

ITS/CVO Carrier Operations Program

The ITS/CVO carrier operations program will focus on the development of hazardous materials incident response systems. It also will explore the CVO market for traveler information and define the appropriate Federal role in fleet management.

Progress to Date

- Deployed incident management, freeway management, and traveler information systems in many large metropolitan areas
- Involved motor carriers in reporting and disseminating of traveler information
 - Supported deployment of fleet and vehicle management systems by motor carriers

Near-Term Goals (1996/1997)

- Test and evaluate TruckDesk system to provide tailored information to motor carriers operating in the Northeast corridor
- Define appropriate Federal role in ITS applications for fleet management and intermodal freight operations
- Complete operational tests of hazardous materials incident response systems (Operation Respond, Transit Xpress)

Medium-Term Goals (1998/ 1999)

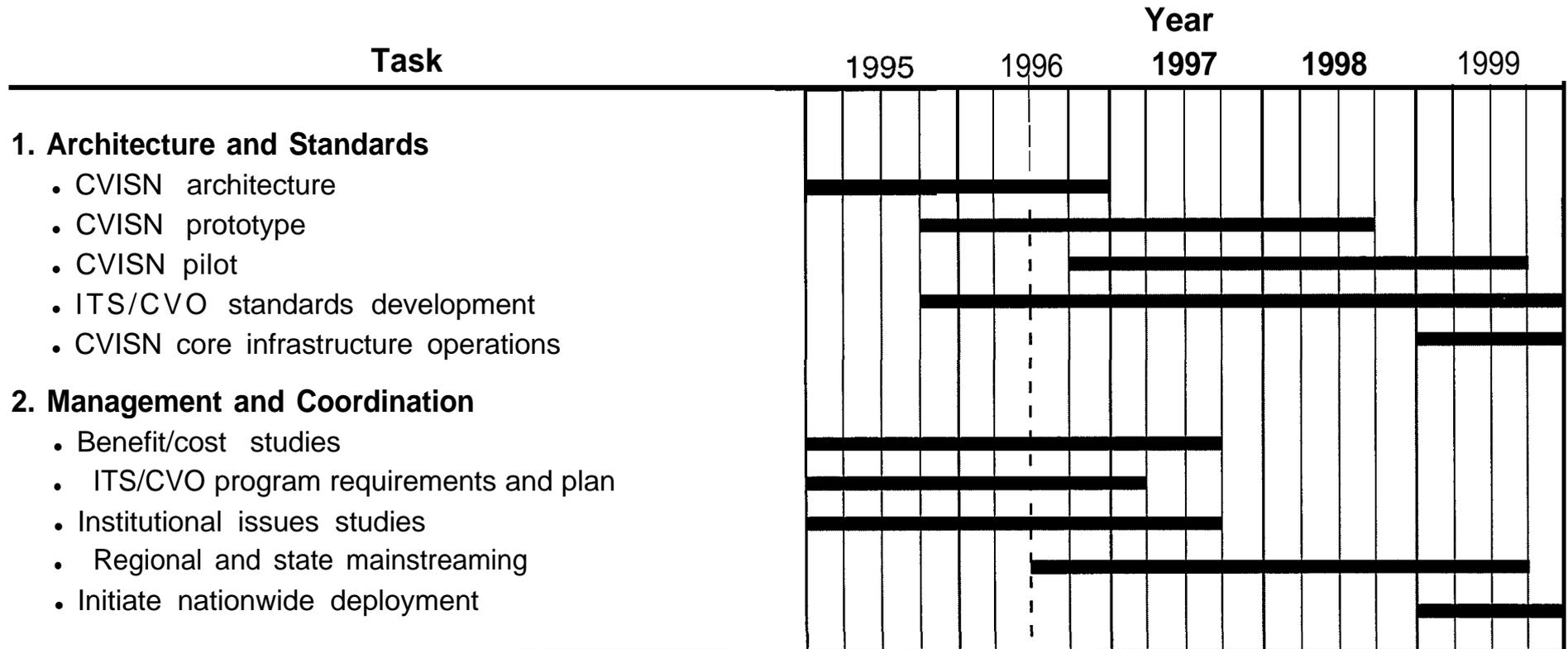
- Develop and test nationwide hazardous materials incident response system
- Develop additional CVO traveler information systems

Long-Term Goals (2000-2005)

- Complete deployment of ITS core infrastructure for metropolitan areas, with specific services targeted at motor carriers.

ITS/CVO Roadmap

Technical and Organizational Infrastructure



ITS/CVO Technical and Organizational Infrastructure Programs

The next two years will be critical to the progress of the ITS/CVO programs, particularly through the CVISN model deployment and the mainstreaming program.

Progress to Date

- Defined the CVISN architecture
- Began work on defining unique identifiers and standards
 - Completed ITS/CVO institutional issues studies in nearly all states

Near-Term Goals (1996/1997)

- Conduct CVISN prototype demonstrations in Maryland and Virginia
- Begin CVISN model deployment with a pilot test in eight states
- Complete industry and state benefit/cost studies
- Complete national ITS/CVO program plan
- Initiate regional and state mainstreaming activities -- establish forums, develop business plans, and identify champions

Medium-Term Goals (1998/ 1999)

- Complete CVISN model deployment and begin expansion to other states
 - Deploy CVISN core infrastructure
 - Achieve consensus on standards for electronic data interchange and dedicated short-range communications
- Develop ongoing ITS/CVO forums and business plans in each state and region; begin transition from Federal funding to state funding

Long-Term Goals (2000-2005)

- Achieve nationwide deployment of CVISN infrastructure
 - Support ITS/CVO forums through state budgets

Major Milestones

Events	Year			
	1996	1997	1998	1999
Select CVISN pilot states	[Bar spanning Q1 1996 to Q2 1996]			
Award mainstreaming funding	[Bar spanning Q1 1996 to Q2 1996]			
Conduct CVISN prototype test	[Bar spanning Q1 1996 to Q4 1998]			
Publish baseline CVISN architecture	[Bar spanning Q3 1996 to Q2 1997]			
Deploy computers and inspection software at 200 MCSAP sites	[Bar spanning Q1 1996 to Q3 1997]			
Conduct ITS/CVO operational tests (e.g., Advantage I-75 MACS, international border crossing, out-of-service verification, one-stop shopping)	[Bar spanning Q1 1996 to Q4 1999]			
Conduct CVISN pilot test	[Bar spanning Q2 1996 to Q4 1999]			
Develop state and regional CVO business plans	[Bar spanning Q2 1996 to Q3 1998]			

Major Milestones

The CVISN pilot test and the completion of major operational tests will be the most significant milestones for the ITS/CVO program over the next three years.

The major milestones for the ITS/CVO program over the next three years are as follows:

Fall 1996

- Select CVISN pilot states; award mainstreaming funding

Winter 1996/97

- Publish baseline CVISN architecture

Summer 1997

- Complete deployment of computers and inspection software at 200 MCSAP sites

Through Fall 1997

- Complete current round of CVO operational tests (E.g., Advantage I-75 MACS, international border crossing, out-of-service verification, one-stop shopping)

Spring 1998

- Complete state and regional ITS/CVO business plans

Fall 1998

- Complete CVISN prototype demonstration

Summer 1999

- Complete CVISN pilot test

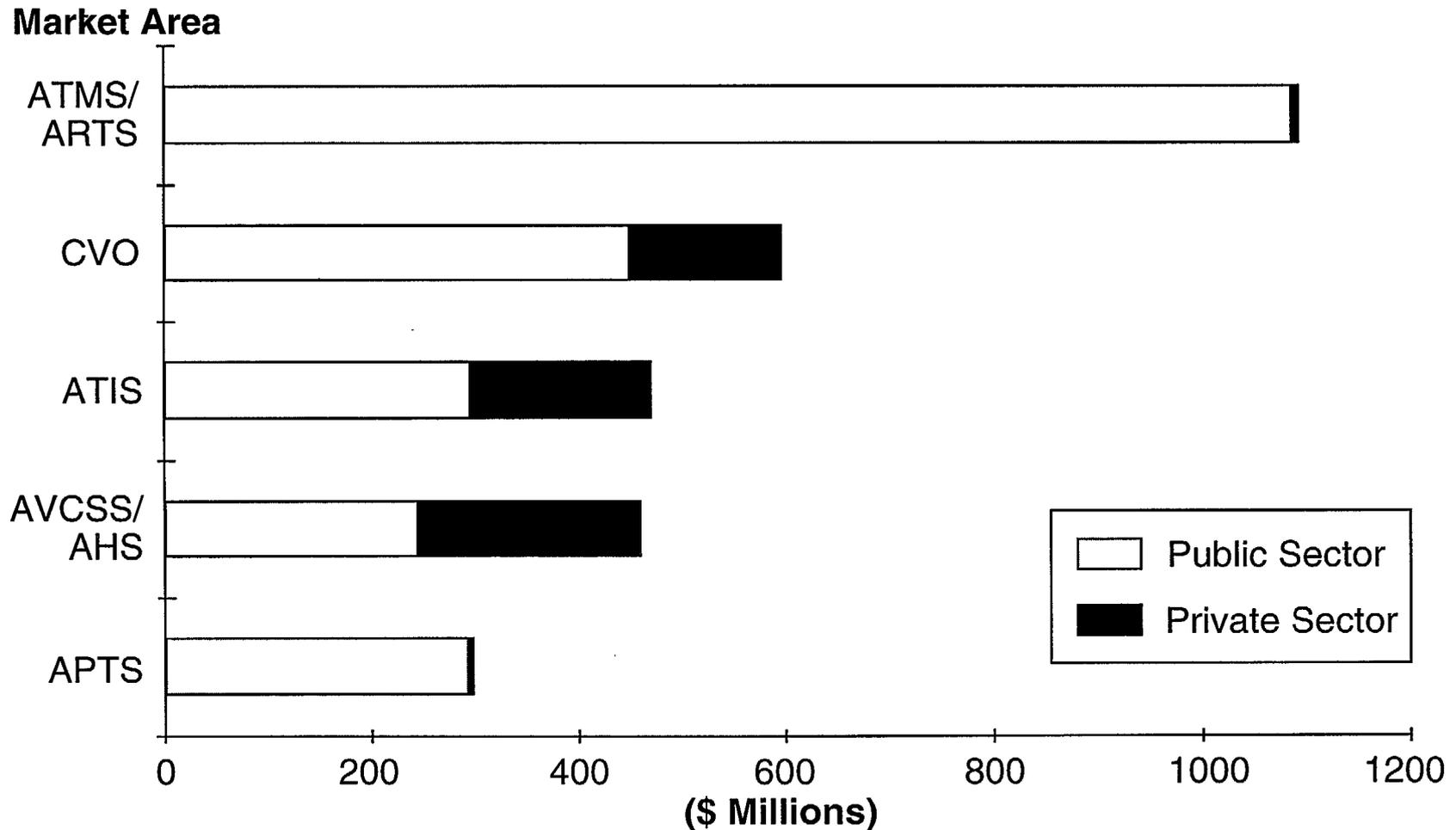
Funding Strategy

This chapter describes a general funding approach for the ITS/CVO program.

This chapter describes provides a general funding approach for the ITS/CVO program. It includes the following:

- An assessment of the program's historical funding levels;
- Estimates of future funding requirements;
- The identification of potential Federal, state, local, and private sector funding sources; and
- Strategies for the devolution of funding responsibilities from the Federal government to the states and to the private sector.

ITS Expenditures, 1992 to 1995



Source: U.S. DOT, Joint Program Office for ITS.

Historical Expenditures

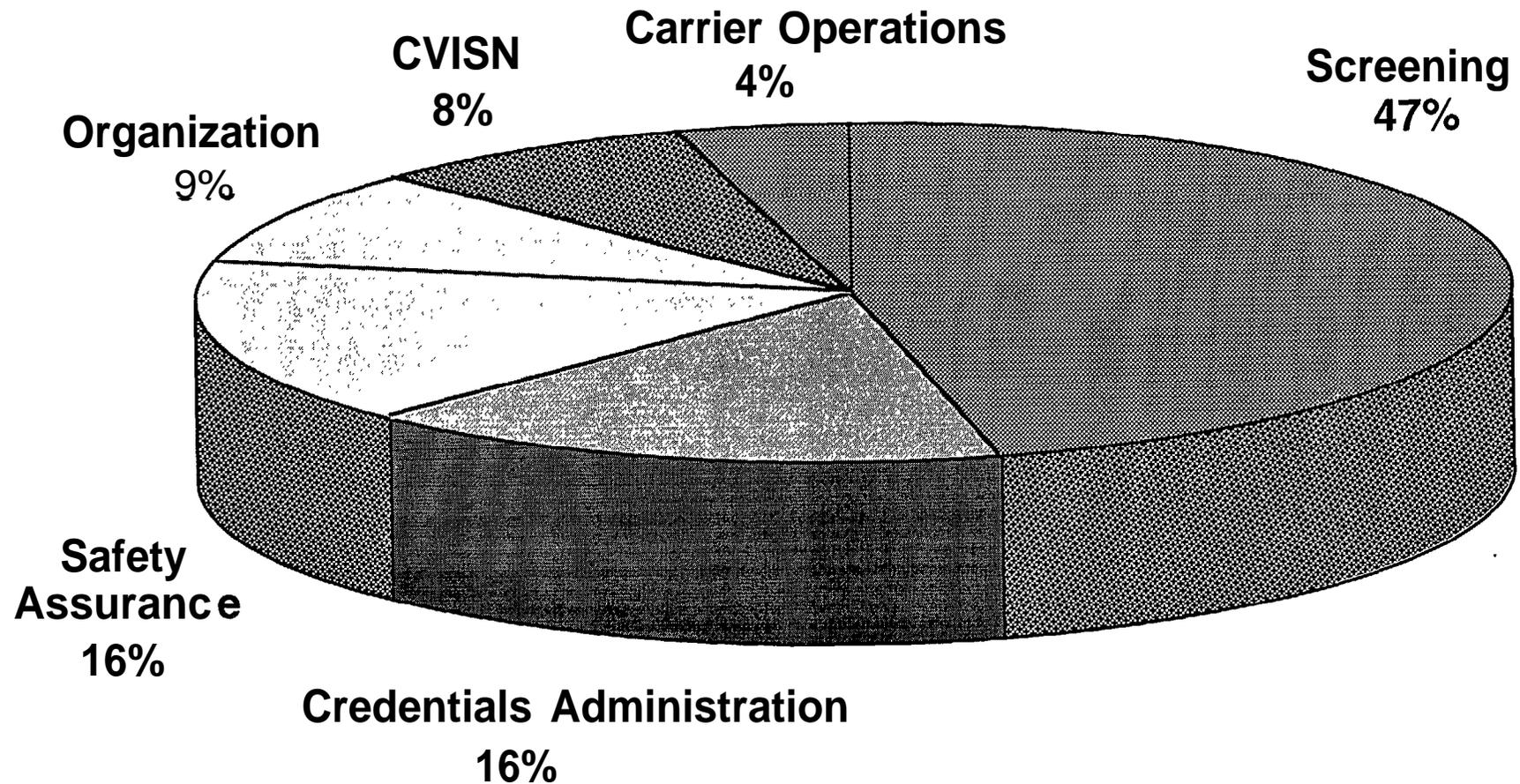
Approximately \$600 million was expended on ITS/CVO development and deployment from 1992 to 1995.

The U.S. DOT's Joint Program Office for ITS has estimated that investment in ITS products and services totaled \$2.9 billion from 1992 to 1995.¹ The largest amount, over \$1 billion, was spent on Advanced Traffic Management Systems (ATMS) and Advanced Rural Transportation Systems (ARTS). This was followed by CVO, which represented 20 percent of the total ITS investment over the period, or \$600 million; Advanced Traveler Information Systems (ATIS); Advanced Vehicle Control and Safety Systems (AVCSS) and Automated Highway Systems (AHS); and Advanced Public Transportation Systems (APTS) .

Federal and state governments accounted for about three-quarters of the ITS/CVO spending during the four-year period, or \$451 million. The remaining \$147 million in ITS/CVO spending was provided by the private sector. The private sector's role in ITS/CVO deployment to date has been substantially larger than in other ITS market areas.

¹Funding levels were derived from *The Intelligent Vehicle-Highway Systems Program in the United States*, produced by the U.S. DOT's Joint Program Office for Intelligent Transportation Systems in 1995. This document provided the most recent funding data for the Federal program for fiscal years 1992 through 1995.

Estimated ITS/CVO Spending by Program Area, 7991 to 7998



Source: Cambridge Systematics, inc. estimates.

Public Sector Funding

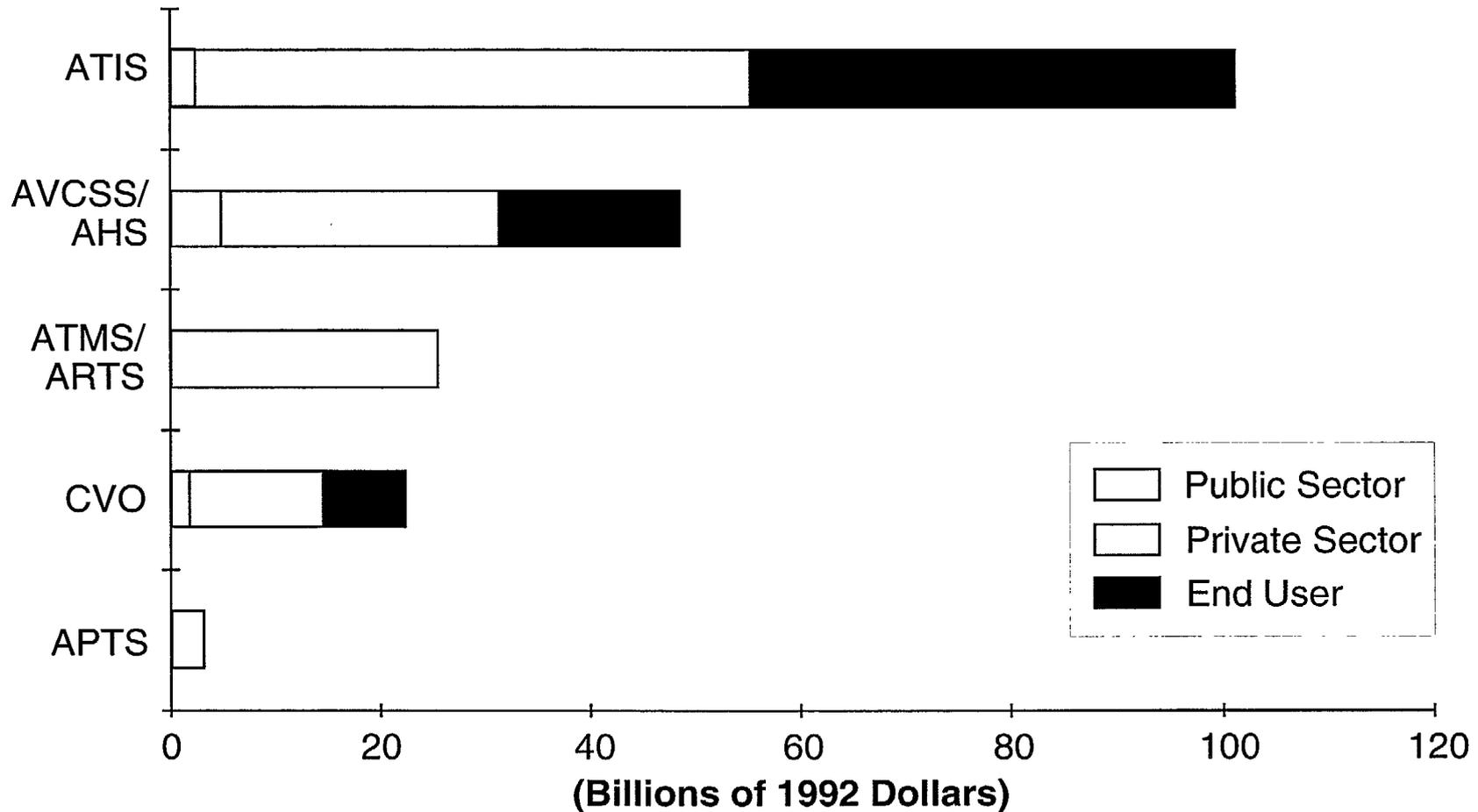
Public sector ITS/CVO investment initially focused on automated clearance. However, the emphasis is shifting toward safety assurance and the technical architecture.

A detailed analysis of ITS/CVO funding is difficult to develop due to the large number of agencies and projects involved. However, broad trends in public sector ITS/CVO funding can be identified by assessing current and planned funding for the major projects identified in Chapter 3.0:

- Commercial vehicle screening projects account for more than 45 percent of public sector ITS/CVO funding to date. This spending includes three large domestic operational tests - HELP/Crescent, Advantage I-75 MACS, and Oregon Green Light - as well as the four international border clearance tests that are underway.
- Credentials administration projects account for about 16 percent of public sector ITS/CVO expenditures. The major initiatives in this area include the Commercial Vehicle Information System (CVIS), the Automated Mileage and Stateline Crossing Operational Test (AMASCOT), and the one-stop shopping operational tests.
- Safety assurance programs account for about 16 percent of public sector ITS/CVO expenditures. The major initiatives in this area include development of the SAFER system and deployment of computers and software through the 100/200 MCSAP Site Project. Research and testing on out-of-service verification technologies, brake testing devices, and driver fatigue also are priorities.
- Development of the technical and organizational framework for ITS/CVO deployment through the CVISN and mainstreaming initiatives represents about 17 percent of public sector ITS/CVO spending.
- Carrier operations projects are a lower priority for public sector ITS/CVO spending, with the exception of hazardous materials incident response systems.

Projected ITS Expenditures, 1997 to 2011

Market Area



Source: ITS America.

Future Funding Needs

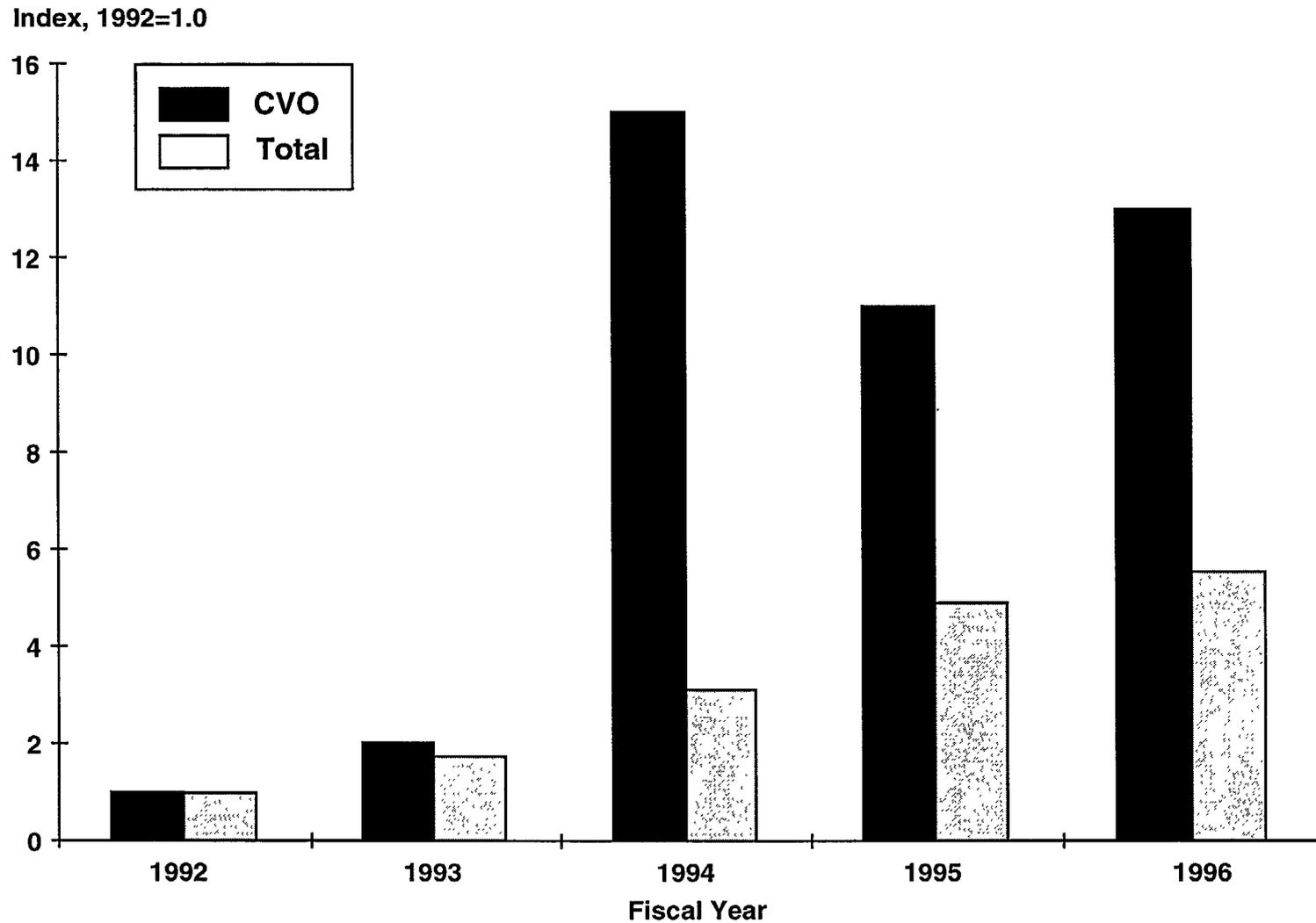
ITS/CVO spending is projected to be \$21 billion over the next 15 years, with the private sector providing the majority of the investment.

ITS America has estimated that ITS expenditures between 1997 and 2011 will total \$200 billion in 1992 dollars, which would make ITS deployment one of the largest transportation programs in history.¹ In comparison, the construction of the Interstate Highway Systems cost \$130 billion over a 35-year period.

It is estimated that CVO would account for \$21 billion, or approximately 10 percent of this total. Over the long-term, the size of the CVO market is projected to be roughly equal to that of ATMS, although smaller than the markets for ATIS, AVCSS, and AHS.²

It is assumed that the private sector will account for the vast majority of ITS/CVO spending. ITS America projected that manufacturers, service providers, and other vendors will provide more than half of ITS/CVO investment over the next 15 years, while end users such as motor carriers provide an additional 40 percent. It should be noted, however, that the private sector's ITS expenditures to date have been 80 percent below the ITS America projections.

Federal Funding for ITS Operational Tests



Source: U.S. DOT, Joint Program Office for ITS; Cambridge Systematics, Inc. estimates for 1996.

Federal Funding

The Federal government is a catalyst for ITS/CVO deployment.

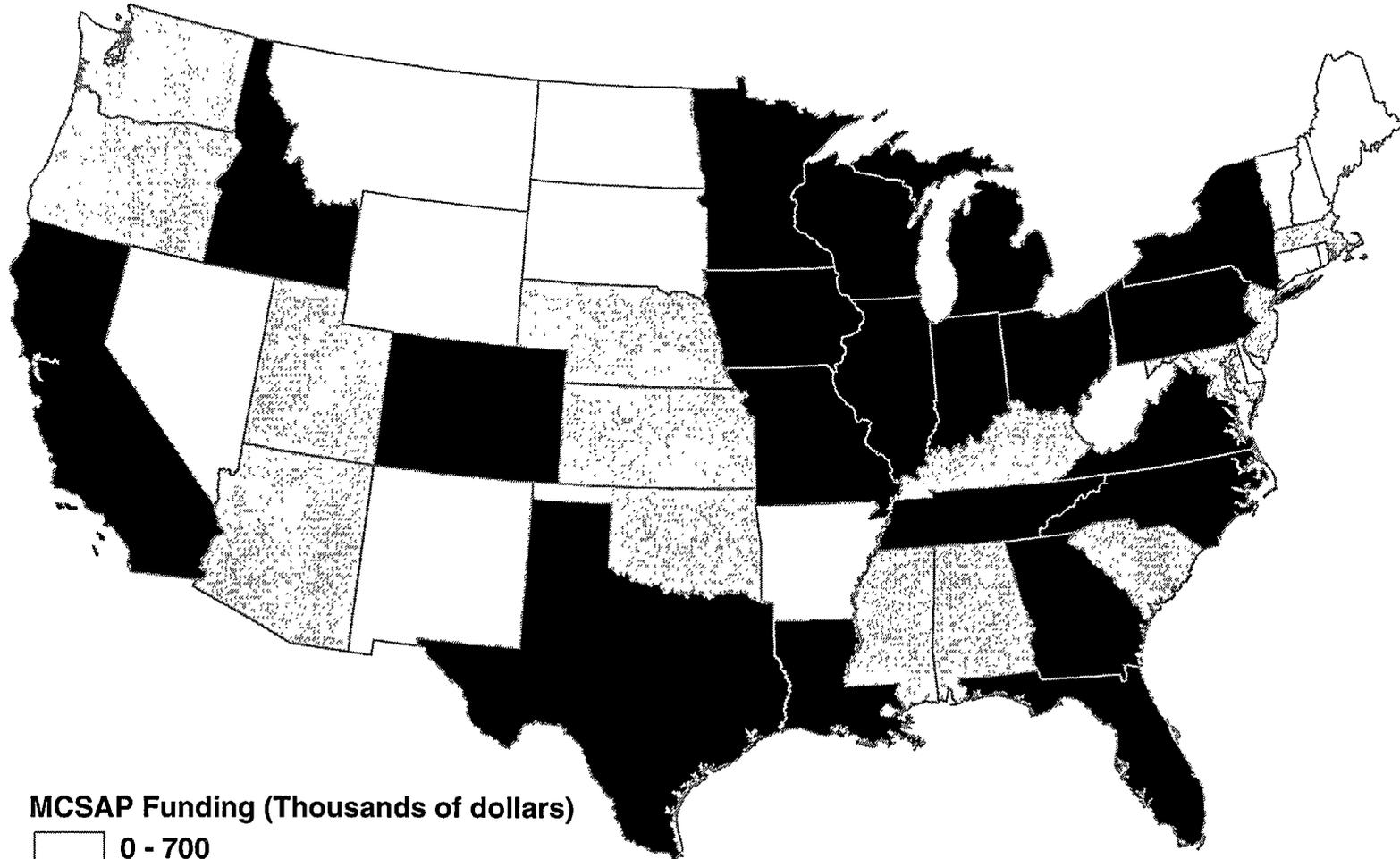
The Federal government is a catalyst for ITS/CVO deployment. The Federal government is the primary source of funding for research, development, and capital costs. Each year, the Federal governments spends upwards of \$30 million on the ITS/CVO program. The major Federal funding sources include:

- The overall ITS budget, which is overseen by the JPO;
- Congressional earmarks for specific projects;
- The general operating expenditures of the FHWA Office for Motor Carriers;
- The Motor Carrier Safety Assistance Program (MCSAP); and
- The Federal-aid highway programs financed by the Highway Trust Fund.

Federal support for ITS/CVO research and testing has increased dramatically in recent years. Federal operational test funding increased from \$1 million in 1992 to an average of \$13 million per year from 1994 to 1996. This growth rate significantly outstrips the growth of research and development funding for ATMS, ATIS, and other ITS market areas. This growth reflects the following factors:

- Growing recognition of the magnitude of the problems facing CVO, as well as the opportunities provided by ITS;
- The success of early operational tests and research projects, which has indicated that ITS/CVO are better poised for deployment than other ITS market areas; and
- The ambitious deployment targets set by the OMC and the JPO, particularly with regard to the CVISN.

MCSAP Funding by State, Fiscal Year 1994



MCSAP Funding (Thousands of dollars)

0 - 700

700-1, 400

>1, 400

Source: Federal Highway Administration.

Federal Funding (continued)

The Motor Carrier Safety Assistance Program (MCSAP) is a key funding source for the deployment of ITS/CVO safety assurance systems.

Although the ITS budget is a critical source of funding, the ITS/CVO program eventually must become integrated with other Federal funding programs. The need for integration is driven not only by the intense competition among ITS market areas for a limited funding pool, but also by the value of exposing a wide range of Federal personnel, offices, and programs to ITS/CVO.

In particular, the Motor Carrier Safety Assistance Program (MCSAP) is a key source of funding for the deployment of ITS/CVO safety assurance systems. Through this program, the FHWA provides grants to the states to assist with the following activities:

- Enforcement of commercial vehicle size and weight limits at locations other than fixed sites, at sites with steep grades or mountainous terrain where a vehicle's weight may affect its operation significantly, or at seaports where intermodal containers enter and exit the United States;
- Detection of the unlawful presence of a controlled substance in the commercial vehicle or on the person of any occupant of a commercial vehicle; and
- Enforcement of state traffic laws and regulations designed to promote safe operation of commercial vehicles.

Federal funding for the MCSAP totals about \$80 million per year. The states are required to provide a 20 percent matching contribution.



Potential Federal-Aid Sources of ITS/CVO Funding

Funding Program	Eligible Uses
National Highway System (NHS)	<ul style="list-style-type: none">• Operational improvements for segments of the NHS• Highway safety improvements for segments of the NHS• Transportation planning• Startup costs for traffic management and control
Surface Transportation Program (STP)	<ul style="list-style-type: none">• Operational improvements on Federal-aid highways and bridges• Highway safety improvements and programs• Highway research, development, and technology transfer• Capital and operating costs for traffic monitoring, management, and control facilities and programs• Surface transportation planning
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	<ul style="list-style-type: none">• Transportation activities in an approved State Implementation Plan (SIP)• Capital and operating costs for traffic monitoring, management, and control facilities and programs
Metropolitan Planning State Planning and Research (SPR)	<ul style="list-style-type: none">• MPO planning activities, including data collection and analysis• Planning for future highway programs, including data collection and analysis• Studies of the economy, safety, convenience, regulation, and taxation of highway usage• Research, development, and technology transfer activities
Research and Technology Program	<ul style="list-style-type: none">• Studies of size and weigh standards, including the feasibility of uniform state regulations• Studies to identify and measure factors related to economic, social, and environmental impacts of highway projects
Applied Research and Technology Program	<ul style="list-style-type: none">• Technologies to increase the efficiency and productivity of vehicular travel• Technologies to increase the safety and accessibility of vehicular transportation systems
FHWA Highway Safety (402) Program	<ul style="list-style-type: none">• Data collection and analysis• Developing technical guides and materials for state and local highway agencies• Equipment for inventorying, monitoring, and testing• Providing technical highway safety training

Federal Funding (continued)

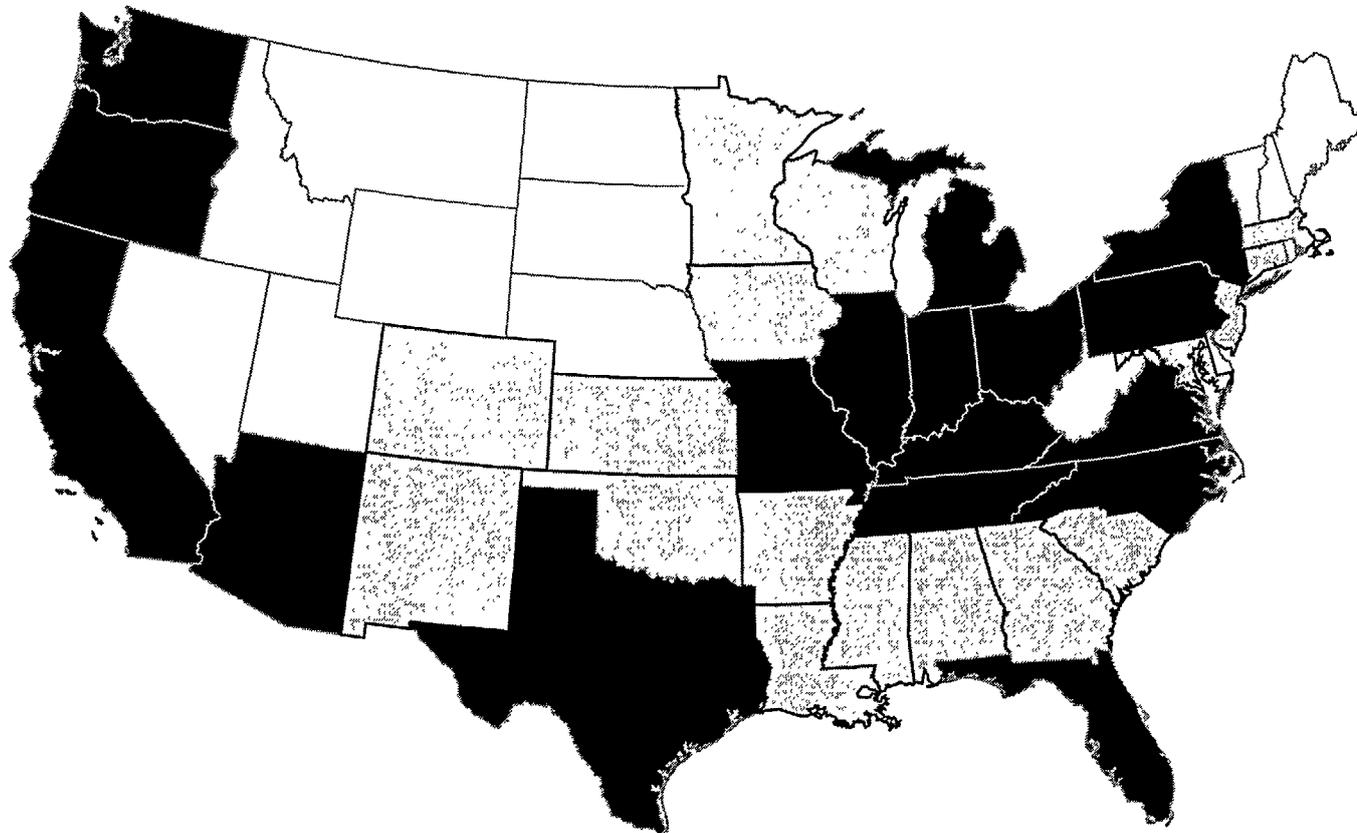
Federal-aid highway programs will become a more important source of funding for ITS/CVO planning, deployment, and operations.

Increasingly, the **ITS/CVO** program will turn to Federal-aid highway programs as a source of funding for planning, deployment, and operations. These sources are particularly important for the ITS/CVO services that are focused on traffic management, such as commercial vehicle traveler information systems and hazardous materials incident response services.

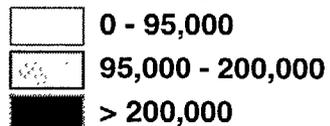
ITS/CVO services may be eligible for grants from several Federal-aid programs, including the following:

- **The Surface Transportation Program (STP)**, which can fund a wide range of operational improvements, highway safety programs, and planning activities. These funds may cover capital and operating costs for traffic management facilities and programs. They are allocated largely at the discretion of each state.
- **The National Highway System (NHS)**, which can fund operational and highway safety improvements on segments of the 161,108-mile NHS network. Operational improvements include traffic surveillance and control equipment, motorist information systems, and incident management programs.
- **The Congestion Mitigation and Air Quality Improvement (CMAQ) program**, which can fund transportation activities that are likely to improve air quality. **CVO** traffic management activities, particularly in urban areas, would qualify for this funding.

Total State Highway User Taxes Paid by Medium and Large Trucks, 1992



Total Trucking Revenues (Thousands of dollars)



Source: The ATA Foundation.

State and Local Funding

The successful long-term deployment of the ITS/CVO program depends on the availability of state funding for operations and maintenance.

The successful long-term deployment of the ITS/CVO program depends on the availability of state and local funding. State and local governments are the primary sources of operations and maintenance funding. However, relatively few state governments – and even fewer local governments – have dedicated funding sources for ITS/CVO projects.

The potential for increased state funding for ITS/CVO projects is strong. The states collect the majority of trucking-related revenue. In fiscal year 1993, the states collected nearly \$12 billion in revenue from motor carriers in the form of motor fuel taxes, registration fees, and other levies (excluding tolls). In comparison, the Federal government collected \$8 billion in highway user fees from trucks in 1992.

Although trucks represent a relatively small share of total vehicle traffic, they account for a large share of highway revenue. Trucks represent at least 30 percent of highway revenue in 19 states, with Indiana the highest at 45 percent.

In addition, toll authorities that operate bridges, tunnels, and turnpike authorities can provide funding for the planning and deployment of ITS/CVO programs for their facilities.

Devolution Strategies

- Provide step-down Federal grants
- Build public sector constituency for ITS/CVO
- Increase freight community involvement in transportation planning
- Form public/private partnerships

State and Local Funding (continued)

The ITS/CVO program will not rely exclusively on Federal money, but will use Federal investment as a catalyst. Over the long-term, funding responsibilities will shift to the states and to the private sector.

The ITS/CVO program will not rely exclusively on Federal money, but will use Federal investment as a catalyst to support research and development, operational tests, and startup costs. Over the long-term, funding responsibilities will shift to the states and to the private sector.

The devolution of funding responsibility from the Federal governments to the states will require the following actions:

- **Provide step-down grants.** Where possible, Federal ITS/CVO funding will be provided to the states in the form of “step-down” grants, in which the Federal share of the total project costs decreases each year. In this manner, the Federal government can provide an incentive for a state to begin deployment of ITS/CVO services. Once the benefits of the service are evident, the state should be willing to bear more of the costs.
- **Build a constituency among public sector decision-makers.** The ITS/CVO program will seek ways to build support among key decision-makers so that it can compete more effectively for Federal-aid highway funds, as well as for state and local general operating budgets. Through the mainstreaming initiative, the ITS/CVO program will develop business plans and ongoing forums at the state, regional, and national levels. Over time, efforts will be undertaken to integrate ITS/CVO projects and plans into the state and metropolitan transportation improvement plans and management systems. Outreach and education will be a critical element of this effort.
- **Increase freight community involvement in planning activities.** In addition, steps will be taken to increase the involvement of the motor carriers and other freight community stakeholders in state and metropolitan planning. The ISTEA greatly expanded the role of the MPO in freight planning, but surveys indicate that freight industry input into the MPO planning process is limited. Industry participation is important to ensure that the planning and funding decisions made by MPOs reflect the needs of the trucking and bus industries.



Public/Private Investment Roadblock

**Public
Investment**

**Private
Investment**

Private Sector Funding

ITS/CVO deployment cannot succeed without significant private sector investment. To encourage this private sector investment, the public sector must commit to deployment of the core infrastructure, increase awareness about ITS/CVO, and develop models for public/private contracting.

ITS/CVO deployment cannot succeed without significant private sector investment. As noted, ITS America has estimated that the private sector – including vehicle and equipment manufacturers, service providers, and individual motor carriers – will account for over 90 percent of future ITS/CVO investment. This proportion is substantially larger than the 25 percent share provided by the private sector to date.

The private sector is reluctant to commit funds to ITS/CVO without guarantees that the public sector will invest in the necessary infrastructure. At the same time, the public sector is hesitant to deploy the infrastructure without assurance of private sector participation. In addition, a long-standing regulatory relationship between public agencies and the motor carriers complicates the development of stable partnerships. To encourage the private sector investment that is its future lifeline, the national ITS/CVO program will undertake the following initiatives:

- **Commit to deployment of the core CVO infrastructure.** The FHWA will remain steadfast in its commitment to deploy the CVISN and its key clearinghouses and information systems nationwide by 2005. Progress in this area will encourage private sector investment and development of other applications.
- **Increase private sector awareness and support for ITS/CVO.** The national, regional, and state ITS/CVO forums will continue to encourage participation from motor carriers and other private businesses. The regional “champions” and FHWA staff will continue to conduct outreach activities oriented toward the private sector.
- **Seek private sector expertise.** The ITS/CVO program will explore areas in which the private sector can bring expertise as well as additional investment dollars. Private sector leadership is particularly appropriate in areas where most of the benefit accrues to private businesses, as well as in areas where the risk is high.
- **Develop models for public/private partnerships.** Public agencies often lack guidelines in evaluating proposals for partnerships with the private sector. In addition, regulatory and statutory barriers to contracting with the private sector must be eliminated.

Introduction

This Appendix includes summaries of more than 50 recent and ongoing ITS/CVO projects. Each project description includes the following information:

- Objective;
- Approach;
- Participants;
- Status;
- Cost; and
- Contact Person(s) for more information.

These projects are categorized by the five broad areas of the national ITS/CVO program:

- Safety assurance;
- Credentials administration;
- Electronic screening;
- Carrier operations; and
- Technical and organizational infrastructure.

Safety Assurance

	100/200 Motor Carrier Safety Assistance Program (MCSAP) Site Project
Objective	Provide electronic access to carrier safety data and driver license status from at least 100 MCSAP roadside sites by December 31, 1995, and from 200 sites by June 1997.
Approach	The project is developing and testing software to target inspection resources to carriers with unknown or poor safety records, to improve driver license status checks, and to record inspection results electronically at the roadside. It is being implemented in two phases. The 100-site requirement was met through the deployment of pen-based inspection systems and generic software (known as ASPEN) as part of the Roadside Data Technology Project (RDTP). The 200-site requirement will be met in conjunction with the development of the SAFER system (see description below).
Participants	32 states; Ontario; FHWA; and AAMVAnet, Inc.
Status	The 1994 Department of Transportation Appropriations Bill mandated that the electronic access be available at 100 sites by December 1995, and at 200 sites by mid-1997. The project is surpassing these milestones: 124 sites were operational by December 1995, and 192 by April 1996.
Cost	The total cost of the project is estimated at \$1.1 million for the software and algorithm development, and \$3.6 million for equipment deployment.
Contact	Tom Hillegass, HIA-10 FHWA -- Office of Motor Carriers Room 3104 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-4023 (202) 366-7298 (fax)

Safety Assurance (continued)

	Safety and Fitness Electronic Records (SAFER)	
Objective	Provide a link between existing and planned motor carrier safety information systems.	
Approach	The SAFER will provide access from fixed and mobile commercial vehicle inspection sites to the data residing within Federal and state motor carrier safety information systems, including SAFETYNET, the MCMIS, and the CDLIS. It will replace the periodic physical download of information with a more frequent electronic transmittal. The system will provide information pertaining to a carrier's safety fitness rating, roadside inspection history, and accident record. The system design will support other ITS applications such as automated screening and automated credentialing, making SAFER an authoritative source for motor carrier identification information.	
Participants	FHWA; Johns Hopkins University/Applied Physics Laboratory; AAMVAnet, Inc.; and Science Applications International Corporation.	
Status	The project began in June 1994, and is in the system design stage. The system is expected to be operational by late 1997.	
cost	The total project cost of \$5.9 million is funded by the FHWA.	
Contacts	<p>Tom Hillegass, HIA-10 FHWA Office of Motor Carriers Room 3104 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-4023 (202) 366-7298 (fax)</p>	<p>Kim Richeson Program Manager The Johns Hopkins University Applied Physics Laboratory Laurel, MD 20723-6099 (301) 953-6029 (301) 953-6149 (fax)</p>

Safety Assurance (continued)

	MCSAP Personnel Access to CDLIS
Objective	Provide roadside access to information on commercial driver's licenses and records.
Approach	AAMVAnet, Inc. is developing the capability for MCSAP personnel to access the Commercial Driver's License Information System (CDLIS) using microcomputer systems and the AAMVAnet communications system. This CDLIS access is built into the ASPEN vehicle inspection software on pen-based computers, and is available as a standalone application on laptop and desktop computers. The current system requires connection to a commercial telephone site. Experimentation with local wireless and data cellular communications is now underway.
Participants	FHWA and AAMVAnet, Inc.
Status	Operational.
cost	Not available.
Contact	Barry Goleman President and CEO AAMVAnet, Inc. 4301 Wilson Blvd., Suite 400 Arlington, VA 22203 (703) 522-1300 (703) 522-1553 (fax)

Safety Assurance (continued)

	I-95 Corridor Roadside Safety Project
Objective	Test the implementation of procedures and technologies that will enable state inspectors and enforcement officers to focus roadside inspections on high-risk carriers.
Approach	The project will test an information exchange system designed to help motor carrier enforcement officials focus roadside inspections and enforcement on high-risk motor carriers. The project will accelerate the deployment of pen-based and laptop computers and provide uniform training in their use to enforcement personnel in the Northeast; use these computers and specialized decision-support software to assist inspectors in the selection of carriers for inspection; use these computers and data entry software to streamline inspection procedures and reporting; establish roadside communication links to the Safety and Fitness Electronic Records (SAFER) system so that enforcement personnel have timely access to safety performance records; and pilot test the SAFER interstate mailbox system. The project will coordinate and leverage current state and FHWA safety initiatives, including the Commercial Vehicle Information Systems and Networks (CVISN) prototype and pilot projects, the SAFER program, and the Motor Carrier Safety Assistance Program (MCSAP).
Participants	I-95 Corridor Coalition (a consortium of more than 40 public and private sector organizations in the Northeast), and FHWA.
Status	Two-year operational test to begin in late 1997.
Cost	\$1.5 million.
Contacts	Christine Cox Administrative Manager I-95 Corridor Coalition, C/N 600 c/o New Jersey Department of Transportation Trenton, NJ 08625 (609) 530-4278 (609) 530-2092 (fax)

Safety Assurance (continued)

	I-95 Corridor Safety Management Project
Objective	Move toward a performance-based motor carrier safety compliance and management program that will reduce highway accidents and incidents in the I-95 corridor.
Approach	The project will develop a prototype of a comprehensive, performance-based motor carrier safety management program. The project will address and integrate carriers safety reviews, safety inspections focused on high-risk carriers and drivers, analyses of truck travel patterns and accidents, development of accident countermeasure programs, safety compliance assurance monitoring and reviews, and industry education and outreach initiatives.
Participants	I-95 Corridor Coalition (a consortium of more than 40 public and private sector organizations in the Northeast), and FHWA.
Status	Two-year operational test to begin in 1997.
cost	\$300,000.
Contacts	Christine Cox Administrative Manager I-95 Corridor Coalition, C/N 600 c/o New Jersey Department of Transportation Trenton, NJ 08625 (609) 530-4278 (609) 530-2092 (fax)

Safety Assurance (continued)

	Minnesota/Wisconsin Out-of-Service Verification Project
Objective	Evaluate a multistate system for verifying compliance with out-of-service orders issued following driver or vehicle safety inspections.
Approach	The system provides automated, real-time access from weigh-stations to a central database to inform inspectors about commercial vehicles and drivers that could be operating in violation of an out-of-service order. License plate scanners at inspection sites are used to collect data, which are compared with the database of current out-of-service vehicles. When a match is found, an alarm rings to inform inspectors. Vehicles in both states can be tracked through the system, enabling bi-state enforcement. The system may be extended to Michigan and Illinois.
Participants	Minnesota Guidestar; Minnesota Department of Public Safety; Wisconsin Department of Transportation; FHWA; University of Wisconsin; and Perceptics, Inc.
Status	Operational test began in July 1995, and will be completed in early 1997.
cost	Estimated at \$270,000, including \$216,000 in Federal funding.
Contact	Steve Crane, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-0950 (202) 366-7908 (fax)

Safety Assurance (continued)

	Idaho Out-of-Service Verification Project
Objective	Evaluate automated approaches to assure compliance with out-of-service orders issued following driver or vehicle safety inspections.
Approach	The system maintains surveillance of out-of-service drivers and vehicles, and notifies the State Police if there is a "runner." The system provides inspectors with 24-hour electronic monitoring and enforcement capabilities. A kiosk at the weigh station allows drivers to access the system and perform a qualified clear of an out-of-service order. The equipment has been field tested, and will be deployed at a fixed site in Idaho.
Participants	Idaho State Patrol, Idaho Transportation Department, FHWA, University of Idaho, Idaho National Engineering Laboratory, and Hughes Missile Systems Company.
Status	The project began in September 1994, and is expected to be completed in late 1997.
cost	The total project cost is estimated at \$1.2 million, including \$800,000 in Federal funding.
Contact	Steve Crane, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-0950 (202) 366-7908 (fax)

Safety Assurance (continued)

	Development, Evaluation, and Application of Brake Testing Devices	
Objective	Develop, evaluate, and implement automated brake testing devices.	
Approach	Several state inspection and enforcement agencies are testing a variety of brake devices in conjunction with Commercial Vehicle Safety Alliance inspections of heavy trucks and buses. These joint inspections, combined with daily use, training, and maintenance records, will provide data to evaluate the technologies. The technologies include roller dynamometers, flat-plate testers, infrared detectors, torsional devices, and decelerometers. MCSAP guidelines will be developed for the use of each technology. In addition, FHWA expects to produce brake performance standards and specifications for the manufacturing of this equipment.	
Participants	Colorado, Connecticut, Indiana, Maryland, Nevada, Ohio, Oregon, West Virginia, and Wisconsin; Ontario Ministry of Transportation; FHWA; National Highway Traffic Safety Administration (NITZ Vehicle Research Testing Center); and Battelle Memorial Institute.	
Status	The project began in September 1993, and is scheduled to be completed in September 1997.	
Cost	The total project funding is estimated at \$2.9 million, with \$1.5 million in Federal ITS funding.	
Contacts	Paul Alexander, HSA30 FHWA Office of Motor Carriers Room 3419 400 Seventh Street, SW Washington, DC. 20590 (202) 366-5881 (202) 366-7298 (fax)	Steven J. Shaffer Research Scientist Battelle Memorial Institute 505 King Avenue Columbus, OH 43201-2693 (614) 424-4960 (614) 424-3315 (fax)

Safety Assurance (continued)

	Automated Safety Assessment Program (ASAP)
Objective	Focus safety investigator workload on high-risk motor carriers; expedite the safety rating process.
Approach	The project is developing a system to automate the data collection required for carrier compliance reviews. Eligible motor carriers will be provided with menu-driven software that can be loaded into their own microcomputer systems to collect the necessary data. The data subsequently will be downloaded to the Office of Motor Carriers for cross-checking, analysis, and issuance of a safety rating.
Participants	FHWA, Volpe National Transportation Systems Center.
Status	The software development began in May 1995 and was completed in late 1996. A pilot test will take place in early 1997. The project completion is scheduled for October 1998.
cost	Total project cost of \$1.5 million is funded by the FHWA.
Contact	Ken Rodgers, HSA-10 FHWA Office of Motor Carriers Room 3419 400 Seventh Street, SW Washington, DC. 20590 (202) 366-4016 (202) 366-7908 (fax)

Safety Assurance (continued)

	Braking Analysis for Heavy Commercial Vehicle Collision Avoidance
Objective	Investigate the feasibility of adding automatic braking equipment to heavy commercial vehicles.
Approach	The project included brake performance modeling, development of design requirements, and fabrication and testing of prototype hardware. The program concluded with extensive test track work and a demonstration of the prototype system.
Participants	National Highway Traffic Safety Administration and the Eaton Corporation.
Status	The project began in March 1994, and was completed in December 1996.
cost	Total project cost of \$560,000, including \$450,000 in Federal funding.
Contact	Jeff Wood, NRD-53 NHTSA Room 6220 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-6826 (202) 366-7237 (fax)

Safety Assurance (continued)

	Onboard Brake Research and Testing	
Objective	Develop onboard brake monitoring systems.	
Approach	An onboard device is being designed to notify the driver of specific brake system problems and allow corrective actions to be taken. This project is part of a broader effort to establish a means of electronic communication between the tractor-trailer combination and the driver.	
Participants	FHWA, NHTSA, and Delco Electronics.	
Status	The project began in April 1995, and is scheduled for completion in September 1998.	
cost	Total project cost of \$500,000 is funded by the FHWA.	
Contacts	Kate Hartnan, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-2742 (202) 366-7908 (fax)	Jim Brittell, NRD-51 NHTSA Headquarters 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-5678 (202) 366-7237 (fax)

Safety Assurance (continued)

	Electronic Brake System	
Objective	Develop onboard brake monitoring systems.	
Approach	The project will test and evaluate an electronic, brake-by-wire system. It is anticipated that this system will reduce braking time and distance by 10 percent. The system also will send feedback to the driver on brake performance.	
Participants	FHWA, NHTSA, and Carnegie Mellon University.	
Status	The project began in late 1995. The completion date has not been determined.	
cost	Not available.	
Contacts	Kate Hartman, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-2742 (202) 366-7908 (fax)	Jim Brittell, NRD-51 NHTSA Headquarters 400 Seventh Street, SW Washington, DC. 20590 (202) 366-5678 (202) 366-7237 (fax)

Safety Assurance (continued)

	Black Box Development
Objective	Study the feasibility of placing a vehicle incident recorder on commercial vehicles for accident reconstruction.
Approach	The study will determine which vehicle functions should be monitored. It also will demonstrate how these functions could be used in accident reconstruction,
Participants	FHWA and Sandia National Laboratory.
Status	The project began in August 1995, and is scheduled for completion in December 1997.
cost	The total project cost of \$750,000 is funded by the FHWA.
Contact	Kate Hartman, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-2742 (202) 366-7908 (fax)

Safety Assurance (continued)

	Smart Cards in Commercial Vehicle Operations
Objective	Study the feasibility of a "Smart Card" system to enhance the security and utility of the commercial driver's license and the enforcement of hours-of-service regulations.
Approach	Smart Cards are credit card-sized plastic cards that contain a computer chip. The card can be used as a transportable and secure means for an individual to carry data between existing systems. The project examined three types of cards: Smart CDL that would include all information from a regular CDL; a financial services card to handle stored monetary value; and a vehicle card to carry vehicle identification, inspection, and fuel tax information. The three smart cards were developed and tested to determine the effectiveness of alternative technologies such as bar codes, magnetic stripes, and computer chips.
Participants	FHWA and 3-G International.
Status	The project began in September 1995, and was completed in December 1996.
cost	The total project cost of \$1 million is funded by the FHWA.
Contact	Kate Hartman, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-2742 (202) 366-7908 (fax)

Safety Assurance (continued)

	Driver Fatigue and Alertness Study	
Objective	Observe and measure the development and progression of driver fatigue and reduced alertness, and evaluate possible countermeasures.	
Approach	The systems would monitor the driver's status, detect degrades in performance due to fatigue, and provide a warning signal or other countermeasure. A total of 85 drivers from three motor carriers were recruited and monitored to construct a database of performance, physiological, and psychological data. The findings will be used to develop educational materials and to recommend changes in hours-of-service regulations.	
Participants	FHWA, Essex Corporation, ATA Foundation/Trucking Research Institute, Transport Canada, and individual motor carrier representatives.	
Status	The project began in 1989 and was completed in fall 1996.	
cost	The total project cost is \$4.5 million.	
Contact	Deborah M. Freund, HCS-30 FHWA Office of Motor Carriers Room 3107 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-5541 (202) 366-8842 (fax)	Clyde Woodle Executive Director Trucking Research Institute 2200 Mill Road Alexandria, VA 22314 (703) 838-1966 (703) 838-0291 (fax)

Safety Assurance (continued)

Onboard Driver Monitoring/Fitness-for-Duty Testing Study			
Objective	Test systems to monitor driver performance.		
Approach	The project installed lane tracking devices in 30 trucks owned by Schneider National Corporation and operated in San Diego, California. The devices monitor the driver's ability to keep the vehicle in its lane, which is considered to be a proxy for the driver's overall fitness for duty. The device notifies the driver and the carrier of performance deviations. Unsafe drivers are requested to stop the vehicle at the closest safe location and take a five-minute test that assesses the driver's ability to resume driving.		
Participants	FHWA; ATA Foundation/Trucking Research Institute; Schneider National Corporation; and Evaluation Systems, Inc.		
Status	The project began in July 1995, and is scheduled for completion in September 1998.		
cost	The total project cost of \$630,000 is funded by the FHWA.		
Contacts	<table border="0"> <tr> <td style="vertical-align: top;"> <p>Kate Hartman, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-2742 (202) 366-7908 (fax)</p> </td> <td style="vertical-align: top; padding-left: 20px;"> <p>Bill Rogers Trucking Research Institute 2200 Mill Road Alexandria, VA 22314 (703) 838-7912 (703) 838-0291 (fax)</p> </td> </tr> </table>	<p>Kate Hartman, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-2742 (202) 366-7908 (fax)</p>	<p>Bill Rogers Trucking Research Institute 2200 Mill Road Alexandria, VA 22314 (703) 838-7912 (703) 838-0291 (fax)</p>
<p>Kate Hartman, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-2742 (202) 366-7908 (fax)</p>	<p>Bill Rogers Trucking Research Institute 2200 Mill Road Alexandria, VA 22314 (703) 838-7912 (703) 838-0291 (fax)</p>		

Safety Assurance (continued)

	Heavy Vehicle Driver Workload Assessment
Objective	Develop workload evaluation protocols for heavy vehicles.
Approach	The project developed a capability to evaluate the effects of high-technology systems such as crash avoidance systems and navigation systems on driver safety performance. The project also developed standardized driver workload measurement protocols, collected baseline data, and evaluated several high-technology systems. Finally, the project identified aspects of system design and operation that can compromise safety.
Participants	National Highway Traffic Safety Administration and Battelle Memorial Institute.
Status	The project started in July 1991, and was completed in October 1995.
cost	Total cost of \$1 million funded by the NHTSA.
Contact	Michael Goodman, NRD-52 NHTSA 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-5677 (202) 366-7237 (fax)

Safety Assurance (continued)

	Prototype Heavy Vehicle Drowsy Driver Monitor Detection System
Objective	Develop, test, and evaluate a prototype in-vehicle system that continuously monitors driver alertness and detects drowsiness.
Approach	The project has two phases. The first phase developed detection algorithms and countermeasures to monitor driver performance and provide a warning signal to the driver. The second phase will devise and test a prototype system based on these findings.
Participants	National Highway Traffic Safety Administration; Carnegie Mellon Research Institute; and Virginia Polytechnic Institute and State University.
Status	The project began in July 1995. Phase I was completed in 1996; phase II is scheduled for completion in July 1997.
Cost	Total cost of \$1.2 million funded by the NHTSA.
Contact	Paul Rau, NRD-53 NHTSA Headquarters 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-5662 (202) 366-7237 (fax)

Safety Assurance (continued)

	Dynamic Downhill Truck Speed Warning System (DTSW)
Objective	Reduce the severity and frequency of downgrade truck accidents by increasing driver awareness of, and compliance with, safe downhill speeds.
Approach	The system is installed and operational on Interstate 70 west of the Eisenhower Tunnel. Vehicles are weighed and classified using weigh-in-motion and automatic vehicle classification technology. A safe speed is calculated based on the vehicle type, weight, road grade, and road condition. Variable message signs post the recommended speed.
Participants	Colorado Department of Transportation, Colorado Department of Public Safety, Colorado Port of Entry Division, FHWA, Colorado Motor Carriers Association, University of Colorado at Denver, and International Road Dynamics.
Status	The project began in June 1993. The system design and installation is complete. The evaluation was completed in 1996.
cost	Total project cost of \$243,000, with \$195,000 in Federal funding.
Contact	Richard Mango Colorado Department of Transportation 4201 East Arkansas Avenue Denver, CO 80222 (303) 757-5159 (303) 757-9727 (fax)

Credentials Administration

	I-95 Corridor Electronic Registration Project
Objective	Test the implementation of procedures and technologies that will enable state agencies and motor carriers to streamline credentials administration.
Approach	The project will test an information system designed to help state agencies streamline credentials administration. The project will enable motor carriers to register electronically with state motor vehicle agencies (or through third-party service providers). It also will provide a model deployment of an interstate registration clearinghouse, which will enable state motor vehicle agencies to exchange registration information and reconcile accounts among states. Finally, the project will coordinate and leverage current state and FHWA credentials administration initiatives, including the Commercial Vehicle Information Systems and Networks (CVISN) pilot test.
Participants	I-95 Corridor Coalition (a consortium of more than 40 public and private sector organizations in the Northeast) and FHWA.
Status	Two-year operational test to begin in 1997.
cost	\$1.25 million.
Contact	Christine Cox Administrative Manager I-95 Corridor Coalition, C/N 600 c/o New Jersey Department of Transportation Trenton, NJ 08625 (609) 530-4278 (609) 530-2092 (fax)

Credentials Administration (continued)

	Automated Mileage and Stateline Crossing Operational Test (AMASCOT)
Objective	Demonstrate and evaluate technology for automating data collection and mileage and fuel reports.
Approach	Six motor carriers with onboard global positioning systems (GPS) were monitored over the 48 contiguous states. The GPS tracked and updated truck positions, recording interstate border crossings to apportion actual mileage among states automatically. At the end of a trip, the data were processed by the carriers for submission to base jurisdictions for the International Fuel Tax Agreement (IFTA) and the International Registration Plan (IRE).
Participants	Departments of transportation in Iowa, Minnesota, and Wisconsin; FHWA; Iowa State University; Western Highway Institute; state motor truck associations; Rockwell International Corporation; and Rand McNally Corporation.
Status	The project began in January 1994, and was completed in December 1995.
cost	\$1.1 million.
Contact	Bill McCall Iowa Transportation Center 2521 Elmwood Drive, Suite 125 Ames, IA 50010-8263 (515) 294-8103 (515) 294-0467 (fax)

Credentials Administration (continued)

	New England Transportation Consortium (NETC) Oversize/Overweight Permitting Agreement
Objective	Enable motor carriers moving oversize and overweight vehicles to obtain one permit for travel in all participating states.
Approach	Any NETC member may issue permits for vehicles based in other consortium states. The issuing state collects a permit fee for each state through which the vehicle will travel, and distributes the fees to the other states. Vehicles are restricted to travel along a predetermined road network. NETC has defined an “envelope vehicle” to serve as the outward bound for both size and weight.
Participants	Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.
Status	Program has been in operation since 1985. It is possible that the emerging Northeast Oversize/Overweight Permitting Agreement (NOOPA) may absorb the NETC program.
cost	Not available.
Contact	Peter Morrill Motor Carrier Safety Vermont Department of Motor Vehicles 133 State Street Montpelier, VT 05603 802-828-2064 802-828-2037 (fax)

Credentials Administration (continued)

	Northeast Oversize/Overweight Permitting Agreement (NOOPA)
Objective	Enable motor carriers moving oversize and overweight vehicles to obtain one permit for travel in all participating states.
Approach	Under the proposed system, a motor carrier would apply for an oversize/overweight permit from the first NOOPA state that it enters. The issuing state would provide a permit that is valid in all NOOPA jurisdictions, and distribute the fee among the states in which the vehicle will travel. The permits would be valid only for a single trip, would be restricted to travel along Interstate highways, and would apply only to vehicles within predetermined size and weight limits.
Participants	Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Status	Under development.
cost	Not available.
Contact	Dee Strausser Motor Carrier Division Maryland State Highway Administration 7491 Connelly Drive Hanover, MD 21076 (410) 582-5727 (410) 787-5883 (fax)

Credentials Administration (continued)

	Southeastern States Permitting Agreement
Objective	Enable motor carriers moving oversized and overweight vehicles to obtain one permit for travel in all participating states.
Approach	A motor carrier must apply for a multistate permit through an authorized permit agent. The permit agent petitions each state in which the vehicle will travel, remits all fees on behalf of the carrier, and issues a single permit that is valid in all jurisdictions. Each state determines routing restrictions for oversized/overweight vehicles in its jurisdiction.
Participants	Alabama, Florida, Georgia, Kentucky, Louisiana, Michigan, Mississippi, North Carolina, Ohio, South Carolina, Tennessee, Virginia, and West Virginia.
Status	Operating since 1994; additional states are considering participation.
cost	Not available.
Contact	James Norman Truck Permit Office Louisiana Department of Transportation and Development 1201 Capitol Access Road Baton Rouge, LA 70802 (504) 237-1329 (504) 377-7108 (fax)

Credentials Administration (continued)

	Western Regional Agreement (WRA)
Objective	Enable motor carriers moving oversize and overweight vehicles to obtain one permit for travel in all participating states.
Approach	Participating states can issue permits and collect fees for all member jurisdictions. When regional permits are issued, the motor carrier pays the total fees for all states in which the truck will travel. Permit holders are restricted to a designated regional highway system.
Participants	Arizona, Idaho, Montana, Oregon, Utah, and Washington.
Status	Operating.
cost	Not available.
Contact	Barry Diseth Motor Carrier Services Washington State Department of Transportation 4511 Woodview Drive, SE. Olympia, WA 98504-7367 (206) 459-6426 (206) 438-7163 (fax)

Credentials Administration (continued)

	Alliance for Uniform Hazmat Transportation Procedures Pilot Test
Objective	Develop uniform procedures and forms for states that register and permit carriers of hazardous materials.
Approach	The Alliance is developing a base-state system similar to the International Fuel Tax Agreement (IFTA) or the International Registration Plan (IRP). Under this program, a motor carrier will conduct a review of a carrier's qualifications, and, if appropriate, will issue a permit that is valid in all participating jurisdictions. The motor carrier will pay a single registration fee to the base state, which will be responsible for distributing the fee to all states in which the carrier operates. Participating states will retain enforcement authority for hazardous materials transportation within their borders.
Participants	Minnesota, Nevada, Ohio, and West Virginia; National Governors Association; and National Conference of State Legislatures.
Status	Two-year pilot test began in 1996.
Cost	Not available.
Contact	Jay Kayne National Governors Association Hall of the States 444 North Capitol Street Washington, D.C. 20001 (202) 624-5300 (202) 624-5313 (fax)

Credentials Administration (continued)

	Carrier Registration System (CRS)
Objective	Develop a single on-line Federal system to serve as a cleaning house and depository of information on all foreign and domestic motor carriers, brokers, and freight forwarders, and others required to register with the DOT.
Approach	The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 mandated the development of the Single State Registration System (SSRS), a base-state system to administer interstate operating authority regulations. Following the sunset of the Interstate Commerce Commission (ICC) in early 1996, the U.S. DOT must consolidate the ICC's carrier registration, its own identification number system, the financial responsibility system, and the SSRS into a single carrier registration system (CRS) by May 1997. This system will include information on safety fitness and insurance coverage.
Participants	FHWA, all states that require operating authority or insurance registration for motor carriers.
Status	Under development.
cost	Not available.
Contacts	Tom Hillegass FHWA Office of Motor Carriers Room 3104 400 Seventh Street, SW Washington, DC. 20590 (202) 366-4023 (202) 366-7298 (fax)

Credentials Administration (continued)

Midwest States One-Stop Electronic Purchase Operational Test	
Objective	Increase state and carrier productivity by automating and integrating common motor carrier administrative functions.
Approach	The system enables carriers to apply for, pay for, and receive all necessary credentials electronically from either a base state or a trip-specific state. Motor carriers are able to purchase credentials electronically from their offices, permitting services, truck stops, or state agencies. The credentials included in the system are vehicle registration, fuel tax, insurance registration, and oversize/overweight permits. The system is designed to be easily deployable, low cost, and compatible with existing systems and practices.
Participants	Minnesota, Illinois, Iowa, Kansas, Missouri, Nebraska, South Dakota, and Wisconsin departments of transportation; FHWA; Western Highway Institute; AAMVAnet, Inc.; Lockheed Martin Information Management Systems; Rockwell International Corporation; and Iowa State University.
Status	Operational test is scheduled from run from August 1996 to July 1997. The final report will be used in fall 1997.
cost	\$2.4 million, including \$1.3 million in Federal funding.
Contact	Jeff Loft-us, HSA-20 FHWA ITS/CVO Division 400 Seventh Street, SW, Room 3419 Washington, D.C. 20590 (202) 366-4516 (202) 366-7908 (fax)

Credentials Administration (continued)

	Southwest States Electronic One-Stop Shopping (EOSS) Operational Test
Objective	Increase state and carrier productivity by automating and integrating common motor carrier administrative functions.
Approach	The operational test will automate and integrate common motor carrier administrative functions through the use of an expert system. The system analyzes credential applications to ensure that all requirements are met, and generates all necessary credentials at one time. The system provides a common credential data structure and an electronic data transfer function.
Participants	Colorado, Arkansas, Texas departments of transportation; FHWA; Western Highway Institute; InMotion, Inc.; and Arkansas State University.
Status	Operational test began in early 1996, and is scheduled for completion by summer 1997.
cost	\$734,000, including \$537,000 in Federal funding.
Contact	Jeff Loftus, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-4516 (202) 366-7908 (fax)

Credentials Administration (continued)

	Commercial Vehicle Information System (CVIS)
Objective	Improve commercial vehicle safety by denying registration to unsafe carriers. Mandated by the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991.
Approach	The CVIS provides the state agencies responsible for commercial vehicle registration with automated and timely access to information on the safety fitness of a carrier. In this manner, enforcement agencies can make recommendations to the registration agency regarding whether the registration should be suspended or revoked. The project is developing the SafeStat algorithm to evaluate the safety fitness of a carrier.
Participants	Iowa, Colorado, Indiana, Minnesota, and Oregon; FHWA; Volpe National Transportation Systems Center; Warren Dunham & Associates; AAMVAnet, Inc.
Status	System design is underway. The pilot test is scheduled for completion in early 1997.
Cost	\$9.5 million.
Contact	Bonnie Bass, HSA30 FHWA Office of Motor Carriers State Programs Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-0089 (202) 366-7298 (fax)

Credentials Administration (continued)

	Base State Working Group on Uniform Motor Carrier Programs (BSWG)
Objective	Provide technical assistance and funding to states entering the International Fuel Tax Agreement (IFTA) and the International Registration Plan (IRE). Created by the Inter-modal Surface Transportation Efficiency Act (ISTEA) of 1991.
Approach	The BSWG's initial work emphasized developing a strategy for encouraging states to join the IFTA and the IRP, and identifying "best practices" in use by member jurisdictions. The group commissioned nationwide surveys of automation capabilities among motor vehicle and revenue agencies. Recent efforts have emphasized the development of electronic data interchange (EDI) capabilities among IFTA and IRP members. The BSWG is conducting a pilot test of fuel tax data sharing via EDI among six states: Colorado, Iowa, New Mexico, North Carolina, South Carolina, and Utah.
Participants	The BSWG includes representatives of 16 state agencies responsible for commercial vehicle registration and fuel tax administration; the FHWA; HELP, Inc.; the American Association of Motor Vehicle Administrators (AAMVA); Federation of Tax Administrators; the National Governors Association, and the National Conference of State Legislatures.
Status	Ongoing meetings and research.
cost	\$500,000 per year ceiling authorized in the ISTEA.
Contact	Thorn Rubel National Governors Association Hall of the States 444 North Capitol Street Washington, D.C. 20001 (202) 624-5300 (202) 624-5313 (fax)

Credentials Administration (continued)

	Regional Processing Center
Objective	Process fuel tax applications and tax reports for multiple jurisdictions.
Approach	The system will support all International Fuel Tax Agreement (IFTA) transactions among its member states and between states and carriers. The system will deposit tax return remittances and capture return data; compute returns, identify liabilities, and provide for corrections; capture data from incoming fee transmittals; identify liabilities between participants and provide for funds transfer; and print and mail returns and notices.
Participants	New York State Department of Taxation and Finance and 16 other IFTA jurisdictions.
Status	Under development.
cost	Not available.
Contact	John Goggin Director, Systems Development & Production State of New York Department of Taxation and Finance WA Harriman Campus Albany, NY 12227 (518) 457-4304 (518) 457-6860 (fax)

Credentials Administration (continued)

	IFTA Clearinghouse
Objective	Improve interstate transactions among member jurisdictions of the International Fuel Tax Agreement (IFTA).
Approach	A multistate clearinghouse will allow IFTA member jurisdictions to access a single database to process tax returns, calculate fees, transfer funds, resolve discrepancies, and manage supporting information. Each state would transmit information and fees to the clearinghouse, which periodically would summarize account information, compute the net fees due to each jurisdiction, and distribute the information and fees to participating states. The clearinghouse eventually will be linked to the core infrastructure for the Commercial Vehicle Information Systems and Networks (CVISN).
Participants	IFTA, Inc. is managing the development of the clearinghouse with support from the FHWA and RS Information Systems. Five states will participate in a pilot test: Colorado, Maryland, North Carolina, Utah, and Virginia.
Status	The clearinghouse concept was approved by the IFTA board in April 1996. Each member jurisdiction must approve its own participation. The clearinghouse is expected to be operational among the pilot states early in 1997, and will expand to other IFTA jurisdictions by the end of 1997.
cost	\$750,000.
Contacts	Bob McKee Executive Director IFTA, Inc. 40 North Central Avenue, Suite 2250 Phoenix, AZ 85004 (602) 839-4382 (602) 839-0821 (fax)

Credentials Administration (continued)

	IRP Clearinghouse	
Objective	Improve interstate transactions among member jurisdictions of the International Registration Plan (IRE).	
Approach	A multistate clearinghouse will allow IRP member jurisdictions to access a single database to process mileage reports, calculate fees, transfer funds, resolve discrepancies, and manage supporting information. The initial capabilities will focus on netting fees across states and electronic exchange of recaps and transmittals. Eventually, the clearinghouse may add other functions such as electronic auditing. The clearinghouse eventually will be linked to the core infrastructure for the Commercial Vehicle Information Systems and Networks (CVISN).	
Participants	The American Association of Motor Vehicle Administrators (AAMVA) is developing the clearinghouse, with support from RS Information Systems. Eleven states are participating in a pilot test of the clearinghouse: Alabama, Arizona, Arkansas, California, Florida, Maryland, Nevada, New York, North Carolina, Virginia, and West Virginia.	
Status	The clearinghouse concept was approved by the IRP board in early 1996. Each member state must approve its own participation. A one-year pilot test is expected to begin in October 1996; additional states may join after the first few months of operation.	
cost	\$750,000.	
Contacts	Charlie Katz AAMVA 4301 Wilson Boulevard, Suite 400 Arlington, VA 22203 (703) 522-4200 (703) 522-1553 (fax)	Stan Kelly President IRP, Inc. 4301 Wilson Boulevard, Suite 400 Arlington, VA 22203 (703) 908-5765 (703) 522-1553 (fax)

Electronic Screening

	Heavy-vehicle Electronic License Plate (HELP) Program/Crescent Demonstration
Objective	Demonstrate various approaches to automated weight inspection and credentials verification at weigh stations and ports-of-entry.
Approach	The HELP program designed an integrated heavy-vehicle monitoring system using automatic vehicle identification (AVI), automatic vehicle classification (AVC), and weigh-in-motion (WIM) technologies. The test phase of HELP, known as the Crescent Demonstration, instrumented 32 sites along Interstates 5 and 10 from British Columbia to Texas. Data gathered by the roadside readers were processed by a central computer. States governments used these data for credentials verification, weight enforcement, and planning information. The motor carrier industry used these data to assist with fleet management.
Participants	State departments of transportation in Arizona, California, Colorado, Idaho, Iowa, Minnesota, Nevada, New Mexico, Oregon, Pennsylvania, Texas, Utah, Virginia and Washington; British Columbia; FHWA; Transport Canada; the Port Authority of New York and New Jersey; 75 motor carriers; Lockheed Martin Information Management Systems.
Status	The project began in January 1991, and was completed in June 1994.
cost	The total cost of the Crescent demonstration was \$7.5 million, including \$5.9 million in Federal funds.
Contacts	Jim Gentner HELP, Inc. 40 N. Central Avenue, Suite 2250 Phoenix, AZ 850044451 (602) 252-1694 (602) 254-5524 (fax)

Electronic Screening (continued)

	HELP, Inc./PrePass
Objective	Implement an operational system for automated weigh station clearance.
Approach	Building on the results of the Crescent demonstration, a public/private corporation, HELP, Inc., was formed to finance and implement an operational system. HELP, Inc. proposed a menu of pay-per-use services to carriers and states. The PrePass automated clearance system is modeled after the HELP/Crescent system. It uses AVI, AVC, and WIM technology linked through a central database. HELP, Inc. charges carriers \$1 each time one of their trucks is cleared through a weigh station using this service.
Participants	Arizona, California, and New Mexico have begun offering the PrePass service. Minnesota, Montana, Oregon, Texas, Utah, Washington, and Wyoming also are represented on the HELP, Inc. board. Other participants include representatives of the motor carrier industry and Lockheed Martin Information Management Systems.
Status	HELP, Inc. was formed in 1993. Its target is to offer PrePass services at least 35 weigh stations in the 11 HELP member states in 1997.
cost	Not available.
Contacts	Jim Gentner HELP, Inc. 40 N. Central Avenue, Suite 2250 Phoenix, AZ 850044451 (602) 252-1694 (602) 254-5524 (fax)

Electronic Screening (continued)

	Advantage CVO Mainline Automated Clearance System (MACS)	
Objective	Screen commercial vehicles at weigh stations along Interstate 75 from Ontario to Florida.	
Approach	The project will install its Mainline Automated Clearance System (MACS) at 30 weigh stations along the corridor. The MACS system identifies and weighs a vehicle equipped with a transponders, verifies vehicle credentials, writes an information packet to the transponders, and signals the vehicle either to proceed or to pull into the station. The system is decentralized and distributed; although a state may accept the weigh data written to the transponders by an upstream state, each state is responsible for verifying that the truck meets its unique weight and credential requirements. About 4,500 trucks are being equipped with transponders.	
Participants	Kentucky, Florida, Georgia, Tennessee, Ohio, and Michigan; Ontario; FHWA; Transport Canada; American Trucking Associations; National Private Truck Council; National Automobile Transporters Associations; provincial and state motor truck associations along the corridor; individual for-hire carriers and private fleets; Kentucky Transportation Center; Iowa State University; General Motors/Hughes Electronics; and Science Applications International Corporation.	
Status	The Advantage CVO Partnership was established in 1990; an l&month operational test began in late 1995.	
cost	Total cost of \$17.5 million, including \$8.4 million in Federal funding.	
Contact	Joe Crabtree Director University of Kentucky Kentucky Transportation Center 176 CE/KTC Bldg. Lexington, KY 40506-0281 (606) 257-4513 (606) 257-1815 (fax)	Doug McKelvey, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, DC 20590 (202) 366-9246 (202) 366-7908 (fax)

Electronic Screening (continued)

	Port-of-Entry Advanced Sorting System (PASS)
Objective	Test mainline sorting for commercial vehicles at Oregon's Ashland port-of-entry on Interstate 5.
Approach	The project integrated AVI, AVC, WIM, and onboard computers to identify, weigh, and classify heavy vehicles in advance of weigh stations and ports-of-entry. Legally operating vehicles were directed, by the use of an in-vehicle device, to bypass the port and the static scale weighing process, resulting in time savings for both the carrier and the port personnel.
Participants	Oregon DOT, FHWA, motor carriers.
Status	The project began in June 1992, and was completed in December 1996.
Cost	Total cost of \$572,000, including \$350,000 in Federal funds.
Contact	Milan Krukar ITS/CVO Manager Oregon Department of Transportation Transportation Development Branch Mill Creek Office Park 555 Thirteenth Street, NE Salem, OR 97310 (503) 9863472 (503) 986-3469 (fax)

Electronic Screening (continued)

	Green Light Electronic Pre-Clearance Operational Test	
Objective	Automate commercial vehicle clearance, enforcement, and safety assurance activities in Oregon.	
Approach	Mainline automated clearance systems will be implemented at 15 sites on Oregon's major highways. These systems will allow compliant commercial vehicles to bypass weigh stations and ports-of-entry. Approximately 35 other enforcement sites will be equipped with weigh-in-motion devices and automatic vehicle identification systems to assist in identifying vehicles attempting to evade weigh stations. Safety enhancements will be installed in four locations to provide drivers with recommendations for safe operating speeds on steep downgrades, and to provide real-time road and weather information to state maintenance crews. The project will provide 5,000 free transponders to encourage motor carrier participation.	
Participants	Oregon DOT, FHWA, Oregon State University, Iowa State University, International Road Dynamics, and Walton & Associates.	
status	The project began in October 1994, and is scheduled for completion in April 2000.	
cost	Total program budget is estimated at \$25.5 million.	
Contacts	Ken Everet Oregon Department of Transportation Transportation Development Branch Mill Creek Office Park 555 Thirteenth Street, NE Salem, OR 97310 (503) 945-7938 (503) 986-3469 (fax)	Jeff Loftus, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 3664516 (202) 366-7908 (fax)

Electronic Screening (continued)

	Multijurisdictional Automated Preclearance System (MAPS)
Objective	Automate vehicle screening and clearance in four northwest states.
Approach	The four states will adapt technologies to make their vehicle screening and clearance activities interoperable with other systems, including Advantage CVO MACS and HELP PrePass. Using the technology developed in the Green Light operational test, Oregon will replace approximately 2,400 transponders previously distributed by Idaho and Utah. Oregon also will produce and loan the equipment necessary to retrofit and operate automated clearance sites along the I-84 corridor. Other sites will be added to the system over time.
Participants	Idaho, Oregon, Utah, and Washington; FHWA; state motor truck associations.
Status	The system will become operational by March 1997 in Idaho and Utah, with other states following.
cost	Total project funding of \$300,000, split equally between the Federal government and the participating states.
Contacts	<p> Jeff Loftus, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-4516 (202) 366-7908 (fax) </p>

Electronic Screening (continued)

	I-95 Corridor Electronic Clearance Project
Objective	Demonstrate mainline electronic screening and clearance of commercial vehicles by mobile enforcement units.
Approach	The project will define the system requirements for electronic screening by mobile patrols and at fixed sites in the Northeast corridor. It will explore the use of both automatic vehicle identification and machine-vision camera systems that can read license plates or U.S. DOT numbers. It also will evaluate the potential for piggybacking clearance capabilities on electronic toll collection transponders. The initial development will take place at a fixed weigh station in Maryland or Virginia. Mobile equipment will be evaluated in several states within the corridor. The project will implement and evaluate the technology for widespread use in the corridor.
Participants	I-95 Corridor Coalition (a consortium of over 40 public and private sector organizations in the Northeast) and the FHWA.
Status	Two-year operational test to begin in 1997.
cost	\$300,000 in new funding, which will complement prototype funds for the Commercial Vehicle Information Systems and Networks (CVISN) and Eastern States Institutional Issues Study Phase II funds.
Contacts	Christine Cox Administrative Manager I-95 Corridor Coalition, C/N 600 c/o New Jersey Department of Transportation Trenton, NJ 08625 (609) 530-4278 (609) 530-2092 (fax)

Electronic Screening (continued)

	Michigan/Ontario International Border Clearance Project	
Objective	Enhance cross-border safety and efficiency by developing an automated system for international border clearance of commercial vehicles at a U.S.-Canadian crossing.	
Approach	Technologies will be developed and tested at a high-volume crossing, the Ambassador Bridge near Detroit. The systems will address transportation, toll, customs, and immigrations requirements.	
Participants	Michigan Department of Transportation; Ontario Ministry of Transportation; FHWA; Transport Canada; Detroit International Bridge Company.	
Status	Contract to be awarded February 1997; completion expected in 1998.	
cost	The estimated cost is \$2.3 million.	
Contacts	<p>Lee Jackson, HSA-20 FHWA ITS/ CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-4415 (202) 366-7908 (fax)</p>	<p>Jon Dierberger FHWA Office of Motor Carriers Federal Building 315 West Allegan Street, Room 205 Lansing, Michigan 48933-1514 (517) 377-1866 (517) 377-1804 (fax)</p>

Electronic Screening (continued)

	New York/Ontario International Border Clearance Project	
Objective	Enhance cross-border safety and efficiency by developing an automated system for international border clearance of commercial vehicles at a U.S.-Canadian crossing.	
Approach	Technologies will be developed and tested at a high-volume crossing, the Peace Bridge near Buffalo. The systems will address transportation, toll, customs, and immigrations requirements.	
Participants	New York Department of Transportation; Ontario Ministry of Transportation; FHWA; Transport Canada; Buffalo and Fort Erie Public Bridge Authority.	
Status	Contract to be awarded February 1997; completion expected in 1998.	
Cost	Estimated cost is \$2.3 million.	
Contacts	<p>Lee Jackson, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-4415 (202) 366-7908 (fax)</p>	<p>Carolyn Temperine FHWA Office of Motor Carriers Leo W. O'Brien Federal Building Seventh Floor Albany, New York 12207 (518) 431-4239 (518) 431-4208 (fax)</p>

Electronic Screening (continued)

	Washington State International Border Clearance Project
Objective	Enhance cross-border safety and efficiency by developing an automated system for international border clearance of commercial vehicles at a U.S.-Canadian crossing.
Approach	Technologies will be developed and tested at the border crossing between Washington State and British Columbia near Vancouver. The systems will address transportation, toll, customs, and immi-grations requirements.
Participants	Washington State Department of Transportation; British Columbia Ministry of Transportation; FHWA; Transport Canada.
Status	Contract to be awarded in 1997; completion expected in 1998.
cost	Estimated cost is \$1.5 million.
Contacts	Kate Hartman, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-2742 (202) 366-7908 (fax)

Electronic Screening (continued)

	Texas International Border Clearance Project
Objective	Enhance cross-border safety and efficiency by developing an automated system for international border clearance of commercial vehicles at U.S.-Mexican crossings.
Approach	Technologies will be developed and tested at two high-volume crossings in Laredo and El Paso, Texas. The systems will address transportation, toll, customs, and immigrations requirements.
Participants	Texas Department of Transportation; FHWA.
Status	Contract to be awarded spring 1996; completion expected in 1998.
cost	Estimated cost is \$2.5 million.
Contacts	Lee Jackson, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 3664415 (202) 366-7908 (fax)

Electronic Screening (continued)

Expedited Processing and International Crossing (EPIC) Operational Test			
Objective	Demonstrate an electronic trip clearance system to accelerate commercial vehicle traffic through the Nogales, Arizona border crossing.		
Approach	The project will expedite commodity movements through extensive use of electronic data interchange and the automation of manual processes currently used to monitor commercial vehicle movements at the border. System components will include integrated screening for the cargo, vehicle, and driver; license plate recognition and vehicle-to-roadside communications; electronic cargo seals; traffic management systems; and methods to reduce institutional and legal barriers.		
Participants	Arizona Department of Transportation; FHWA; Immigration and Naturalization Service; U.S. Customs Bureau; SCT; Mexican Customs and Immigration; Western Highway Institute; Lockheed Martin Information Management Systems; Farradyne; and JHK & Associates.		
Status	The project began in late 1995, and is scheduled to be completed in 1997.		
cost	Estimated cost is \$2.2 million.		
Contacts	<table border="0"> <tr> <td>Lee Jackson, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-4415 (202) 366-7908 (fax)</td> <td>Alan Hanson FHWA Office of Motor Carriers 234 North Central Avenue, Suite 305 Phoenix, Arizona 85004 (602) 379-6851 (602) 379-3608 (fax)</td> </tr> </table>	Lee Jackson, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-4415 (202) 366-7908 (fax)	Alan Hanson FHWA Office of Motor Carriers 234 North Central Avenue, Suite 305 Phoenix, Arizona 85004 (602) 379-6851 (602) 379-3608 (fax)
Lee Jackson, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-4415 (202) 366-7908 (fax)	Alan Hanson FHWA Office of Motor Carriers 234 North Central Avenue, Suite 305 Phoenix, Arizona 85004 (602) 379-6851 (602) 379-3608 (fax)		

Electronic Screening (continued)

International Border Electronic Crossing (IBEX) Operational Test			
Objective	Demonstrate an electronic trip clearance system to accelerate commercial vehicle traffic through the Otay Mesa, California border crossing.		
Approach	The system will address intermodal bulk container transportation on trailers from the port of Los Angeles to assembly plants in Mexico. System components will include automatic vehicle identification, automatic vehicle classification, automatic credential verification, vehicle and cargo monitoring, and safety and environmental monitoring. The system design will accommodate both HELP and Advantage CVO clearance technologies.		
Participants	CALSTART, Inc.; FHWA; Port of Los Angeles; Southern California Partnership; Iowa State University; and Scientific-Atlanta.		
Status	The project began in late 1995, and is scheduled to be completed in 1997.		
Cost	Estimated cost is \$2.3 million.		
Contacts	<table border="0"> <tr> <td>Lee Jackson, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 3664415 (202) 366-7908 (fax)</td> <td>Susan Seckler FHWA Office of Motor Carriers 201 Mission Street, Suite 2100 San Francisco, California 94105 (415) 744-3088 (415) 744-2665 (fax)</td> </tr> </table>	Lee Jackson, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 3664415 (202) 366-7908 (fax)	Susan Seckler FHWA Office of Motor Carriers 201 Mission Street, Suite 2100 San Francisco, California 94105 (415) 744-3088 (415) 744-2665 (fax)
Lee Jackson, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 3664415 (202) 366-7908 (fax)	Susan Seckler FHWA Office of Motor Carriers 201 Mission Street, Suite 2100 San Francisco, California 94105 (415) 744-3088 (415) 744-2665 (fax)		

Electronic Screening (continued)

	Advanced Technologies for International and Intermodal Ports of Entry (ATIPE) Operational Test
Objective	Improve the efficiency of the border clearance process at the Santa Theresa, New Mexico international port.
Approach	The project will use an information system including global tracking. It will focus on intermodal freight movements at the facility.
Participants	New Mexico Department of Transportation, FHWA, and Sandia National Labs.
Status	Completion is expected in 1998.
cost	Estimated cost is \$1.5 million.
Contacts	Michael Onder ITS/CVO Coordinator U.S. DOT Joint Program Office for Intelligent Transportation Systems 400 7th Street, SW Washington, D.C. 20590 (202) 366-2639 (202) 366-7908 (fax)

Carrier Operations

	Commercial Vehicle Fleet Management and Information Systems
Objective	Define the role of the Federal ITS program in fleet management and intermodal freight movement.
Approach	The project is being conducted in two phases. The first phase conducted case studies and interviews with fleet managers, dispatchers, and drivers to identify commercial and public fleet management problems and needs that might be addressed through advanced technologies. Functions that were analyzed include dispatching, routing, tracking, scheduling, maintenance management, and administrative operations. The project assessed the feasibility and requirements of potential technologies, and recommended the areas that warrant public sector involvement. The second phase will assess the role of the Federal ITS program in intermodal freight movement.
Participants	FHWA; Cambridge Systematics, Inc.; ATA Foundation; National Private Truck Council.
Status	The project began in September 1993, and is scheduled for completion in June 1997.
cost	The total project cost is \$405,000.
Contact	Gene McHale, HSR-10 FHWA Turner Fairbanks Highway Research Center 6300 Georgetown Pike McLean, VA 22101 (703) 285-2973 (703) 285-2264 (fax)

Carrier Operations (continued)

	TruckDesk
Objective	Test the feasibility of enhancing motor carrier safety and operational efficiency by providing information that will improve carrier routing and dispatching.
Approach	The project will test an automated traveler information system for commercial vehicle dispatchers and drivers. The system will provide them with the information on congestion, incidents, weather, and routing that is necessary to meet the demands of shippers and receivers in the Northeast for fast, timely, and reliable goods delivery. The project will develop a public/private partnership that will act as a value-added repackager of travel information for motor carriers. TruckDesk will gather information on highway conditions and travel in the corridor; organize the information; and make it available to dispatchers and drivers using a range of communication technologies. The project also will investigate the market for subscription and pay-per-use information technologies.
Participants	I-95 Corridor Coalition (a consortium of more than 40 public and private sector organizations in the Northeast), FHWA, and the ATA Foundation.
Status	Two-year operational test began in late 1996.
cost	\$1 million.
Contact	Christine Cox Administrative Manager I-95 Corridor Coalition, C/N 600 c/o New Jersey Department of Transportation Trenton, NJ 08625 (609) 530-4278 (609) 530-2092 (fax)

Carrier Operations (continued)

	Operation Respond		
Objective	Provide rapid, accurate information on freight cargo following accidents or spills.		
Approach	The project is being designed to speed the exchange of critical information during the initial response to hazardous materials accidents. The project is establishing computerized information systems linking emergency responders and participating railroads and motor carriers. The information provided will enable emergency responders to assess a situation and rapidly take appropriate actions, ensuring the safety of the public and on-scene personnel. Tests are underway in Contra Costa County, California; Atlanta, Georgia; New Orleans, Louisiana; Detroit, Michigan; Buffalo and Niagara Falls, New York; and Houston and Laredo, Texas.		
Participants	FHWA, Federal Railroad Administration, Research and Special Projects Administration, Texas Transportation Institute, and individual motor carriers and railroads.		
Status	The project began in April 1995, and is scheduled for completion in June 1997.		
cost	The total project cost is \$3.0 million, including \$1.5 million in Federal ITS funding.		
Contacts	<table border="0"> <tr> <td>Daniel Collins Operation Respond Institute 50 Massachusetts Avenue, NE Box GEKE 10 Washington, D.C. 20002 (202) 906-2770</td> <td>Lee Jackson, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 3664415 (202) 366-7908 (fax)</td> </tr> </table>	Daniel Collins Operation Respond Institute 50 Massachusetts Avenue, NE Box GEKE 10 Washington, D.C. 20002 (202) 906-2770	Lee Jackson, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 3664415 (202) 366-7908 (fax)
Daniel Collins Operation Respond Institute 50 Massachusetts Avenue, NE Box GEKE 10 Washington, D.C. 20002 (202) 906-2770	Lee Jackson, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 3664415 (202) 366-7908 (fax)		

Carrier Operations (continued)

	Hazardous Materials Fleet Management and Data Monitoring System (Tranzit Xpress/Hazmat FMMS)	
Objective	Demonstrate a vehicle fleet management and data monitoring system using advanced technologies to improve the safety and productivity of hazardous materials transportation.	
Approach	The system will apply automated emergency response information technologies to identify the contents of hazardous materials shipments carried by motor carriers; link systems that identify, store, and allow retrieval of data for emergency response to incidents involving hazardous materials transportation; and provide information, either directly or through links to other systems, to facilitate the appropriate response to incidents involving hazardous materials shipments. A pilot test is underway in northeastern Pennsylvania along the Interstate 81 corridor. An additional phase of work will take place near the Port of Los Angeles.	
Participants	National Institute for Environmental Renewal (NIER), Pennsylvania Department of Transportation, FHWA, PAR Government Systems Corporation, and Pennsylvania State University.	
Status	The project began in October 1995, and is scheduled for completion in December 1997.	
cost	\$4.0 million, with \$1.5 million in Federal ITS funding supplemented by a grant from the U.S. Department of Housing and Urban Development to NIER.	
Contacts	Patricia Acker NIER 1300 Old Plank Road Mayfield, PA 18433 (717) 282-0302 (717) 282-3381 (fax)	Lee Jackson, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-4415 (202) 366-7908 (fax)

Technical and Organizational Infrastructure

	Commercial Vehicle Information Systems and Networks (CVISN)	
Objective	Provide technical framework for implementing CVO information systems and electronic data interchange.	
Approach	The CVISN initiative will develop a national CVO information systems architecture, as well as standards, protocols, and unique identifiers to facilitate electronic communication. The architecture is being developed and deployed in multiple stages. The elements of the network have been defined; technical work is underway to develop standards and demonstrate the capabilities. The architecture will be finalized once it has been aligned with the national ITS architecture. A prototype test in Maryland and Virginia, which began in early 1996, will demonstrate the technology and refine the operational concept. A pilot test involving eight states began in late 1996. The pilot test will deploy a "core infrastructure" of multistate information systems and clearinghouses.	
Participants	Maryland, Virginia, California, Colorado, Connecticut, Kentucky, Michigan, Minnesota, Oregon, and Washington; FHWA; Johns Hopkins University Applied Physics Laboratory; RS Information Systems; Cambridge Systematics, Inc.	
Status	Prototype test began in early 1996; pilot test began in late 1996.	
cost	Total cost of \$23 million.	
Contact	Michael Curtis, HSR-13 FHWA Turner-Fairbank Highway Research Center 6300 Georgetown Pike McLean, VA 22101 (703) 285-2991 (703) 285-2264 (fax)	Kim Richeson Program Manager The Johns Hopkins University Applied Physics Laboratory Laurel, MD 20723-6099 (301) 953-6029 (301) 953-6149 (fax)

Technical and Organizational Infrastructure (continued)

	CVO Institutional Issues Studies
Objective	Identify the institutional barriers to the deployment of ITS/CVO programs in each state, and recommend strategies to overcome these barriers.
Approach	In the first phase, the FHWA made \$50,000 grants available to each state to document current motor carrier administration and enforcement procedures; identify opportunities for the application of ITS technologies to CVO; identify institutional barriers and strategies; and support a public/private, multi-agency working group to provide study oversight and direction. States were encouraged to participate in multistate studies. Based on the results of these initial studies, the FHWA made additional grants available for states to work cooperatively toward the development and deployment of specific ITS/CVO services.
Participants	Phase I: 49 states, with 37 participating in multistate projects (Southeast, Eastern States, COVE/Southwest, Western States, Northern New England, Kansas/Nebraska, and North Dakota/South Dakota), and 12 undertaking individual projects (Alaska, California, Connecticut, Illinois, Indiana, Iowa, Massachusetts, Minnesota, Nebraska, Ohio, Rhode Island, and Wisconsin). Phase II: 30 states have received funding for this phase, including the Interregional Consortium in the Southeast and the Great Lakes; the Eastern States Consortium; the COVE group in the Southwest; the IOU group in the Northwest; and a Midwest team of Minnesota and Missouri.
Status	First-round studies are complete; second-round studies are underway.
cost	Phase I: \$2.5 million, entirely funded by the FHWA; Phase II: up to \$5.0 million, split evenly among the FHWA and participating states.
Contact	Jeff Loftus, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-4516 (phone); (202) 366-7908 (fax)

Technical and Organizational Infrastructure (continued)

	Mainstreaming Initiative
Objective	Organize and manage the development and deployment of ITS/CVO services.
Approach	The mainstreaming initiative is developing plans, policies, and projects at three levels: state, regional, and national. At the state level, states were provided grants to support interagency working groups, ITS/CVO business planning, outreach and education, and associated technical activities. Seven regions corresponding to the major trucking activity centers were provided grants to support regional forums, business planning, outreach, and technical activities. Funds also are supporting a regional program coordinator who will act as a “champion,” explaining the objectives, technologies, costs, and benefits of ITS/CVO to legislators, business, and the public.
Participants	FHWA; 33 states in seven forums (Northern States, Eastern States, Great Lakes, Southeast, Mississippi Valley, Northwest, and West); motor carrier industry.
Status	Initial grants were awarded in the fall of 1996. Business plans must be completed by March 1998.
cost	FY 1996 funding of \$2.26 million, with matching contributions required from each participating state; future funding levels have not been determined.
Contact	Jeff Loftus, HSA-20 FHWA ITS/CVO Division Room 3419 400 Seventh Street, SW Washington, D.C. 20590 (202) 366-4516 (202) 366-7908 (fax)

References

This appendix provides a guide to other relevant ITS/CVO planning documents.

<p>National ITS Program</p>	<p><i>Department of Transportation's ITS Projects Book</i>, prepared by the U.S. Department of Transportation ITS Joint Program Office, January 1997.</p> <p><i>National ITS Program Plan</i>, prepared by the U.S. Department of Transportation and ITS America, March 1995.</p>
<p>National ITS/CVO Program</p>	<p><i>Assessment of ITS/CVO User Services: ITS/CVO Qualitative Benefit/Cost Analysis</i>, prepared for the Federal Highway Administration by the ATA Foundation, Inc., June 1996.</p> <p><i>ITS/CVO Five-Year Plan</i>, prepared by the Federal Highway Administration, Office of Motor Carriers.</p> <p><i>ITS/CVO Strategic Communications and Outreach Plan</i>, prepared for the Federal Highway Administration by Walcoff & Associates, Inc., October 1, 1996.</p> <p><i>National ITS/CVO Program Requirements</i>, prepared for the Federal Highway Administration by Cambridge Systematics, Inc., August 1996.</p>

References (continued)

<p>Commercial Vehicle Information Systems and Networks</p>	<p><i>CVISN Guiding Principles</i>, prepared for the Federal Highway Administration by the Johns Hopkins University Applied Physics Laboratory, June 13, 1996.</p> <p><i>CVISN Operational Concept Document</i>, prepared for the Federal Highway Administration by the Johns Hopkins University Applied Physics Laboratory (Document No. POR-96-6989), June 28, 1996.</p> <p><i>CVISN Pilot Program Plan</i>, prepared for the Federal Highway Administration by the Johns Hopkins University Applied Physics Laboratory (Document No. POR-96-6990), September 30, 1996.</p> <p><i>CVISN Statement of Direction and Program Overview</i>, prepared for the Federal Highway Administration by the Johns Hopkins University Applied Physics Laboratory (Document No. POR-95-6982), December 28, 1995.</p> <p><i>ITS/CVO Activities Overview and Roadmap</i>, prepared for the Federal Highway Administration by the Johns Hopkins University Applied Physics Laboratory (Document No. POR-96-6984), May 1, 1996.</p>
<p>Mainstreaming Initiative</p>	<p><i>ITS/CVO Mainstreaming Program</i> (brochure), prepared for the Federal Highway Administration by Cambridge Systematics, Inc., August 1996.</p> <p><i>CVISN Model Deployment and Mainstreaming: How Do They Fit?</i>, prepared for the Federal Highway Administration by Cambridge Systematics, Inc., January 1997.</p> <p><i>Guidelines@ State ITS/CVO Business Plans</i>, prepared for the Federal Highway Administration by Cambridge Systematics, Inc., January 1997.</p>

List of Abbreviations

AADT	Annual Average Daily Trips
AAMVA	American Association of Motor Vehicle Administrators
AASHTO	American Association of State Highway and Transportation Officials
ABA	American Bus Association
AHS	Automated Highway Systems
AMASCOT	Automated Mileage and Stateline Crossing Operational Test
APTS	Automated Public Transportation Systems
ASAP	Automated Safety Assessment Program
ATA	American Trucking Associations
ATIPE	Advanced Technologies for International and Intermodal Ports of Entry Operational Test
ATIS	Advanced Traveler Information Systems
ATMS	Advanced Traffic Management Systems
AVC	Automatic Vehicle Classification
AVCSS	Advanced Vehicle Control and Safety Systems
AVI	Automatic Vehicle Identification
AVL	Automatic Vehicle Location

List of Abbreviations (continued)

BSWG	Base State Working Group on Uniform Motor Carrier Procedures
CDL	Commercial Driver's License
CDLIS	Commercial Driver's License Information System
CRS	Carrier Registration System
CVIS	Commercial Vehicle Information System
CVISN	Commercial Vehicle Information Systems and Networks
c v o	Commercial Vehicle Operations
CVSA	Commercial Vehicle Safety Alliance,
DMV	Department of Motor Vehicles
DOR	Department of Revenue
DOT	Department of Transportation
DSRC	Dedicated Short-Range Communication
DTSW	Dynamic Downhill Truck Speed Warning System
ED1	Electronic Data Interchange
EFT	Electronic Funds Transfer
EPIC	Expedited Processing and International Crossing Operational Test

List of Abbreviations (continued)

ETTM	Electronic Toll and Traffic Management
FHWA	Federal Highway Administration
FMMS	Hazardous Material Fleet Management and Data Monitoring System
FTA	Federation of Tax Administrators
GPS	Global Positioning Systems
GVWR	Gross Vehicle Weight Rating
Hazmat	Hazardous Materials
HELP	Heavy-vehicle Electronic License Plate
HVUT	Heavy Vehicle Use Tax
IBEX	International Border Electronic Crossing Operational Test
ICC	Interstate Commerce Commission
IEN	Information Exchange Network
IFTA	International Fuel Tax Agreement
IOU	Idaho/Oregon/Utah Regional Mainstreaming Project
IRP	International Registration Plan
ISS	Inspection Selection System

List of Abbreviations (continued)

ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITS	Intelligent Transportation Systems
ITS America	Intelligent Transportation Society of America
JHU/APL	Johns Hopkins University Applied Physics Laboratory
JPO	U.S. Department of Transportation Joint Program Office for Intelligent Transportation Systems
LCV	Longer-Combination Vehicle
MACS	Mainline Automated Clearance System
MAPS	Multijurisdictional Automated Preclearance System
MCMIS	Motor Carrier Management Information System
MCSAP	Motor Carrier Safety Assistance Program
MOOO	Multijurisdictional Oversize/Overweight Organization
MONY	Michigan/Oregon/New York International Border Clearance Operational Test
MPO	Metropolitan Planning Organization
MTA	Motor Truck Association
NAFTA	North American Free Trade Agreement
NCSL	National Conference of State Legislatures

List of Abbreviations (continued)

NETC	New England Transportation Consortium
NGA	National Governors' Association
NHTSA	National Highway Traffic Safety Administration
NIER	National Institute for Environmental Research
NOOPA	Northeast Oversize/Overweight Permitting Agreement
NPTC	National Private Truck Council
OBC	Onboard Computers
OMC	Office of Motor Carriers
OVIDA	Owner-Operators Independent Drivers Association
OOS	Out-of-Service
OS/OW	Oversize/Overweight
PASS	Port-of-Entry Advanced Sorting System
PUC	Public Utility Commission
RDTP	Roadside Data Technology Project
SAE	Society of Automotive Engineers
SAFER	Safety and Fitness Electronic Records

List of Abbreviations (continued)

SafeStat	Safety Status Measurement System
SSRS	Single State Registration System
TRANSCOM	Transportation Operations Coordinating Committee
U.S. DOT	United States Department of Transportation
VNTSC	Volpe National Transportation Systems Center
VRC	Vehicle-to-Roadside Communication
WIM	Weigh-in-Motion
WRA	Western Regional Agreement