiction data is not available.
MO	Quarterly for some. Currently, Highway Patrol has direct access into mainframe systems housing compliance information.
NE	Real Time
NM	Daily
NY	on demand
OK	Oklahoma will issue an RFP for CVIEW implementation within the next 30 days. It is anticipated that IRP status updates will be transmitted to the CVIEW on a nightly (or more frequent) basis.
TX	Once CVIEW is available, will transfer at least daily/nightly.
VA	Currently use PrePass as data repository as temporary solution for CVIEW. PrePass data is updated quarterly.
WI	Immediate update is made when processing transaction is saved.

Table H-13. Frequency of Uploading IRP Credentials Data to Outside Organization for Electronic Screening

QD-18. If your state provides IRP credentialing data to an outside organization for electronic screening (for example, PrePass), about how often are the IRP credentialing data typically transferred to the electronic screening or clearance system?

STATE	Hourly	Daily	2 to 6 Days	Weekly	2X/Month	Monthly	<Monthly[a]	Other[b]
AL								X
AR								X
CA								X
CO						X		
FL								X
IL								X
IN						X		
KS								X
KY	X							
ME								X
MO								X
MT				X				
NE				X				
NM								X
OH								X
OK								X
OR	X							
SD								X
TN		X						
VA								X
WI								X
WV						X		
WY							X	
TOTAL	**2**	**1**	**0**	**2**	**0**	**3**	**1**	**14**

a. <Monthly means "Less often than once per month."
b. Specific responses for states saying "Other" are presented in the next table.

Table H-13. Frequency of Uploading IRP Credentials Data to Outside Organization for Electronic Screening (Continued)

QD-18. (Continued)

STATE	Frequency of IRP Upload to Outside Organization for E-Screening
AL	as requested
AR	Manual verifications quarterly
CA	DAILY AND RECONCILED Quarterly
FL	Quarterly (manual)
IL	Quarterly
KS	upon request
KY	We update our roadside screening data hourly.
ME	quarterly
MO	Quarterly
NE	Upon Request
NM	on demand
OK	Note that upon implementation of the Oklahoma CVIEW, the CVIEW will be updated nightly with IRP data. CVIEW will push that data nightly to SAFER, where it will be accessible to the PrePass central database.
SD	Every 6 months for PrePass - This is done manually
VA	PrePass
WI	Flat files are sent to PrePass every 3 months at their request. We are negotiating with PrePass to get direct updates from our CVIEW to their PreView, but no agreement has yet been reached.

Table H-14. IFTA Credentialing Volume: Carriers and Vehicles (CVISN and non-CVISN)

QD-19. Approximately how many commercial motor carrier accounts and commercial vehicles (power units) now have IFTA credentials in your state? Number of IFTA Carrier Accounts (rounded to nearest hundred); Number of IFTA Commercial Vehicles (rounded to nearest hundred)

STATE	IFTA Carrier Accounts	IFTA Vehicles
AL	4,700	37,100
AR	3,100	22,500
AZ	1,800	17,000
CA	12,100	60,000
CO	2,316	18,200
FL	7,300	
ID	3,100	22,100
IL	11,900	170,000
IN	6,000	90,000
KS	3,100	30,000
KY	4,000	45,000
MA	4,300	32,000
MD	6,200	51,000
ME	2,300	8,000
MI	5,800	55,200
MN	5,200	90,000
MO	7,147	92,200
MT	1,300	13,058
ND	2,343	11,893
NE	4,200	52,000
NJ	13,000	57,000
NM	1,800	5,000
NY	11,000	42,300
OH	11,200	148,000
OK	4,200	0
OR	4,200	39,000
RI	1,400	5,800
SC	6,000	0
SD	2,800	13,500
TN	4,600	80,000
TX	13,000	150,500
UT	2,400	33,600
VA	7,000	47,200
WA	3,000	0
WI	4,100	48,100
WV	2,750	15,500
WY	1,200	14,800
AVG	**5,185**	**44,932**
MED	**4,200**	**35,350**
STDEV	**3,481**	**42,786**

Table H-15. IFTA Credentialing Volume: Annual Transactions and Vehicles Credentialed

QD-20. An IFTA credentialing transaction is defined as the process of obtaining new registrations, renewals, or supplemental credentials for one or more vehicles. Approximately how many of each of the various types of credentialing transactions were processed in the past 12 months (or the latest reporting year) in your state, including CVISN, electronic, walk-in, paper-based, or legacy system transactions? Show both the total number of IFTA transactions and the total number of IFTA credentialed vehicles.

	Number of IFTA Transactions/Yr			Number of IFTA Vehicles Credentialed/Yr		
STATE	**New**	**Renewal**	**Supplemental**	**New**	**Renewal**	**Supplemental**
AL	958	3,816	2,310	5,008	19,996	12,094
AR	600	3,000	800	2,500	20,000	2,000
AZ	25	2,400	0	500	15,000	0
CA	1,200	12,300	1,400	60,000	0	0
CO	250	2,600	200	500	15,000	400
FL	2,736	9,303				
ID	84	2,600	70	22,100	0	0
IL	6,927	30,723		9,996	163,617	
IN	1,200	6,000	40,000	2,500	90,000	0
KS	500	3,100	900	4,000	25,000	1,000
MA	200	4,100	400	450	29,000	600
MD		5,200				
ME		2,300			8,000	
MI	1,460	6,281	8,256	0	55,189	15,210
MN	500	4,700	300	700	89,000	300
MO	1,137	6,010	28,354	0	0	0
MT	1,643	0	468	10,958	0	2,100
ND	180	2,100	500	300	10,300	600
NE	444	3,771	930	1,049	41,060	9,039
NJ	1,800	9,500	1,000	8,000	42,000	4,500
NM	180	1,800	1,000	90	5,000	500
NY	2,800	8,200	2,400	11,200	93,000	9,600
OH	1,900	11,000	0	0	132,450	0
OK	0	4,200	0	0	0	0
OR	756	4,038	1,448	1,311	41,482	2,015
SC	400	5,986	0	0	0	0
SD	3,000	0	0	13,500	0	0
TN	1,046	4,404	1,916	0	254,232	0
TX	3,000	12,800	1,920	15,600	134,900	13,490
VA				47,165		
WI		4,152				
WY	194	1,008	0	0	14,800	0
AVG	**1,254**	**5,722**	**3,637**	**7,765**	**46,394**	**2,825**
MED	**857**	**4,152**	**850**	**1,180**	**19,998**	**450**
STDEV	**1,455**	**5,697**	**9,286**	**14,295**	**61,733**	**4,737**

Table H-16. Present and Future Percentages of IFTA Credential Steps Completed Electronically

QD-21. Considering every credentialing transaction as having four main steps, complete the table below to show the estimated **percentage** of each step or part of your state's IFTA transactions that now are or soon will be completed using **CVISN electronic technology**. Include all types of credentialing transactions—new, renewal, and supplemental—in your estimated percentages. Percent = (Number of CVISN IFTA transactions / total number of IFTA transactions) * 100

	Carrier Transmits IFTA App. to State (%)			State Processes IFTA Application (%)		
STATE	**Now**	**In 6 Mo.**	**In 12 Mo.**	**Now**	**In 6 Mo.**	**In 12 Mo.**
AL	5	10	20	5	10	20
AR	0	0	40	0	0	40
AZ	1	20	40	0	0	0
CO	11	15	20	11	15	20
FL			20			20
ID	0	0	20	0	0	20
IN	10	10	50	10	10	50
KS	30	30	30	30	30	30
KY	6	10	15	0	0	0
MD	95	95	95	0	0	0
MI	0	20	40	0	20	40
MN	0	0	5	0	0	5
MO	25	30	40	100	100	100
MT	0	10	10	100	100	100
ND			80			80
NE	0	0	15	0	0	15
NJ	0	0	5	0	0	5
NM	10	12	15	10	12	15
NY	1	1	25	1	1	25
OH	0	1	60	0	1	60
OR	1	3	8	1	3	8
SC	0	0	5	0	0	5
SD	0	0	10	0	0	10
TN	100	100	100	89	80	75
TX	0	0	10	80	0	10
VA	6	7	10	6	7	10
WI	1	25	25	1	25	25
AVG	**12**	**16**	**30**	**18**	**17**	**29**
MED	**1**	**10**	**20**	**1**	**1**	**20**
STDEV	**27**	**26**	**27**	**34**	**30**	**30**

N/A = Not applicable.

Table H-16. Present and Future Percentages of IFTA Credential Steps Completed Electronically (Continued)

QD-21. Continued

STATE	Carrier Pays IFTA Fee to State (%)			State Issues IFTA Credential (%)		
	Now	In 6 Mo.	In 12 Mo.	Now	In 6 Mo.	In 12 Mo.
AL	5	10	20	5	10	20
AR	0	0	0	0	0	40
CO	11	15	20	11	15	20
FL			20			
ID	0	0	15	0	0	20
IN	10	10	50	0	0	50
KS	16	16	16	0	0	0
KY	6	10	15	0	0	0
MI	0	20	40	0	20	40
MN	0	0	5	0	0	5
MO	15	20	25	100	100	100
MT	10	10	10	100	100	100
ND			80			80
NE	0	0	15	0	0	15
NJ	0	0	5	0	0	5
NM	0	12	15	0	0	15
NY	1	1	25	1	1	25
OH	0	0	0	0	1	5
OR	1	3	8	1	3	8
SC	0	0	5	0	0	5
SD	0	0	10	0	0	10
TN	100	100	100	100	100	100
TX	0	0	0	0	0	10
VA	6	7	10	6	7	10
WI	0	0	25	1	25	25
AVG	**N/A**	**10**	**21**	**N/A**	**N/A**	**30**
MED	**N/A**	**3**	**15**	**N/A**	**N/A**	**18**
STDEV	**N/A**	**21**	**24**	**N/A**	**N/A**	**33**

N/A = Not applicable.

Table H-17. Present and Future Percentage of IFTA Carrier Accounts Applying Electronically

QD-22. Consider the percentage of commercial motor carrier accounts in your state that apply for IFTA credentials electronically. Complete the table below to show the approximate percent of motor carrier accounts using CVISN for IFTA applications now and those expected to be applying for such credentials using CVISN in the near future.

	Percent of IFTA Carrier Accounts Applying Electronically		
STATE	**Now**	**In 6 Mo.**	**In 12 Mo.**
AL	5	10	20
AR	0	0	40
AZ	2	15	25
CO	11	15	20
FL	0	0	20
ID	0	0	20
IN	1	1	1
KS	30	30	30
KY	6	10	15
MD	95	95	95
MI	0	20	40
MN	0	0	5
MO	0	0	5
MT	0	10	10
ND			80
NE	0	0	15
NJ	0	0	5
NM	10	12	15
NY	1	1	25
OH	0	1	10
OR	1	3	10
SC	0	0	5
SD	0	0	10
TN	11	15	25
TX	0	0	10
VA	20	22	25
WI	10	25	25
WY	0	1	2
AVG	**N/A**	**11**	**22**
MED	**N/A**	**1**	**18**
STDEV	**N/A**	**19**	**21**

N/A = Not applicable.

Table H-18. Ownership and Operating Arrangements for CVISN IFTA Credentialing Systems

QD-23. Consider a credentialing system as having two parts: a "front-end" user interface or data entry part and a "back-end" database management and data processing or reporting part. Use check marks in the table below to indicate who owns and who operates each of the various parts of your state's electronic credentialing system for processing IRP credentials. If the ownership or operation is a joint effort, briefly describe the arrangement in the space below (QD-24).

	"Front-End" IFTA User Interface and Data Entry			
STATE	**State Owned**	**Vendor Owned**	**State Operate/Maintain**	**Vendor Operate/Maintain**
AL				X
AZ	X		X	
CA	X		X	
CO	X		X	
CT	X			X
FL	X		X	
ID	X			X
IL	X		X	
IN		X		X
KS	X			X
KY	X	X		
MA	X			
MD	X		X	
ME	X		X	
MI			X	
MN	X	X	X	X
MO	X	X		
MT		X		
ND			X	
NE	X		X	
NJ	X		X	
NM		X		X
NY	X		X	
OH		X		X
OK	X		X	
OR	X		X	
RI	X		X	
SC	X		X	
SD				X
TN		X		
TX	X		X	
UT	X		X	
VA	X			
WA		X		X
WI		X		X
WV		X		X
WY		X		X
TOTAL	**24**	**12**	**19**	**13**

Table H-18. Ownership and Operating Arrangements for CVISN IFTA Credentialing Systems (Continued)

QD-23. (Continued)

STATE	"Back-End" IFTA Database Management and Data Processing			
	State Owned	Vendor Owned	State Operate/Maintain	Vendor Operate/Maintain
AL				X
AZ	X		X	
CA	X		X	
CO	X		X	
CT	X		X	
FL	X		X	
ID	X		X	
IL		X		X
IN		X		X
KS	X		X	
KY	X	X		
MA	X			
MD	X		X	
ME	X		X	
MI			X	
MN	X		X	
MO	X	X		
MT		X		
ND			X	
NE	X		X	
NJ	X		X	
NM		X		X
NY	X		X	
OH		X		X
OK	X		X	
OR	X		X	
RI		X		X
SC		X		X
SD	X			
TN		X		
TX	X		X	
UT	X		X	
VA		X		
WA		X		X
WI	X		X	
WV		X		X
WY		X		X
TOTAL	**22**	**14**	**20**	**10**

Table H-19. Additional Comments on Ownership/Operation of CVISN IFTA Credentialing Systems

QD-24. Comments on special ownership or other types of operation/maintenance arrangements for your state's IFTA credentialing system (if applicable).

STATE	Additional IFTA Ownership Comments
AL	Alabama servers are hosted by Sunguard in Phoenix AZ under a contract with Archon Tech. and maintained by Archon. Maintenance & enhancements for IRP & IFTA is done by a Archon's sub, Celtic. Contract currently being re-bid and Archon will not bid. Celtic is the expected vendor to provide service in the future.
AR	The Arkansas system will be developed over the next year and the decision as to who will own and who will manage the system will be made at this time.
CA	California is one of 14 jurisdictions that participates in the Regional Processing Center owned by the group and administered/maintained by the New York Department of Taxation and Finance in Albany, NY.
CT	Cambridge Systematics provides a web front end to the state system.
IL	The current vendor is R.L. Polk. Polk retains the rights to the system code.
KS	Interface is operated and maintained by accesskansas and the database is operated and maintained by the Kansas Department of Revenue.
KY	Kentucky uses our own state system for IFTA credentialing and we use the RPC for IFTA tax filing. Our electronic processes are currently only for IFTA tax filings. Credentialing is planned in the next 12 months.
MD	Maryland owns the licensing and registration system and uses the New York Regional Processing Center for receipt and processing of carrier's quarterly tax returns. Renewals are automatically processed by the State unless there is a problem with the account. Maryland does not charge a fee for the decals.
MI	Currently, the software is owned/maintained by vendor. The data, server/server maintenance is owned by state. CVISN will be a combo of both.
MN	RFP has been released for a vendor-supplied web credentialing interface with a back-end legacy software system for IFTA transactions.
MO	The IFTA module is a commercial off the shelf (COTS) program. The COTS program is maintained by the vendor. The program is integrated into other modules owned by the state.
MT	Data is owned by the State of Montana. System is operated by state; maintenance is done by vendor. Montana owns the data.
ND	Our Motor Carrier systems are currently being rewritten into a Web based application with an estimated completion date of 09/01/2004 if funding allows.
NY	New York State is the lead jurisdiction for the IFTA Regional Processing Center (RPC). The RPC is used by multiple jurisdictions to perform various aspects of IFTA processing.
OR	Designed, built, operated, maintained and supported by Oregon State employees
RI	Rhode Island is a member of the RPC operated by the NY State Department of Finance.
SD	Note for number of transactions, The numbers are totals for all transactions since we do not break the numbers down.
TN	ACS
TX	The NY Regional Processing Center receives a copy of our IFTA carriers profile census data on a daily basis. After Texas joins the IFTA Clearinghouse, the NY RPC will be responsible for updating the IFTA Clearinghouse.
UT	Utah pays an annual license fee to R.L. Polk Co.

Table H-20. Third-Party Vendors Used for IFTA Credentialing

QD-25. Which third-party vendor (if any) does your state use for any aspect of IFTA credentialing?

Vendors	Numbers of States [States]
ACS/VISTA/MVS Express	8 [AR, IN, MT, NM, OH, TN, WA, WV]
ACS/VISTA/TS	1 [VA]
Polk/COVERS/COVERSnet	7 [IL, MI, SC, SD, UT, WI, WY]
*	1 [NY]
**	1 [OK]
Access Idaho	1 [ID]
CACI International	1 [MO]
Celtic Systems	1 [AL]
New York Regional Processing Center	2 [MD, TX]

* In New York, a financial institution receives and does data capture and payment processing of IFTA returns.
** Oklahoma is contracting with a local vendor to develop a state-owned system.

Table H-21. Present and Future Methods for Electronic Payment of IFTA Credentialing Fees

QD-26. If carriers in your state now can (or soon will be able to) pay fees and costs related to IFTA credentials electronically, use check marks in the table below to show the methods that they can use now and in the near future.

Payment Method	Numbers of States [States] Where IFTA Carriers Can Use This Method:		
	Now	In 6 Months	In 12 Months
Credit card	11 [AL, ID, KY, ME, MO, ND, NY, OR, SD, VA, WY]	5 [AZ, ID, ME, NY, WY]	10 [FL, ID, IN, ME, MT, NJ, NY, SC, WI, WY]
Debit card	5 [AL, IN, MO, ND, OR]	1 [ID]	4 [FL, ID, MT, WI]
Automatic clearinghouse (ACH) credit	4 [ID, MN, MO, VA]	3 [ID, MN, OR]	6 [ID, MN, MT, ND, NE, SD]
ACH debit	5 [AL, ID, KS, KY, VA]	4 [AZ, ID, KS, OR]	10 [FL, ID, KS, MI, MO, MT, ND, NE, WI, WY]
Other Automatic withdrawal or account sweep service			
Other electronic payment method (please specify) Unspecified Electronic Check(ing) Wire transfer	 1 [MO]		 2 [IN, MI] 2 [SD, FL] 1 [WY]

Table H-22. Present and Future Methods for Electronic Issuance of IFTA Credentials

QD-27. If your state now issues (or soon will be able to issue) official IFTA credentials electronically, use check marks in the table below to show the issuing methods used now and in the near future.

Method of Issuance	Numbers of States [States] Where IFTA Credentials are Issued Using This Method:		
	Now	**In 6 Months**	**In 12 Months**
E-mail messages	5 [CO, ME, MO, ND, OR]	1 [ME]	2 [ME, TX]
Internet/HTML/Web-based	8 [AL, CO, KY, MO, NY, OR, VA, WI]	5 [KS, MI, NE, NY, OH]	13 [IN, KS, MI, MN, MT, ND, NJ, NM, NY, OH, SC, SD, TX]
Facsimile/fax machine	13 [CA, CO, KY, ME, MI, MN, MO, ND, OH, OR, SD, WI, WY]	5 [ME, MI, MN, OH, WY]	7 [ME, MI, MN, MT, NJ, OH, WY]
Other method of issuance (please specify)			
Mail	3 [AR, KS, WA]	2 [AR, KS]	2 [AR, KS]
Walk-in and telephone			1 [MT]

Table H-23. IFTA Clearinghouse Membership Status

QD-28. What is the schedule for your state to join the IFTA Clearinghouse?

STATE	Already Participate	Within 6 Months	Within 12 Months	Within 1 to 2 Years	No Plans to Join
AK					X
AL	X				
AR	X				
AZ	X				
CA	X				
CO	X				
CT	X				
FL		X			
GA					
ID	X				
IL	X				
IN			X		
KS	X				
KY	X				
MA	X				
MD	X				
ME	X				
MI			X		
MN		X			
MO	X				
MT	X				
ND				X	
NE		X			
NJ	X				
NM	X				
NY	X				
OH	X				
OK			X		
OR	X				
RI	X				
SC				X	
SD	X				
TN	X				
TX	X				
UT	X				
VA		X			
WA	X				
WI	X				
WV	X				
WY			X		
TOTAL	**28**	**4**	**4**	**2**	**1**

Table H-24. Computer Connections for IFTA Electronic Credentialing

QD-29. Which type of computer connections do carriers use to participate in your state's IFTA electronic credentialing system?

Connection Type	States
Internet/HTML/Web-based system	AL, AZ, CO, CT, ID*, KS, KY, MD, MN, MO, MT, MT**, NE, NM, NY, OR, TN, TX, UT, VA, WA, WI

* Idaho: Internet once implemented.
** Montana: MVS Express is an Internet/HTML/Web-based system.

Table H-25. Frequency of Uploading IFTA Credentials Data to Central System for Roadside Safety or Credentials Checks

QD-30. About how often are your state's IFTA credentialing data updated and transferred to CVIEW (or another centralized system) where the data can be accessed for roadside safety or credentials checks?

STATE	Hourly	Daily	2 to 6 Days	Weekly	2X/Month	Monthly	<Monthly[a]	Other[b]
AL		X						
AZ		X						
CO						X		
CT				X				
ID								X
IN						X		
KY	X							
MD								X
ME				X				
MO	X							
MT	X							
NE								X
NJ		X						
NM								X
NY								X
OK								X
OR				X				
SD		X						
TN		X						
UT		X						
VA								X
WA		X						
WI								X
WY		X						
TOTAL	**3**	**8**	**0**	**3**	**0**	**2**	**0**	**8**

a. <Monthly means "Less often than once per month."
b. Specific responses for states saying "Other" are presented in the next table.

Table H-25. Frequency of Uploading IFTA Credentials Data to Central System for Roadside Safety or Credentials Checks (Continued)

QD-30. (Continued)

STATE	Frequency of Upload to Central System
ID	Daily once implemented; anticipated by mid-summer 2004
MD	Daily when registration suspended.
NE	Real Time
NM	daily
NY	on demand
OK	Note that Oklahoma is in the process of issuing an RFP for CVIEW implementation. Upon implementation of CVIEW, the IFTA system will transmit IFTA status updates to the CVIEW nightly (or more frequently).
VA	PrePass
WI	Immediate update is made when the processing transaction is saved.

Table H-26. Frequency of Uploading IFTA Credentials Data to Outside Organization for Electronic Screening

QD-31. If your state provides IFTA credentialing data to an outside organization for electronic screening (for example, PrePass), about how often are the IFTA credentialing data typically transferred to the electronic screening or clearance system?

STATE	Hourly	Daily	2 to 6 Days	Weekly	2X/Month	Monthly	<Monthly[a]	Other[b]
AL								X
CA						X		
CO						X		
FL								X
GA								
IL			X					
IN								X
KS								X
KY	X							
MO								X
MT				X				
NE				X				
OH								X
OK								X
OR				X				
SD		X						
TN		X						
VA								X
WI								X
WV						X		
WY							X	
TOTAL	**1**	**2**	**1**	**3**	**0**	**3**	**1**	**9**

a. <Monthly means "Less often than once per month."
b. Specific responses for states saying "Other" are presented in the next table.

Table H-26. Frequency of Uploading IFTA Credentials Data to Outside Organization for Electronic Screening (Continued)

QD-31. (Continued)

STATE	Frequency of Upload to Outside Organization for E-Screening
AL	quarterly
CA	Quarterly
FL	Quarterly (manual)
IN	quarterly
KS	upon request
MO	Quarterly
NE	Upon Request
NM	on demand
OH	Quarterly
OK	Note that upon implementation of the Oklahoma CVIEW, the CVIEW will be updated nightly with IFTA data. The CVIEW, will push that data nightly to SAFER, where it will be accessible to the PrePass central database.
VA	PrePass
WI	Flat files are sent to PrePass every 3 months at their request. We are negotiating with PrePass to get direct updates from our CVIEW to their PreView, but no agreement has yet been reached.

Table H-27. Credentials Other Than IRP and IFTA

QD-32. If your state issues any other kinds of permits or credentials besides IRP and IFTA, complete the table below to indicate approximately how many applications were received for each kind of credential using CVISN technology in the past 12 months (or the latest reporting year) in the first column. Then indicate in the second column how many were received by all methods combined (walk-in + paper forms + legacy system + CVISN, etc.).

Type of Permit or Credential	State	Number of Applications Received per Year	
		Using CVISN	Using All Methods (CVISN + Non-CVISN)
Single state registration system	AR	0	2,815
	CA	0	5,000
	CO	0	1,832
	CT	0	520
	ID	0	1,200
	IL	0	76,378
	IN	0	4,500
	KS	3,500	10,000
	ME	0	4,000
	MN	0	33,755
	MO	0	3,253
	MT	0	1,500
	ND	0	4,000
	NE	0	3,500
	NY	50	0
	OH	0	5,264
	OK	0	2,926
	SD	1,900	3,100
	TN	0	2,155
	TX	0	7,000
	VA	0	5,100
	WI	0	3,918
Single trip (motor carrier, use fuel, permit)	AL	311	335
	AR	0	129,867
	AZ	0	159,000
	CA	0	1,000
	CO	0	13,291
	ID	1,221	34,329
	IN	0	3,000
	MD	0	6,400
	ME	0	1,047
	MN	0	3,000
	MT	0	11,400
	ND	0	3,000
	NJ	0	5,200
	NM	0	290,000
	OK	0	10,468
	OR	4,901	0
	SD	4,259	22,508
	TN	0	11,000
	TX	0	258,409
	UT	0	44,127
	WI	0	10,738
	WY	0	45,122
Registration (30-, 60-, 90-day)	AK	0	5,013
	AZ	0	9,800
	CA	0	262,200
	CO	0	434
	IN	3,800	4,000

Type of Permit or Credential	State	Number of Applications Received per Year	
		Using CVISN	Using All Methods (CVISN + Non-CVISN)
	MN	0	15,000
	ND	0	3,200
	NE	0	100
	SD	3,164	39,317
	TN	0	6,922
	TX	0	9,959
Envelope permits	AR	0	12
	AZ	0	850
	ID	6,680	45,576
	KS	0	1,200
	MT	0	9,400
	OK	0	1,638
	SD	7,930	75,027
	TX	0	2,348
	UT	0	100
Oversize/overweight	AK	0	21,099
	AZ	0	82,500
	CA	0	158,400
	CO	0	42,800
	CT	112,000	112,000
	ID	0	17,431
	IN	0	250,000
	KS	9,400	41,800
	KY	51,450	73,500
	MD	0	127,713
	ME	1,000	36,000
	MN	0	74,406
	MO	0	136,992
	MT	0	33,100
	ND	0	8,300
	NE	0	24,550
	NJ	0	120,000
	NM	0	71,000
	OK	0	188,000
	OR	3,197	124,583
	SD	7,097	22,515
	TN	0	104,081
	TX	0	417,010
	UT	0	5,733
	WI	8,079	55,577
	WY	0	99,865
Hazardous materials	CA	0	780
	CO	0	2,216
	ID	15,000	70,000
	MD	0	3,771
	MN	0	2,048
	NM	0	1,383
	OH	0	2,339
	OK	0	42
	WY	0	381
Weight/distance	NM	0	48,000
	OR	102,517	490,464
Highway use tax	AZ	0	2,100
	CA	0	239,000

Type of Permit or Credential	State	Number of Applications Received per Year	
		Using CVISN	Using All Methods (CVISN + Non-CVISN)
	ND	0	9,000
	NJ	0	13,000
	OR	14,922	277,449
Others (please specify):			
10 Day Temporary Pass	OR	8,928	193,569
Authoriz. to operate or change authorization	OK	0	8,993
Block Passes	OR	9,504	9,504
Commercial Vehicle Inspection Decals	MN	0	11,647
Driver Waivers (Vision, Physical, Insulin-Diabetic)	MN	0	314
DSTPs	OK	0	278
Dual Intra/Interstate Carriers	TN	0	409
Exempt Carriers	TN	0	764
Exempt Interstate Bingo Stamp	IL	0	7,334
Hazardous Waste	MO	0	787
Hazardous Waste Transport Permits	AR	0	22
IFTA Single Trip Permit	IL	0	5,500
Industrial Permit	CT	0	192
Insurance filings	OK	0	12,691
Interstate Exempt	MO	0	532
Interstate Exempt (D-1 Bingo Stamp)	MN	0	2,202
Interstate Exempt Carriers	CO	0	285
Interstate exempt certificates	OK	0	201
In-Transit Permit	UT	0	154
Intrastate Authority	AR	0	86
Intrastate Carriers	CO	0	1,197
Intrastate For Hire Registration	OH	0	8,269
Intrastate Proof of Insurance	TN	0	741
IRP Hunter	AZ	0	28
IRP Single Trip Permit	IL	0	12,000
Kansas temporary fuel	KS	1,900	9,000
Kansas temporary registration	KS	1,700	8,100
KYU Weight Distance Tax Filings	KY	15,000	120,000
Motor carrier authority	WI	0	1,376
Motor Carrier of Passengers (including Limousine and Special Transportation Service)	MN	0	3,202
Motor Carrier of Property (including Household Goods Movers and Building House Movers)	MN	0	1,624
Motor Carrier Permit	CA	0	15,000
NY State Highway Use Tax	NY	12,000	140,000
Out of State Trailer Electronic Temp Registr. Permit	AK	3,500	0
Radioactive Permit	CT	1,010	1,010
Safety and Security Verification (like SSRS)	UT	0	5,877
USDOT# to intrastate carriers	OK	0	396
Watercraft	AZ	0	45

Safety Information Exchange

Table H-28. Weigh Scale Sites (Fixed-Site and "Plug-and-Run)

QD-33. How many permanent, fixed weigh scale sites (with a scale house or other permanent structure and with a static scale installed in the ground) does your state operate? Consider each site on a divided directional lane separately. For example, if your state has separate northbound and southbound weigh stations near the same milepost, count them as two sites.
QD-34. How many of these permanent weigh scale sites (with a scale house structure) are also used now for vehicle safety inspections and/or credential or compliance checks?
QD-35. How many so-called "plug-and-run" weigh scale sites does your state operate now?
QD-36. How many of these plug-and-run sites are also used now for vehicle safety inspections and/or credential or compliance checks?

STATE	Number of Permanent, Fixed-Site Scales	Number of Permanent Sites Used for Inspections	Number of "Plug-and-Run Scale Sites	Number of "Plug-and-Run Sites Used for Inspections
AK	8	8	0	0
AL	1	1	0	0
AR	12	12	0	0
AZ	22	22	0	0
CA	54	54	58	58
CO	16	16	0	0
CT	5	5	0	0
FL	29	16	0	0
GA	21	21	7	7
ID	19	19	0	0
IL	30	30	0	0
IN	10	10	0	0
KS	9	9	0	0
KY	14	14	0	0
MA	0	0	8	8
MD	12	12	0	0
MI	15	15	0	0
MN	7	7	0	0
MO	19	19	0	0
MT	30	30	0	0
ND	11	5	0	0
NE	13	13	0	0
NJ	3	3	0	0
NM	11	11	0	0
OH	19	19	0	0
OK	9	11	1	1
OR	55	55	28	28
SC	9	9	0	0
SD	13	13	0	0
TN	9	9	0	0
TX	49	49	260	260
UT	9	9	1	1
VA	23	23	0	
WA	52	52	5	5
WI	13	13	0	0
WV	7	7	4	4
WY	29	15	0	0
AVG	**18**	**17**	**N/A**	**N/A**
MED	**13**	**13**	**N/A**	**N/A**
STDEV	**14**	**14**	**N/A**	**N/A**

N/A = Not applicable.

Table H-29. Numbers of Vehicles Weighed and Numbers of Ports-of-Entry

QD-37. In the past 12 months (or the latest reporting year), approximately how many commercial vehicles were weighed at your state's permanent weigh scale sites (where a scale is installed in the ground), counting all types of permanent weigh scale sites combined, including those with a scale house and those that are plug-and-run sites?

QD-38. How many of your state's permanent weigh scale sites (where a scale is installed in the ground) are also international or interstate ports-of-entry?

STATE	Number of CVs Weighed/Year at Permanent Scale Sites	Number of Permanent Scale Sites[a]	Avg. No. of Weighings per Site[b]	No. of Internatl. Ports-of-Entry	No. of Interstate Ports-of-Entry
AK	80,717	8	10,090	1	0
AL	161,000	1	161,000	0	1
AR		12	N/A	0	6
AZ	4,200,000	22	190,909	6	6
CA	15,090,363	54	279,451	4	5
CO	4,754,963	16	297,185	0	12
CT		5	N/A	0	3
FL	4,785,220	29	165,008	0	0
GA	9,755,375	21	464,542	0	8
ID	1,860,180	19	97,904	1	16
IN	1,323,182	10	132,318	0	1
KS	1,385,959	9	153,995	0	6
KY	99,401	14	7,100	0	0
MD	1,591,300	12	132,608	0	0
MI	158,918	15	10,595	2	3
MN	354,376	7	50,625	0	0
MO	6,528,861	19	343,624	0	0
MT	482,157	30	16,072	3	11
ND	593,789	11	53,981	0	2
NE	625,878	13	48,144	0	0
NJ	5,700	3	1,900	0	2
NM	1,178,500	11	107,136	2	11
OH	6,662,025	19	350,633	0	3
OK	1,700,000	9	188,889	0	4
OR	2,524,000	55	45,891	0	6
SC	3,259,562	9	362,174	0	3
SD	426,138	13	32,780	0	4
TN	11,014,538	9	1,223,838	0	1
TX	339,963	49	6,938	0	0
UT	5,455,637	9	606,182	0	5
VA	20,000,000	23	869,565	0	
WA	6,922,473	52	133,124	1	3
WI	1,352,819	13	104,063	0	0
WY	2,298,337	15	153,222	0	16
AVG	**3,655,354**	**18**	**200,044**	**N/A**	**4**
MED	**1,645,650**	**13**	**132,463**	**N/A**	**3**
STDEV	**4,697,268**	**14**	**263,077**	**N/A**	**5**

a. From QD-33 above, including both CVISN and non-CVISN permanent weigh scale sites, for only those states responding to QD-37 or QD-38.
b. Annual average number of weighings per permanent site = annual number of weighings/number of permanent sites reported in the state.
N/A = Complete data not available.

Table H-30. Portable Scale Systems and Inspection-Only Sites Operated

QD-39. Approximately how many mobile or portable scale systems (meant to be moved from place to place and used on top of the pavement surface) does your state operate now?

QD-40. In the past 12 months (or the latest reporting year), approximately how many commercial vehicles were weighed using state-owned mobile or portable scales in your state?

QD-41. How many permanent roadside inspection-only sites (without a static weigh scale installed in the ground) does your state operate now?

STATE	Number of Portable Scale Systems	Numbers of CVs Weighed/Year Using Portable Scales	Number of Permanent, Inspection-Only Sites
AK	46	2,659	0
AL	14	29,000	0
AZ	15	7,000	12
CA	150	441	0
CO	10	42,250	550
CT	15		6
FL	222	26,662	4
GA	68	176,286	0
ID	169	19,280	282
IL	210	57,354	0
IN	66	3,880	0
KS	34	6,926	2
KY	600	16,500	0
MA	5	39,708	0
MD	31	5,727	6
MI	235	5,235	3
MN	35	15,308	0
MO	26	2,574	0
MT	15	5,869	77
ND	168	855	12
NE	17	28,250	0
NJ	154	34,800	0
NM	22	27,000	0
NY	75		200
OH	10	5,218	0
OK	39	10,241	120
OR	25	18,800	6
SC	3	3,142	0
SD	60	5,932	22
TN	90	897	0
TX	1,675	51,944	260
UT	45	3,901	0
VA	400	9	
WA	500	46,000	0
WI	167	1,100	3
WY	21	984	0
AVG	**151**	**20,639**	**N/A**
MED	**46**	**6,963**	**N/A**
STDEV	**296**	**32,097**	**N/A**

N/A = Not applicable.

Table H-31. Total Annual CV Inspections, Inspectors, and Use of Laptop Computers

QD-42. In the past 12 months (or the latest reporting year), how many commercial vehicles were inspected (for example, Level I, II, or III) by your state's personnel or at your state's weigh and/or inspection facilities, counting all permanent, plug-and-run, mobile, and inspection-only sites combined?

QD-43. How many full-time equivalent (FTE) officers and/or inspectors does your state employ in a typical year to perform commercial vehicle safety inspections?

QD-44. What percent of your state's officers/inspectors involved in CVO or enforcement now use laptop computers equipped with Aspen or equivalent, or are expected to start using laptops soon, to support the inspection process?

Percent = (Number with laptop computers / total number of officers or inspectors) * 100

STATE	Number of CVs Inspected at All Sites	Numbers of FTEs Employed as Inspectors	Percent of CV Inspectors Using a Laptop Computer to Support Inspection Process		
			Now	In 6 Mo.	In 12 Mo.
AK	9,933	31	100		
AL	190,000	40	100	100	100
AR	62,917		100		
AZ	2,500	52	100	100	100
CA	528,968	1,012	59	59	100
CO	31,356	50	100		
CT	18,000	21	100	100	100
FL	66,202	416	100	0	0
GA	95,000	75	42	42	42
ID	8,434	21	100	100	100
IL	16,323	1,126	10		
IN	58,600	95	67	70	70
KS	45,000	400	40	40	40
KY	89,250	200	40	75	100
MA	19,749	30	100	100	100
MD	105,753	221	95	95	95
MI	53,950	185	100	100	100
MN	43,329	110	100	0	0
MO	79,285	215	100	0	0
MT	35,000	98	100	100	100
ND	14,566	25	95	0	0
NE	23,428	12	100	0	0
NJ	40,500	106	100	100	100
NM	60,000	185	93	100	100
NY	91,028	150	100	100	100
OH	81,948	144	100	100	100
OK	16,053	20	100	100	100
OR	59,510	438	75		
SC	13,194	112	100	100	100
SD	26,564	71	100	100	100
TN	112,360	175	57	60	100
TX	187,567	700	100	100	100
UT	36,000	45	100	100	100
WA	115,000	200	60	80	95
WI	40,144	117	100	100	100
WY	20,304	10	20	20	20
AVG	**69,381**	**197**	**85**	**72**	**76**
MED	**44,165**	**110**	**100**	**100**	**100**
STDEV	**90,878**	**263**	**26**	**39**	**39**

Table H-32. Role of CVISN in Making Inspection Decisions

QD-45. Is CVISN technology used at any of your state's permanent weigh scale sites to aid the inspection selection process (for example, Aspen with Inspection Selection System, ISS, or connection to SAFER)? [Yes or No]

QD-46. Which of the following scenarios best describes how the inspector's professional judgment, experience, or discretion is typically combined with CVISN computer-based information systems for commercial vehicle inspections in your state? (Check all that apply)

- Inspector obtains numeric ISS ratings after inspector decides which vehicles to inspect
- Inspector obtains numeric ISS ratings before inspector decides which vehicles to inspect
- Computerized decision or selection algorithm queries a database and then, in real time, selects which vehicle to inspect and at what level (inspector has little or no discretion)
- Other method of using CVISN technology in inspection selection

STATE	Is CVISN Used at Any Sites?	How is Inspector Judgment, Experience, or Discretion Combined with CVISN?			
		Inspector Gets ISS Score After Deciding to Inspect	Inspector Gets ISS Score Before Deciding to Inspect	Computerized Method (Little or No Inspector Discretion)	Other Method of Using CVISN*
AK	Y	X	X	X	
AL	N				
AR	Y	X	X		
AZ	Y	X			
CA	N				
CO	Y	X	X		
CT	Y	X	X	X	X
FL	Y				X
GA	Y	X			
ID	Y		X		
IL	N				
IN	Y	X			
KS	Y		X		X
KY	Y	X			X
MA	Y	X			
MD	Y	X	X		
MI	N				
MN	Y		X		
MO	Y	X			
MT	Y		X		X
ND	Y	X	X		
NE	Y	X			
NJ	Y	X	X	X	
NM	Y	X	X		
NY	Y	X			
OH	Y		X		
OK	Y	X	X		
OR	Y		X		X
SC	Y		X		
SD	Y	X	X		
TN	Y		X		
TX	Y	X			
UT	Y	X	X	X	
VA	Y	X			
WA	Y	X	X		X
WI	Y			X	
WY	Y	X	X		
TOTAL	**Y=33 N=4**	**23**	**21**	**5**	**7**

* Specific responses for states saying "Other" are presented in the next table.

Table H-33. Role of CVISN in Making Inspection Decisions (continued)

QD-45. (continued)

STATE	Additional Inspection Decision Comments
CT	Varies depending on inspection site and type of operation
FL	The officer uses ISS and SAFER as a screening tool. They may use it to decide what vehicle to inspect, or they may choose a vehicle and then utilize the ISS or SAFER.
IL	ASPEN is used to collect inspection data by the 80+ MCSAP officers.
KS	PrePass
KY	Have PRISM targeted vehicle file available and we target carriers in the PRISM MCSIP (Motor Carrier Safety Improvement Program) program for inspection.
MT	Use of PreView (CVIEW) by weigh station officers; officer enters a plate number and state of registration; PreView queries the safety information such as SAFETSTAT, ISS2 Score, for all interstate carriers listed in SAFER.
NM	Note that when NM's CVIEW is deployed, officers at fixed scales will key in a plate number and immediately be able to manually query the CVIEW by keying in a plate number as a non-transpondered truck is crossing the fixed scale. The CVIEW will present a screen showing whether the vehicle / carrier is "good to go" re: credential and safety status or, where something falls outside of acceptable bounds, will display the "failed" item, enabling the officer to pull the vehicle from the queue for further inspection (might be inspection of paper documents to verify credential status or safety inspection of driver or vehicle).
OK	Note that when CVIEW is fully deployed, officers at fixed scales and officers with appropriate communications in their mobile units (all DPS MCSAP officers have satellite communications) will be able to enter a DOT or plate number and view a "pass / fail screen", which shows whether carrier / vehicle is "good to go" re: IRP, IFTA, SSRS and other credential status and carrier safety status; parameters outside acceptable range will be highlighted so that officer has ability to pull out of queue at weigh station / roadside for further inspection, with some idea of nature of potential problem
OR	22 Green Light weigh station preclearance sites use ISS2 data to perform a safety sort when inspection personnel is on site.
TX	OASIS System
WA	Transpondered vehicles with conditional or unsatisfactory safety ratings are brought into the scale and subject to inspection

Table H-34. Permanent Weigh/Inspection Sites Connected to CVIEW (or Equivalent)

QD-46. How many of your state's permanent weigh/inspection sites (where a scale is installed in the ground) are connected now to CVIEW (or equivalent) for carrier or vehicle electronic data "snapshots" (or equivalent)? How many new sites are expected to be connected soon for snapshots? Consider each site on a divided directional lane (for example, eastbound and westbound) separately.

STATE	Number of Sites Connected to CVIEW				Number of Permanent Sites[b]	Percent of Perm. Sites Connected[c]
	Now	In 6 Mo.	In 12 Mo.	Max. Value[a]		
AK	0	2	0	2	8	25
AL	0	0	1	1	1	100
AR	0	0	12	12	12	100
AZ	7	7	7	7	22	32
CO	17			17	16	100[d]
CT	1		1	1	5	20
ID	18	18	18	18	19	95
KY	14	0	0	14	14	100
MD	12	12	12	12	12	100
MN	1	0	0	1	7	14
MT	28	28	28	28	30	93
NE	0	13	0	13	13	100
NJ	0	0	1	1	3	33
NM	0	0	11	11	11	100
OH	0	0	19	19	19	100
OK	0	0	11	11	9	100[d]
OR	55			55	55	100
SC	3	0	0	3	9	33
SD	0	4	4	4	13	31
TN	9	0	10	10	9	100[d]
TX	0	0	2	2	49	4
UT	9	9	9	9	9	100
WA	7	8	10	10	52	19
WI	0	13	13	13	13	100
WY	0	0	14	14	29	48
AVG	**7**	**N/A**	**8**	**12**	**18**	**72**
MED	**1**	**N/A**	**9**	**11**	**13**	**100**
STDEV	**12**	**N/A**	**8**	**11**	**15**	**39**

a. Maximum value from each state's current, 6-month, and 12-month reports.
b. From QD-33 above, including both CVISN and non-CVISN permanent weigh scale sites.
c. Percent = (Max. Value/Permanent Sites)*100.
d. State reported more CVISN sites within next 12 months than permanent sites currently open. Percent was corrected to read 100.
N/A = Not applicable.

Table H-35. Method of Transferring Carrier Safety Data to Roadside Computers

QD-47. Does your state download or copy database files or full carrier safety profiles from a central system for use on roadside computers, or does it query the central system remotely from the roadside only as needed?

Method of Data Transfer	Numbers of States [States]
Downloads full database files for use on roadside computer	14 [CO, GA, ID, IL, IN, KS, MD, NM, OR, SC, SD, VA, WA, WY]
Queries a central database from remote roadside computer as needed	10 [AZ, CA, CT, FL, MA, MN, MT, NE, TN, TX]
Combination of download and query; methods vary within the state	7 [AK, KY, MI, NJ, NY, OH, UT]
Not applicable	6 [AL, AR, MO, ND, OK, WI]

Table H-36. Frequency of Updating Roadside Computers with Data from Central System

QD-48. How often does your state usually update the carrier safety and credential information from a central system for use on computers at roadside weigh/inspection locations?

STATE	Hourly	Daily	2 to 6 Days	Weekly	2X/Month	Monthly	<Monthly[a]	Other[b]
AK		X						
AZ		X						
CA								X
CO		X						
CT								X
FL								X
GA						X		
ID		X						
IL								X
IN							X	
KS								X
KY	X							
MA							X	
MD				X				
MI								X
MO								X
MT		X						
NE		X						
NJ						X		
NM								X
NY							X	
OH								X
OR							X	
SC						X		
SD		X						
TN		X						
TX							X	
UT		X						
VA								X
WA								X
WI								X
WY		X						
TOTAL	**1**	**10**	**0**	**1**	**0**	**3**	**5**	**12**

a. <Monthly means "Less often than once per month."
b. Specific responses for states saying "Other" are presented in the next table.

Table H-37. Additional Comments on Frequency of Updating Roadside Computers with Data from Central System (continued)

QD-48. Comments on frequency of updating roadside computers (if applicable).

STATE	Additional Comments
CA	CCVIS 2000 real-time
CT	Update in real time when credential information changes
FL	Quarterly
IL	Quarterly
KS	Semi-Annual Minimum, prefer Quarterly
MI	2-3 times per year
MO	quarterly
NE	ISS Quarterly
NM	Nightly
OH	Varies by Agency
OR	quarterly
VA	3 month intervals
WA	1/2 hour
WI	As changes are processed

Table H-38. Numbers of Wireless Laptop Computers Configured for CVISN Access

QD-49. How many of your state's laptop computers supporting commercial vehicle safety inspections are configured (or will be configured soon—including existing and new laptops) for wireless data transfer with a central database management system (for example, SAFER or CVIEW)?

	Number of Laptops Configured for Wireless Access to Central Data			
STATE	Now	In 6 Mo.	In 12 Mo.	Max. Value[a]
AK	2	0	0	2
AR	0	185	185	185
CA	4	4	4	4
CO	5	0	0	5
CT	77	77	77	77
FL	235	235	240	240
ID	21	21	21	21
KS	35	35	35	35
KY	40	75	100	100
MA	100	100	100	100
MD	73	73	73	73
MI	2	10		10
MN	120	0	0	120
MO	0	0	8	8
MT	0	1	1	1
NJ	150	150	150	150
NM	7	0	0	7
NY	210	210	210	210
OH	34	34	34	34
OK	20	20	20	20
SC	112	0	0	112
SD	0	0	28	28
UT	45	45	45	45
WA	60	90	120	120
AVG	**56**	**57**	**63**	**71**
MED	**35**	**28**	**34**	**40**
STDEV	**67**	**72**	**73**	**71**

a. Maximum value from each state's current, 6-month, and 12-month reports.

Table H-39. Type of Wireless Systems or Protocols

QD-50. What kinds of wireless systems or protocols does your state use or plan to use?

STATE	Analog Cellular	Digital Cellular	Satellite Communication	Other System (Please Specify)
AK		X		
AL		X		
AR		X		
AZ				Unknown at this time
CA		X		
CO		X		
CT		X		
FL		X		
GA				Testing Digital Wireless Applications
ID		X		ITD is still in process of determining wireless protocol but ISP has process in place
IL	X	X		
KS	X			800MHZ Radio System
KY	X	X	X	
MA		X		
MD	X	X		
MI		X		
MN		X	X	
MO			X	
MT			X	
NJ		X		
NM		X	X	
OH	X	X		800 MHZ
OK		X	X	
SC		X		Air wireless card with cellular technology software
SD				Digital Radio Frequency
TN				800 MHZ
UT		X		
WA		X		
WV	X			
TOTAL	**6**	**21**	**6**	

Electronic Screening

Table H-40. Current and Future Electronic Screening Offerings and Programs/Partnerships

QD-51. Does your state now offer CVISN electronic screening to enable safe, registered, enrolled vehicles to bypass one or more open weigh stations, or does your state expect to offer electronic screening in the near future?

- Now offers electronic screening
- Expects to offer electronic screening within 6 months
- Expects to offer electronic screening within 12 months
- Does not now offer and does not plan to offer electronic screening (go to Question 60)

QD-52. In which electronic screening program or partnership does your state participate or expect to participate?

- HELP/PrePass
- Norpass
- Self-administered
- Not applicable
- Other (please describe your program or partnership)

STATE	Now	Within 6 Mo.	Within 12 Mo.	Does Not Plan or Offer	Program or Partnership[a]
AK		X			Norpass
AL	X				HELP/PrePass
AR	X				HELP/PrePass
AZ	X				HELP/PrePass
CA	X				HELP/PrePass
CO	X				HELP/PrePass
CT	X				Norpass
DE			X		HELP/PrePass
FL	X				HELP/PrePass
GA	X				Norpass
ID	X				Norpass
IL	X				HELP/PrePass
IN	X				HELP/PrePass
KS	X				HELP/PrePass
KY	X				Norpass
MD	X				Other
MI				X	N/A
MN			X		Norpass
MO	X				HELP/PrePass
MT	X				HELP/PrePass
ND				X	N/A
NE	X				HELP/PrePass
NJ			X		Other
NM	X				HELP/PrePass
OK	X				HELP/PrePass
OR	X				Self-Administered
SC			X		HELP/PrePass
SD	X				Norpass
TN	X				HELP/PrePass
TX			X		Other
UT	X				HELP/PrePass
VA	X				HELP/PrePass
WA	X				Norpass
WI	X				HELP/PrePass
WV	X				HELP/PrePass
WY	X				HELP/PrePass
TOTAL	**28**	**1**	**5**	**2**	

a. Specific responses for states saying "Other," and a numerical summary of program participation are presented in the next two tables.
N/A = Not applicable.

Table H-40. Current and Future Electronic Screening Offerings and Programs/Partnerships (continued)

QD-52. (Continued)

STATE	Other E-Screening Program or Partnership Information
DE	Also considering Norpass.
NJ	Have not decided
OR	Oregon Green Light
TX	Program not selected currently
MD	Self administered and work with Norpass to cross enroll carriers and vehicles.

Table H-41. Numerical Distribution of E-Screening Program or Partnership Participation

[Note: This table shows a different view of the data presented above. It does not represent a separate question on the original Deployment Template.]

Screening Program or Partnership	Numbers of States	Percent of States Reporting
HELP/PrePass	22	61
Norpass	8	22
Self-Administered	1	3
Not Applicable	2	6
Other	3	8
TOTAL	**36**	**100.0**

Table H-42. Numbers of Permanent Sites Offering Electronic Screening

QD-53. At how many permanent weigh sites (where a static scale is installed in the ground) does your state now offer (or plan to offer) electronic screening? (The 6- and 12-month estimates should include the sum of both existing and new sites.)

STATE	Number of Permanent Sites with E-Screening				Number of Permanent Sites[b]	Percent of Perm. Sites Screening[c]
	Now	In 6 Mo.	In 12 Mo.	Max. Value[a]		
AK	0	1	0	1	8	13
AL	1	1	1	1	1	100
AR	8	8	8	8	12	67
AZ	7	7	7	7	22	32
CA	35	35	35	35	54	65
CO	15	15	15	15	16	94
CT	1	1	2	2	5	40
DE	0	0	1	1		
FL	17	19	20	20	29	69
GA	11	14	14	17	21	81
ID	3	3	3	3	19	16
IL	20	20	20	20	30	67
IN	10	10	10	10	10	100
KS	6			6	9	67
KY	12	12	12	12	14	86
MD	1	1	2	2	12	17
MN	1	0	0	1	7	14
MO	19	19	19	19	19	100
MT	5	5	7	7	30	23
ND	35	0	0	35	11	100[d]
NE	4	0	0	4	13	31
NJ	0	0	1	1	3	33
NM	5	5	5	5	11	45
OK	7	7	7	7	9	78
OR	22			22	55	40
SC	0	0	2	2	9	22
SD	0	1	1	1	13	8
TN	9	0	10	10	9	100[d]
TX	0	0	3	3	49	6
UT	9	9	9	9	9	100
VA	8	14	14	14	23	61
WA	7	8	10	10	52	19
WI	2	2	3	3	13	23
WV	7	0	0	7	7	100
WY	3	3	4	4	29	14
AVG	**8**	**7**	**7**	**9**	**19**	**54**
MED	**7**	**3**	**5**	**7**	**13**	**53**
STDEV	**9**	**8**	**8**	**9**	**15**	**34**

a. Maximum value from each state's current, 6-month, and 12-month reports.
b. From QD-33 above, including both CVISN and non-CVISN permanent weigh scale sites.
c. Percent = (Max. Value/Permanent Sites)*100.
d. State reported more CVISN e-screening sites within next 12 months than permanent sites currently open. Percent was corrected to read 100.
N/A = Complete data not available.

Table H-43. Numbers of Remote Sites Offering Electronic Screening

QD-54. At how many other sites (remote from an existing permanent weigh or inspection site) does your state now use (or plan to use—including existing and new sites) electronic screening technologies?

STATE	Number of Other/Remote Sites with E-Screening		
	Now	In 6 Mo.	In 12 Mo.
AK	0	0	1
AL	0	0	0
AR	0	0	1
AZ	0	0	2
CA	0	0	0
CO	0	0	0
CT	0	0	4
DE	0	0	0
FL	6	0	7
GA	0	0	0
ID	0	0	1
IL	0	0	0
IN	3	5	10
KS	0	0	0
KY	0	0	0
MD	0	0	1
MN	0	0	1
MO	0	0	0
MT	0	0	0
ND	0	0	0
NE	0	0	0
NJ	0	0	0
NM	0	0	0
OK	0	0	0
OR	0	0	0
SC	0	0	0
SD	0	0	0
TN	0	0	0
TX	0	0	3
UT	0	0	0
VA		2	4
WA	0	0	0
WI	0	0	0
WV	0	0	0
WY	0	0	0

Table H-44. Numbers of Weigh-in-Motion Scale Devices Installed or Planned

QD-55. How many high-speed mainline weigh-in-motion (WIM) devices does your state have installed or plan to install (including existing and new devices)?

QD-56. How many reduced-speed ramp or sorter-lane weigh-in-motion (WIM) devices does your state have installed or plan to install (including existing and new ramps/devices)?

STATE	Number of High-Speed Weigh-in-Motion Scales			Number of Reduced-Speed Weigh-in-Motion Scales		
	Now	In 6 Mo.	In 12 Mo.	Now	In 6 Mo.	In 12 Mo.
AK	8		2	0	0	0
AL	14	14	14	1	1	1
AR	0	0	1	8	8	8
AZ	5	5	5	3	3	3
CA	136	0	1	8	0	1
CO	10	10	10	0	0	0
CT	1	0	1	2		
DE	0	0	1	0	0	1
FL	0	1	0	38		42
GA	0	0	0	19	19	19
ID	3	3	3	0	0	0
IL	20	20	20	17	0	0
IN	35	35	35	6	6	6
KS	2	2	2	0	0	0
KY	2	0	0	9	0	0
MD	1	1	2	2	4	4
MN	0	0	0	2	0	0
MO	19	19	19	4	4	4
MT	26	28	34	0	0	0
ND	5	8	0	0	0	0
NE	4	4	5	0	0	0
NJ	40	40	40	2	0	0
NM	1	1	5	2	0	0
OR	22			4		
SC	0	0	0	3	0	0
SD	12	12	14	0	1	1
TN	0	0	0	5	8	9
TX	0	0	0	2	2	3
UT	5	6	9	4	4	4
VA	8	14	14	6	6	6
WA	7	8	10	1	1	1
WI	2	2	3	2	2	3
WV	6	0	0	0	0	0
WY	0	0	1	3	3	3
TOTAL	**394**	**233**	**251**	**153**	**72**	**119**

Table H-45. Numbers of Electronic Screening Events, Green Lights, and Red Lights

QD-57. Counting each time an enrolled, transponder-equipped vehicle encountered an electronic screening site, in the past 12 months (or the latest reporting year), approximately how many:

- Commercial vehicle electronic screenings were performed by your state's system?
- Screened vehicles were given a green light transponder signal to bypass an open weigh or inspection station?
- Screened vehicles were given a red light transponder signal to enter a weigh or inspection station?

STATE	No. of E-Screenings	No. of Green Light Signals	No. of Red Light Signals	Reported Percent of Red Light Signals[a]
AL	249,000	204,000	45,000	18
AZ	1,300,000	1,000,000	336,000	26
CA	5,666,150	4,318,083	1,348,067	24
CO	1,576,145	1,444,077	130,095	8
FL	3,725,954	3,200,903	548,885	15
ID	62,633	56,939	5,694	9
IL	3,118,322	2,296,657	821,665	26
IN	800,000	725,000	75,000	9
KS	48,500	43,000	5,500	11
KY	728,000	640,640	87,360	12
MD	149,223	112,835	36,388	24
MO	2,915,211	2,287,772	627,439	22
MT	112,424	79,721	32,703	29
NE	931,737	321,575	75,321	8
NM	1,455,810	1,322,379	133,431	9
OK	403,818	357,026	46,792	12
OR	1,675,567	1,370,991	304,576	18
TN	243,190	225,456	17,734	7
WA	598,907	510,580	88,327	15
WI	143,047	111,635	31,412	22
WY	486,545	437,168	41,305	8
AVG	**1,256,675**	**1,003,164**	**230,414**	**16**
MED	**728,000**	**510,580**	**75,321**	**15**
STDEV	**1,468,452**	**1,156,040**	**342,730**	**7**

a. Percent = (number of red lights /number of e-screenings)*100.

Table H-46. Prevailing Random Pull-In Rate for E-Screening

QD-58. What is your state's prevailing random pull-in rate? That is, in approximately what percentage of electronic screening-site encounters would a safe, enrolled, transponder-equipped vehicle still be given a red light and requested to enter a weigh/inspection station? Percent = (Number of red lights / number of station encounters) * 100

- Random pull-in rate varies from time to time or from carrier to carrier (If rate varies, briefly describe your state's method of determining pull-in rate in the space provided below:)
- Averages 0 to 5 percent
- Averages 6 to 10 percent
- Averages 11 to 15 percent
- Averages greater than 15 percent
- Not applicable

STATE	Varies[a]	0 to 5 Percent	6 to 10 Percent	11 to 15 Percent	> 15 Percent	Not Applicable
AK						X
AL			X			
AZ		X				
CA		X				
CO			X			
CT		X				
DE	X					
FL			X			
ID		X				
IL		X				
IN			X			
KS			X			
KY	X					
MD			X			
MN						X
MO					X	
MT		X				
ND	X					
NE		X				
NJ						X
NM	X					
OK		X				
OR	X					
SC						X
SD		X				
TN		X				
TX						X
UT				X		
VA		X				
WA		X				
WI	X					
WY		X				
TOTAL	**6**	**13**	**6**	**1**	**1**	**5**

a. Information from states providing further description is in the next table.

Table H-46. Prevailing Random Pull-In Rate for E-Screening (Continued)

QD-58. Continued

STATE	Description of Method for Determining Pull-In Rate for E-Screening
CA	Varies between general and HAZMAT transportation
DE	At State's only existing weigh station (Blackbird, on Rte. 13) all trucks are required to pull in. After crossing sorter lane WIM, some get green light to bypass scale.
KY	Pull in rate is determined by several factors including safety rating, credential performance, etc.
ND	Every fourth truck during saturation periods.
NM	An automatic 5% is applied at all sites. New Mexico follows the PrePass random pull-in rate for carriers who have regressed in their safety rating (resulting in a higher pull-in rate for these carriers). MTD also changes the random pull-in rate for special operations, for example, pulling in 100% of transpondered vehicles during some shifts.
OK	5% random pull-in rate; actual pull-in rate averages 11.6%
OR	Safety pull-in is used when inspection personnel is on site. Can adjust each site. Random rate is adjustable. Safety pull-in includes three variables: ISS2 score, driver out-of-service rate, vehicle out-of-service rate.
SD	Not yet determined. We expect to make this decision before next spring when the new POE opens
WI	Rate depends on traffic volume and staffing levels.

Table H-47. Method of Purchasing and Distributing In-Vehicle Transponders

QD-59. How are in-vehicle transponders purchased and distributed to motor carriers and vehicles? (Check all that apply)

Method	Numbers of States [States]
Purchased and distributed by state government, without direct charge to the participating motor carrier	3 [ID, KY, OR]
Purchased by state government and distributed by a third party (outsourced)	0
Purchased and distributed by interstate program or partnership (for example, PrePass)	17 [AR, AZ, CA, CO, FL, GA, IN, KS, MT, NE, NM, OK, TN, UT, VA, WI, WY]
Purchased directly from vendor by motor carrier	4 [AL, CT, IL, MO]
Not applicable	7 [AK, DE, MN, ND, NJ, SC, TX]
Other (please specify)	See next table

Table H-47. Method of Purchasing and Distributing In-Vehicle Transponders (Continued)

QD-59. Continued

STATE	Other Method of Purchasing or Distributing Transponders
CA	Transponders provided by PrePass
CT	Connecticut will enroll compatible transponders from any system (Norpass, PrePass or Oregon Green Light).
KY	Cost to motor carrier is $45.00 per transponder
MD	Purchased by state and sold at cost to motor carrier.
SD	Purchase by State Government and Bill third party the cost of the transponder
WA	Purchased by State and sold to carrier

Table H-48. Standard Computer Language for CVISN Deployment

QD-60. Does your state use or plan to use the EDI (Electronic Data Interchange) or the XML (Extensible Markup Language) computer programming format or language as your state's standard for CVISN deployment? (Check all that apply)

- EDI
- XML
- Not applicable
- Other (please specify)

STATE	EDI	XML	N/A	Other
AK		X		
AL		X		
AR		X		
AZ		X		
CA	X			
CO				Flat file interface
CT		X		
DE		X		
FL	X	X		
ID		X		Custom flat file specifications and interfaces may also be used where appropriate
IL		X		
IN		X		
KS				
KY	X	X		
MD	X	X		
MI		X		
MN		X		
MO		X		
MT		X		AFF CIA
ND		X		
NE		X		
NJ		X		
NM		X		
NY		X		CICS Transaction Gateway, MQ Series
OH	X	X		
OK	X	X		
OR		X		
SC		X		
SD		X		
TN		X		
TX		X		
UT		X		
VA		X		
WA		X		
WI		X		
WV		X		
WY		X		
TOTAL	**6**	**34**	**0**	

N/A = Not applicable.

Table H-49. Funding Sources for Deploying and Operating CVISN Technologies

QD-61. Which of the following funding sources does your state use for deploying and operating CVISN technologies? (Check all that apply)

Funding Source	Numbers of States [States]
State general revenue funds budgeted for department of transportation/highways	18 [AK, AR, DE, FL, IL, IN, KS, KY, MN, NY, TN, TX, UT, VA, WA, WI, WV, WY]
State general revenue funds budgeted for law enforcement	15 [CT, DE, IN, KY, NE, NM, NY, OH, SC, TN, TX, UT, VA, WA, WY]
State general revenue funds budgeted for safety/public utilities	2 [AK, OH]
State dedicated funds (special taxes, registration fees, or permit fee surcharges) collected from users (that is, from motor carriers)	19 [CA, CO, FL, ID, IN, MD, MO, ND, NE, NJ, OH, OK, OR, SC, SD, UT, WA, WI, WV]
Federal grants	28 [AK, AL, AR, AZ, CA, CO, CT, DE, ID, IN, KS, KY, MD, MI, MN, MO, NJ, NM, NY, OH, OK, SD, TN, TX, UT, VA, WI, WV]
Federal matching funds or subsidies	19 [AK, CA, CT, DE, ID, IN, KS, KY, MD, MI, MO, ND, NE, NY, SC, TN, TX, UT, WV]
Up-front transponder fees charged to motor carriers	4 [AR, IN, MD, SD]
Per-bypass fees charged to motor carriers	1 [UT]
R&D or deployment funds from alternative sources (give examples)[a]	4 [KY, ND, SD, WY]
Private sources (give examples)[a]	5 [FL, NE, OK, UT, WI]
Local government (city, county, regional planning) sources (give examples)[a]	0
Not applicable	0
Other (please specify)[a]	5 [AL, FL, IL, MT, OK]

a. Information from states providing additional descriptions or examples is presented in the next table.

Table H-49. Funding Sources for Deploying and Operating CVISN Technologies (Continued)

QD-61. Continued

Funding Source	STATE	Example/Description
R&D or deployment funds from alternative sources	AZ	FMCSA CVISN Grant
	KY	Funding has come from various sources. Most has been CVISN 50/50 match with 50% Federal funding and 50% state match. Some has been from various other grants and funding avenues.
	SC	We hope in the future to be able to utilize this type of funds. (State dedicated Funds)
	SD	State Planning and Research Funds; NHTSA Funds
	WA	A $10.00 surcharge on permits was initiated and supported by the trucking community to offset costs of CVISN and congestion relief
	WY	Research Committee Funds development, MCSAP is used for safety application, such as CVIEW
Private sources	FL	HELP PrePass
	NE	Pre-Pass
	OK	Public / private partnership funds (PrePass) used to implement electronic screening
	UT	Pre-Pass
	WI	PrePass in-kind contributions to e-screening installations at scales. PrePass also collects a per-bypass fee to motor carriers.
Other	AL	General Fund for Revenue Department
	FL	General Revenue
	IL	Federal ITS Funds
	MT	Montana Department of Transportation Budget is authorized by the Montana Legislature.
	OK	Toll match used for CVISN matching funds; MCSAP funds used for satellite communications; CVISN deployment funding used for most other CVISN deployment projects

Table H-50. Additional Information to Clarify or Expand on Answers Already Given

QD-62. Use the space provided below to add to, clarify, or expand on your answers, especially with information about aspects of your state's deployment that were not covered in the questions.

STATE	Comment, Clarification, or Description
AK	• Alaska exempt from IRP & IFTA. • We have approximately 5000 Carrier accounts and 49,100 CV. Alaska requires dual state registration. • Alaska to install E-screening by 9/30/04. • Inspectors pull ISS rating both before and after they decide to inspect a CV. • Inspectors use gravel yard privately owned static scales on occasion to weigh vehicles. AK working to obtain permanent inspection only sites (two in 2004). • Q32. OS/OW online single trip and extended period permits in progress.
CA	• Due to severe budget deficits, the state can no longer support staff resources as matching funds for the CVISN project. Effective November 2003, the state started to terminate all activities. Software developed for the project will be retained in the event that the project can be restarted. • Q14. Fax is for Temporary Operating Authority only. • Q18. Daily for New IRP Enrollments, Quarterly verification of all enrolled carriers. • Q20. Total number of vehicles credentialed per year = 60,000. We do not have a breakdown by new, renewals, or supplements. • Q31. Monthly for new IFTA enrollments, quarterly verification for all enrolled carriers.

STATE	Comment, Clarification, or Description
	• Q32. SSRS: 5000 to 6000; 300 to 400 Mexican Carriers; Single Trip: 1000 for DMV; 13,600 for IFTA; OS/OW: 158,400 Single; 23,500 Annual; MC Permit: 15000 Originals; 45,000 Renewals • Q43. 1,012 FTEs includes supervisory staff • Currently testing ASPEN software. We may equip remaining 41% with laptops using ASPEN software within the next two years. • Q57. 4,904,377 during open hours; 8349195 total PrePass trucks (open and closed hours) • Q60. Current CVISN development is using EDI. However, the state hopes to migrate to a web-based application at a later date.
CO	• Q8. State Issue should be Self-Issue • Q21. State Issue should be Self-Issue • Q32. Single Trip: 13291 Single; 5821 Fuel; Haz Mat: 2216 Annual; 1755 • Q47. Respondent checked both "download full file" and "query central database." • Q48. Respondent checked both "Daily" and "Weekly."
FL	• Q17. Status of IRP registration is available real time through law enforcement inquiry. Authorized jurisdiction data is not available. (DHSMV) • Q20. Renewal amt includes supplemental decal orders (DHSMV) • Q32. Don't issue Hazmat permits (MCCO) • Q34. 16 sites have inspection barn with pit area (MCCO) • Q51. Florida offers bypass of agriculture interdiction stations by non-ag carriers (DACS) • Q56. Now: 6 Ag PrePass + 16 Ag not PrePass + 16 MCCO = 38 sites. In 12 mo: 23 Ag + 19 MCCO = 42 sites. • Q57. Green lights 513236 Ag + 2687667 MCCO. Red lights 25662 Ag + 523223 MCCO.
IL	• Q6. Also have 233,567 apportioned trailers • Q17. Vehicle information is updated • Q39. Axle load weighers=20; Wheel load sets=190 • Q44. 10% of all officers; 100% of MCSAP officers • Q62. To date the State of Illinois has implemented several CVISN Core Capabilities through on-going State initiated safety improvement programs. We are in the process of completing the CVISN Top Level Design and Program Plan and desire to expand our implementation of CVISN as funds become available.
IN	• Q14. Temporary permits sent via fax • Q47 & 48. ISS only; not CVIEW
MD	• Q21. Maryland uses an automatic renewal process that does not require the carrier to reapply each year as long as their account is in good standing. New applications are processed on the web/internet. • Q25. Maryland uses the New York Regional Processing Center for receipt and processing of carrier's quarterly IFTA tax returns. • Q26. IFTA - Maryland does not charge for IFTA decals, therefore no payment is required for IFTA licensing and registration. • Q30. The Comptroller's Office notifies MVA to suspend vehicle registrations when IFTA taxes not paid. • Q37. In addition to the 1,441,615 static scale weighings, 1,036,973 vehicles were weighed using WIM scales in calendar year 2003.
MN	• Q61. Federal grants are for initial pilot state deployment.
MO	• Q7. Supp IRP number of vehicles credential not known. • Q20. IFTA is not a vehicle specific program and therefore the number of vehicles is not known. • Missouri hopes to have a new Web based system within two years to replace three legacy systems for all credential programs. This system will also include a CVIEW and will provide roadside safety information. This system is anticipated to allow Missouri to meet CVISN core requirements.
MT	• Q8 & Q21. Montana has developed, through ACS, the capability for carriers to access IFTA and IRP activities within the CVISN environment. However, based on the instructions from MDT (Montana Department of Transportation) upper management, these capabilities will not be implemented until specific credit card fee issues, not within MDT's purview, are resolved by the Montana Department of Administration, and/or Montana's legislature. • Q48. PreView data repository is updated from SAFER, with both safety and credentials information for all states who submit data to SAFER. Only those states that upload their credentialing data to SAFER will populate the PreView database. All networked PC's have access to PreView via Montana's network communications using MS Internet Explorer Web-Browser.

STATE	Comment, Clarification, or Description
	• Q8, Q9, Q21, Q22. Montana cannot predict what percentage of carrier automated applications and electronic payments will be in 12 months. We anticipate percentages for these functions to be greater than 10% for both IFTA and IRP credentialing.
ND	• Current analysis and design are being financed by 50% matching Federal CVISN dollars. We are waiting on the 2003 Highway bill to see if additional Federal funds will allow us to continue with implementation.
NJ	• Q43. The 106 number used for the figure of State Police includes all inspection units (HAZMAT, Commercial Carrier, Diesel Inspection and Motor Coach). • Q50. Technology is CDMA.
NM	• Q13 & Q26. NM is working with ACS to evaluate additional EFT payment options. • Q14. Internet will use PDF file • Q17 & Q30. IRP& IFTA data will be transmitted to CVIEW daily (or on demand) once New Mexico CVIEW (PreView) is up and running (full deployment expected by end of calendar-year 2004). • Q18 & Q31. PrePass will be able to update on-demand from the New Mexico PreView system • Q26. NM is currently working with ACS to evaluate electronic payment options. • Q37. 1,572,201 on WIMs • Q38. The Santa Teresa IBC will be equipped with scales in the future. • Q41. New Mexico does not operate inspection only sites, per se. However, NM MCSAP officers routinely pull vehicles over for inspection at the roadside and at a variety of paved sites used for this purpose as well as for rest stop and other general traffic purposes.
NY	• Q8 & Q9. Additional functionality being included in Release 2 is expected to dramatically increase usage. • Q13&26. ACH credit & debit are "possible" in 12 months. • [Editor's note: NY sent detailed information on SSRS electronic credentialing (not requested on the original template).] • IFTA Q21&22: Renewals expected to be in place. • Q32: NY's credentialing application has not been operational for a whole year. • 1. New York State has a weight/distance tax which we call Highway Use Tax (HUT). This tax is administered by the NYS Department of Taxation and Finance. It is imposed on vehicles with a gross weight exceeding 18,000 pounds and all these vehicles must be individually credentialed. There are over 750,000 such vehicles credentialed. The HUT program credentials are included in NY's CVISN credentialing program. By the end of the first year of operation, approximately 10% of these HUT credential transactions are occurring through the CVISN credentialing system. Carriers from throughout the United States are benefiting from this program because credentialing is required regardless of base state. • 2. New York State began developing its CVISN program in 1997. The initial focus was on developing and implementing a commercial vehicle database platform that would satisfy all future commercial vehicle related data needs. This effort has yielded New York State's OSCAR (One Stop Credentialing and Registration) website which is the data platform for all present and future CVISN related activities. Development of the architecture and programming needed to create the CVISN platform was performed by representatives from the New York State Tax and Finance Department in combination with representatives from the New York State Department of Transportation (NYSDOT) New York State Department of Motor Vehicles, New York State Police (NYSP), New York Thruway Authority and the New York State Motor Carrier Association. It is the goal of NYS' CVISN team that all transactions involving commercial vehicles will eventually be possible through the OSCAR website. Efforts over the next year will improve the computer infrastructure of OSCAR removing many of the system related restrictions which presently impede additional functionality. Since this effort has been ongoing for many years with much of the work undertaken with existing agencies' resources, identifying and accurately recording costs is difficult. One of the advantages of the approach NYS has taken in developing its CVISN program is that since the CVISN database has already been developed and implemented, other related tasks are made relatively simple such as developing a database the roadside electronic screening system. The NYS CVISN platform includes the following information: • IFTA • IRP • Highway Users Tax • SSRS • Safetynet • CDL. NYS has successfully developed and tested a prototype roadside electronic screening system based on transponder technology using the Norpass system. However, since only a very small percentage of motor carriers have transponders, NYSDOT is pursuing research, development and testing of a license plate reader/video recognition system for integration into the existing prototype system. As part of this effort, NYSDOT will also integrate a weigh-in-motion (WIM) system with the objective of having a complete prototype system designed, developed, tested and ready for deployment by 2005.

STATE	Comment, Clarification, or Description
	• 3. NYSDOT and the State Police perform all roadside inspection and enforcement activities, and generally operate periodically at existing rest area locations using portable and semi-portable scales. Laptop computers are used, with the NYSDOT laptops incorporating wireless digital connections for all information exchange. Please note, however, that since NYS does not use permanent dedicated fixed inspection stations some of the questions on the evaluation forms are not applicable. Concerning ongoing development involving roadside activities, the NYSP are presently deploying and refining an electronic ticketing and accident reporting system which will integrate with OSCAR and other commercial vehicle systems (Safetynet, SAFER). Over 90 percent of the state and all of our vehicle inspectors have the capability of uploading or downloading information from or to the central database systems in SAFER in real time from the field giving them unprecedented access to information and the ability to confirm compliance of particular vehicles, drivers and carriers.
OH	• The IFTA questions that have been asked do not directly relate to the program as it is administered. For instance, in question 19 the number of IFTA vehicles is unknown. The number provided was the number of decals issued which includes replacement decals for new trucks where the old truck is no longer in service or a decal has been destroyed. In addition, carriers may also request additional decals to keep on hand in case a new truck is purchased or a decal is damaged. • Q20. The system used does not accumulate the number of new vehicles credentialed or added through supplementals and does not accumulate the number of supplemental transactions. The number of vehicles credentialed under renewal is the number of decals not the number of vehicles. • Q21. There is no fee for IFTA credentials. IFTA license can be transmitted electronically, but the decals must be mailed. Renewal licenses are mailed with the decals. • Q22. The amounts provided do not include renewals. • Q23. Credential information is data entered by taxation employees. • Q29. There is no current system.
OK	• Q6. The 11,609 accounts are total accounts that were active at some point in 2003; not all these accounts renewed (many carriers who formerly IRP credentialed in Oklahoma could not provide proof of physical address here, so did not renew during the year, explaining the apparent discrepancy in # of transactions and # of accounts) • Q8 (pt1 of 2). Oklahoma's large carriers use an EDI / Bulletin Board to submit IRP applications; credentials are mailed out to carriers. OK plans to implement web-based credentialing, including an EFT component, for smaller carriers and has funds in hands to do so; however, the state is replacing its mainframe IRP legacy system with an Oracle client / server system and will not initiate development of web-based credentialing capabilities until the new system is completed (at least 12 months out). • Q8 (pt2 of 2) IRP staffers currently review the EDI applications manually, then upload application data directly into the IRP system (no data entry required). This step is thus partially automated. With replacement of the IRP legacy system, the EDI / bulletin board application process will be web-enabled, and application data verification and upload will be automated, eliminating the need for manual review and upload. EFT will also be implemented, providing opportunities for carriers using the EDI process to pay for credentials electronically. However, implementation of these enhanced capabilities is estimated to be more than 12 months out. • Q9. 7% of Oklahoma's renewals were completed in 2003 using the EDI bulletin board system. We thus estimate that approximately 7% of all carriers IRP registering in Oklahoma are registering electronically. 67% of the vehicles registered are registered via the EDI system; 74% of all supplemental applications were filed using the EDI system. • Q13. The IRP and IFTA web-credentialing projects include EFT capabilities. Specific capabilities are currently under discussion, but will likely include credit card as well as ACH credit / debit, and may also include electronic checks. • Q20. Note that quarterly IFTA tax reporting is a larger processing burden that IFTA renewals / new accounts, and that Oklahoma receives approximately 16,800 quarterly filings each year. • Q21. Note that Oklahoma has engaged a contractor to develop a new Oracle-based, client server IFTA licensing and tax management system, including web-based credentialing and quarterly filing capabilities. The web system will include EFT capabilities. It is anticipated that the web-based system will be up and running within the next 18 months, but not within the next 12 months. • Q26. The IRP and IFTA web-credentialing projects include EFT capabilities. Specific capabilities are currently under discussion, but will likely include credit card as well as ACH credit / debit, and may also include electronic checks. • Q32. Other: 832 intrastate and interstate exempt carriers revoked • Q34. 11 sites are used by the OCC for safety inspections; however, the Oklahoma DPS is the

STATE	Comment, Clarification, or Description
	MCSAP organization within Oklahoma and is responsible for the lion's share of inspections. The DPS, except very occasionally, does not use the weigh stations for inspections. Rather, more than 90% of safety inspections are completed on a random basis at roadside from mobile units. • Q37. Oklahoma's fixed scales are operated by the Oklahoma Corporation Commission and the Oklahoma Tax Commission. The OCC does not have weight enforcement authority. The OTC has authority to enforce registered weight only. Only the DPS has authority to enforce the state's size and weight authority. DPS operates mobile enforcement operations only. Thus, the fixed scales weigh approximately 1.7 million vehicles annually to check operating weight against registered weight. • Q41. Oklahoma has 13 roadside sites where officers routinely set up portable weighing equipment to conduct both size and weight and safety inspections. OK has more than 120 locations where MCSAP officers routinely conduct safety inspections (these are not necessarily sites with developed facilities, rather they are rest stops, parking lots, empty lots and / or sites where ROW is sufficient to safely accommodate pullover and parking of CVs for roadside inspections. • Q47. Plan is that when CVIEW is deployed, remote sites will query CVIEW central site; note that this will be manual queries where plate or DOT number is keyed into CVIEW query screen. • Q48. When CVIEW is deployed, data will be updated nightly (or more frequently). It is anticipated that once Oklahoma data is pushed to SAFER nightly by the Oklahoma CVIEW, that the PrePass central site will be updated nightly by SAFER, and that the PrePass central site will update local screening databases nightly or more frequently.
SC	• At this time S.C. is only utilizing the initial funding sent through the SCDOT for CVISN. We haven't been unable to get the SCDOT to dedicate any additional funding to CVISN even though they can. Because that funding is sent to SCDOT. SCDPS has no way of securing those funds unless SCDOT see it as a priority for them and releases it to SCDPS.
TX	• This update is not complete -- only Respondent info has been changed. Am currently gathering updated capability statistics.
WA	• Q57 & Q58. Random pull-in rate of 0 to 5% is only a subset of overall red-light rate. Red light can be given randomly or for cause. Overall red light rate = approx. 15% of all transponder-equipped trucks.
WI	• IFTA quarterly tax returns: Currently 8% are being filed electronically. We anticipate this will increase to 25% six months from now. • Future IFTA and IRP e-credentials: We hope to add electronic flat file transaction capability in the next few years, which would better serve our high-volume customers. With this capability, we expect to reach about 50% of our IFTA and IRP transactions completed electronically. • IFTA credentialing transactions: For question 20, please note our IFTA processing system does not capture the number of new vs. renewal licenses issued. It also doesn't capture the number of supplemental IFTA transactions (applications for additional IFTA decals). • IRP and IFTA vehicles credentials: For questions 7 and 20, please note our processing system does not provide reports showing the number of vehicles credentialed.

APPENDIX I.
EXCERPT FROM SAFETEA-LU REGARDING CVISN DEPLOYMENT SUPPORT (AUGUST 2005)

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APPENDIX I.
EXCERPT FROM SAFETEA-LU REGARDING
CVISN DEPLOYMENT SUPPORT (AUGUST 2005)

SAFE, ACCOUNTABLE, FLEXIBLE, EFFICIENT TRANSPORTATION EQUITY ACT: A LEGACY FOR USERS

Public Law 109-59
109th Congress

An Act

To authorize funds for Federal-aid highways, highway safety programs, and transit programs, and for other purposes. <<NOTE: Aug. 10, 2005 - [H.R. 3]>>

Be it enacted by the Senate and House of Representatives of the United States of America in Congress <<NOTE: Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users. Inter-governmental relations. 23 USC 101 note.>> assembled,

* * * * * * * * * * * * * * * *

SEC. 4126. COMMERCIAL VEHICLE INFORMATION SYSTEMS AND NETWORKS DEPLOYMENT.

(a) In General.--The Secretary shall carry out a commercial vehicle information systems and networks program to--

(1) improve the safety and productivity of commercial vehicles and drivers; and

(2) reduce costs associated with commercial vehicle operations and Federal and State commercial vehicle regulatory requirements.

(b) Purpose.--The program shall advance the technological capability and promote the deployment of intelligent transportation system applications for commercial vehicle operations, including commercial vehicle, commercial driver, and carrier-specific information systems and networks.

(c) Core Deployment Grants.--

(1) In general.--The Secretary shall make grants to eligible States for the core deployment of commercial vehicle information systems and networks.

(2) Amount of grants.--The maximum aggregate amount the Secretary may grant to a State for the core deployment of commercial vehicle information systems and networks under this subsection and sections 5001(a)(5) and 5001(a)(6) of the Transportation Equity Act for the 21st Century (112 Stat. 420) may not exceed $2,500,000.

(3) Use of funds.--Funds from a grant under this subsection may only be used for the core deployment of commercial vehicle information systems and networks. An eligible State that has either completed the core deployment of commercial vehicle information systems and networks

or completed such deployment before grant funds are expended under this subsection may use the grant funds for the expanded deployment of commercial vehicle information systems and networks in the State.

(d) Expanded Deployment Grants.--

(1) In general.--For each fiscal year, from the funds remaining after the Secretary has made grants under subsection (c), the Secretary may make grants to each eligible State, upon request, for the expanded deployment of commercial vehicle information systems and networks.

(2) Eligibility.--Each State that has completed the core deployment of commercial vehicle information systems and networks in such State is eligible for an expanded deployment grant under this subsection.

(3) Amount of grants.--Each fiscal year, the Secretary may distribute funds available for expanded deployment grants equally among the eligible States, but not to exceed $1,000,000 per State.

(4) Use of funds.--A State may use funds from a grant under this subsection only for the expanded deployment of commercial vehicle information systems and networks.

(e) Eligibility.--To be eligible for a grant under this section, a State--

(1) shall have a commercial vehicle information systems and networks program plan approved by the Secretary that describes the various systems and networks at the State level that need to be refined, revised, upgraded, or built to accomplish deployment of core capabilities;

(2) <<NOTE: Certification.>> shall certify to the Secretary that its commercial vehicle information systems and networks deployment activities, including hardware procurement, software and system development, and infrastructure modifications--

(A) are consistent with the national intelligent transportation systems and commercial vehicle information systems and networks architectures and available standards; and

(B) promote interoperability and efficiency to the extent practicable; and

(3) shall agree to execute interoperability tests developed by the Federal Motor Carrier Safety Administration to verify that its systems conform with the national intelligent transportation systems architecture, applicable standards, and protocols for commercial vehicle information systems and networks.

(f) Federal Share.--The Federal share of the cost of a project payable from funds made available to carry out this section shall not exceed 50 percent. The total Federal share of the cost of a project payable from all eligible Federal sources shall not exceed 80 percent.

(g) Definitions.--In this section, the following definitions apply:

(1) Commercial vehicle information systems and networks.-- The term “commercial vehicle information systems and networks” means the information systems and communications networks that provide the capability to--

(A) improve the safety of commercial motor vehicle operations;

(B) increase the efficiency of regulatory inspection processes to reduce administrative burdens by advancing technology to facilitate inspections and increase the effectiveness of enforcement efforts;

(C) advance electronic processing of registration information, driver licensing information, fuel tax information, inspection and crash data, and other safety information;

(D) enhance the safe passage of commercial motor vehicles across the United States and across international borders; and

(E) promote the communication of information among the States and encourage multistate cooperation and corridor development.

(2) Commercial motor vehicle operations.--The term "commercial motor vehicle operations"--

(A) means motor carrier operations and motor vehicle regulatory activities associated with the commercial motor vehicle movement of goods, including hazardous materials, and passengers; and

(B) with respect to the public sector, includes the issuance of operating credentials, the administration of motor vehicle and fuel taxes, and roadside safety and border crossing inspection and regulatory compliance operations.

(3) Core deployment.--The term "core deployment" means the deployment of systems in a State necessary to provide the State with the following capabilities:

(A) Safety information exchange to--

(i) electronically collect and transmit commercial motor vehicle and driver inspection data at a majority of inspection sites in the State;

(ii) connect to the safety and fitness electronic records system for access to interstate carrier and commercial motor vehicle data, summaries of past safety performance, and commercial motor vehicle credentials information; and

(iii) exchange carrier data and commercial motor vehicle safety and credentials information within the State and connect to such system for access to interstate carrier and commercial motor vehicle data.

(B) Interstate credentials administration to--

(i) perform end-to-end processing, including carrier application, jurisdiction application processing, and credential issuance, of at least the international registration plan and international fuel tax agreement credentials and extend this processing to other credentials, including intrastate registration, vehicle titling, oversize vehicle permits, overweight vehicle permits, carrier registration, and hazardous materials permits;

(ii) connect to such plan and agreement clearinghouses; and

(iii) have at least 10 percent of the credentialing transaction volume in the State handled electronically and have the capability to add more carriers and to extend to branch offices where applicable.

(C) Roadside electronic screening to electronically screen transponder-equipped commercial vehicles at a minimum of one fixed or mobile inspection site in the State and to replicate this screening at other sites in the State.

(4) Expanded deployment.--The term "expanded deployment" means the deployment of systems in a State that exceed the requirements of a core deployment of commercial vehicle information systems and networks, improve safety and the productivity of commercial motor vehicle operations, and enhance transportation security.

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[Source: http://frwebgate.access.gpo.gov, accessed 6/23/2008.]

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