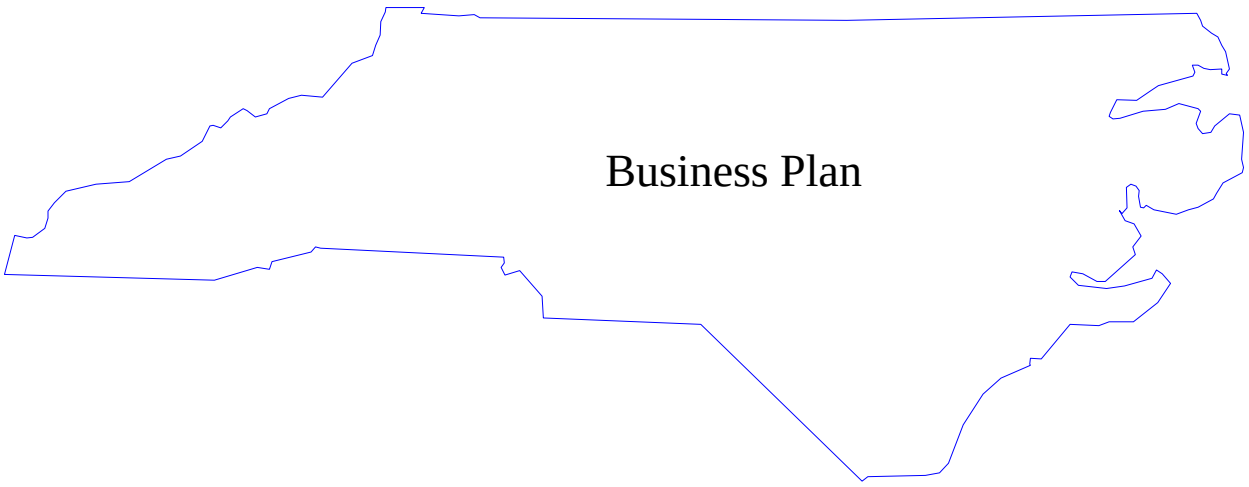
North Carolina
ITS/CVO



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Chapter 1: Executive Summary

Introduction

North Carolina is actively preparing and implementing systems to reengineer processes to better serve the public. Every two years each department submits strategic business plans that carefully evaluate strategic outcomes and performance measures. Each of the outcomes is linked directly to money appropriated in the budget.

The Department of Transportation has led the movement to automate information and capture data at the first generation. Commercial Vehicle Operations (CVO) are specifically targeted with the interface of all databases either complete or under development. The initial process linked reporting requirements to revenue compliance elements. This Fuel Tax Compliance System (FuelTaCS) is to have an overall cost of $11 million over seven years and is currently in the second of three phases.

The primary focus of the FuelTaCS is to link all CVO data systems and move the process to the Enforcement vehicle. This same structure will be further improved to implement the goals and objectives of the Commercial Vehicle Information Systems and Networks (CVISN) regional effort.

North Carolina is committed to the improvement of CVO administration, safety, productivity, and Enforcement.

North Carolina Mission Statement for Mainstreaming of the Commercial Vehicle Information Systems and Networks

"The North Carolina Department of Transportation will undertake the mission to develop, test, and deploy motor carrier technical support applications for the major CVO functions of Enforcement, administration, fleet/vehicle management, and safety."

This CVISN mission supports the overall strategic goals of the Department of Transportation to ". . . provide services in a manner which is safe . . ." ". . . promote economic vitality. . ." and be ". . . responsive to the public's needs."

Department of Transportation Goals that Support CVISN

- To assess, plan, and implement programs to address total transportation system needs.
- To provide user-friendly, courteous, and efficient transportation and motor vehicle services to the public.
- To protect the safety of the traveling public on our highways, as well as our employees in the workplace.
- To provide the transportation infrastructure necessary to support the economic vitality of the state.

Strategic Analysis

To build on existing progress the strategic analysis for FuelTaCS and CVISN model development which are combined in this document. The first is the process reengineering that resulted in development of the revenue compliance system. The second is the strategic analyses necessitated by CVISN elements common to other states of the region. Together, they agree on the following points:

Problems:

- North Carolina CVO traffic will continue to increase.
- Current regulatory approaches have increased administrative burdens on the trucking industry.
- There is pressure to reduce Enforcement and regulatory staff.
- Safety Enforcement is diluted among fewer Enforcement officers and increased responsibility.
- Transportation infrastructure conditions decline with an increased highway maintenance backlog.
- Tax compliance Enforcement benefits result from improved data analysis.

Opportunities:

- North Carolina's regulatory approach can be more unified.
- Higher technology options are available.
- Much of the current process can becomepaperless.
- The resulting improvements can improve industry acceptance.
- Safety can be maintained by targeting high-risk carriers.
- Registration and permitting can be streamlined.
- Tax compliance Enforcement benefits result from improved data analysis.

Projects

To address these opportunities, North Carolina's project array includes:

- Fully automating the credential, tax filing, and permitting process and participating in regional credential clearinghouses (CVISN and FuelTaCS).
- Automated "One-Stop" credentials for IRP, OW/OS, and fuel tax (CVISN).
- Making safety and credential information from national and regional information bases available to officers at the roadside (CVISN).
- Enabling inspection information to be uploaded from the roadside (FuelTaCS and CVISN).
- Increasing Enforcement officer presence on the highway network (CVISN).
- The CVO electronic clearance project with the states along the I-95 corridor (CVISN).
- Weigh station modernization (CVISN).
- Regional Institutional Issues Study with 14 other states (Mainstreaming).
- Regional ITS-CVO Business planning guidance for 13 other states (Mainstreaming).
-

Conclusion

The infusion of support from the CVISN initiative has widened the scope of automated processes developed as part of the FuelTaCS program. Improvements to technologies associated with CVISN expand the opportunities demonstrated in revenue Enforcement to include safety, commercial vehicle productivity, and administrative procedures. The healthy and cooperative examination of process improvements dissolve the dichotomies between programs and fuse their common goals. Regional cooperation ensures an encompassed cooperation of states by removing institutional barriers.

Chapter 2: Description of the State's Situation

Regional/External Factors

The Nation

There exists a climate for change in CVO among transportation professionals at the national level. The national initiative is aimed specifically at automating CVO. There are budget allocations targeted to reward further ventures in this area. The window of opportunity appears to be three to five years for the implementation of ITS/CVO improvements throughout the country.

The Region

North Carolina's membership in regional initiatives also provides a unique set of circumstances. The Inter-regional Institutional Issues Work Group and the Alliance CVO Mainstreaming for states in the southeast region overlap. Thus, a comparatively large informal association exists between the core states of the industrializing southeastern states. This association mirrors the economic reality of regional interaction, as the southeast continues to develop an integrated regional manufacturing system. As this system grows and freight movements mirror this situation, North Carolina will increasingly be a critical territory, spanning the space between the industrialized Northeast and the growing markets in the South.

The State

North Carolina's presence in the regional and national ITS/CVO community provides opportunities to expand the state and Department of Transportation goals of reengineering processes to improve employee productivity and service to the public. North Carolina's participation in the Mainstreaming initiative allows an economy of shared costs in the development of the systems and networks necessary to improve commercial vehicle operations.

Internal Context

FuelTaCS

The FuelTaCS initiative, begun by the current administration, has provided valuable input for evaluating process change in state government, including CVO. This initiative has provided much-needed analysis to support the technology-driven changes being encouraged by CVISN Model Deployment. *The FuelTaCS initiative provides upwards of $11 million to discover ways to improve revenue compliance and save the government $40 to $60 million per year.*

CVISN

The CVISN Model Deployment has the active support of the Secretary of Transportation and the Commissioner of the Division of Motor Vehicles (DMV). The state's CVO Enforcement processes are undergoing rapid review and change. Due to early deployment successes, the necessary resources to continue rapid deployment appear to be available. Nonetheless, North Carolina's array of CVISN investments will reflect its decisions about the most pragmatic mix to gain efficiency and improve CVO productivity.

Information Technology

The Department of Transportation has strong information technology capabilities. Most of the current software in use by the various DMV units was developed by employees qualified and knowledgeable of the departments' regulatory and Enforcement strategies. Thus, modifications are a relatively minor adjustment and can be programmed and planned much more readily. Further, whole areas of technical deployment do not rely on outside, uncontrolled forces for their successful conclusion.

Organizational Situation

The Department of Transportation is organized in such a way as to minimize the dispersion of authority, allowing projects to be coordinated and pursued in a more organized and cooperative way. However, this implies that a few key individuals will carry most of the responsibility for successful CVO project completion. It is only as the ITS/CVO change process is accepted and pursued by functional level staff that it will survive administrative changes.

Conclusion

Currently the state finds itself prepared to move forward with cooperative programs in the region and nation. A variety of projects and programs are already in operation. The goal of this document is to consolidate the success of existing programs and combine the single strategies into a comprehensive system that shares success and expands regionally.

Chapter 3: Mission and Vision of ITS/CVO for North Carolina

North Carolina's Mission for Commercial Vehicle Operations

"The North Carolina Department of Transportation will undertake the mission to develop, test, and deploy motor carrier technical support applications for the major CVO functions of Enforcement, administration, fleet/vehicle management, and safety."

This mission is nested within the larger mission of the North Carolina Department of Transportation , being:

- To assess, plan, and implement programs to address total transportation system needs.
- To provide user-friendly, courteous, and efficient transportation and motor vehicle services to the public.
- To protect the safety of the traveling public on our highways, as well as our employees in the workplace.
- To provide the transportation infrastructure necessary to support the economic vitality of the state.

North Carolina CVISN Goals

1. Reduce Administrative Burden

- Provide an administrative infrastructure that promotes efficiency in the CVO credential and regulatory process.
- Review and align existing administrative requirements within the region to ensure that North Carolina does not exceed the requirements of the other states.
- Provide "one-stop" credential services to CVO.
- Develop the capability to electronically receive and process:
  - credential applications
  - required reports
  - payment of fees and fines

2. Improve Highway Safety

- Identify carrier, driver, and vehicle factors that lead to unsafe commercial vehicle operations.
- Identify carriers and drivers that do not operate safely.
- Provide safety awareness programs and training.
- Remove unsafe operators from the highways.
- Access SAFESTAT data from the roadside for automated clearance.
- Upgrade weigh stations with modern safety inspection facilities and equipment.
- Provide electronic clearance for safe operators.
- Compute and report safety compliance data.

3. Enhance Commercial Vehicle Productivity

- Reduce regulatory and credential burden.
- Support "seamless border" process.
- Provide for "one-stop shopping" such that several locations in the state can meet all the state processing requirements for certified commercial operations within the state.
- Electronic clearance for commercial vehicle operators with excellent compliance records.

4. Improve Commercial Vehicle Enforcement

- Link registration process to safety record.
- Link all legacy data bases to provide "real-time" information and automated data entry at the roadside.
- Automate out-of-service orders to ensure compliance.
- Provide an "Alert" file to provide roadside data to officers to identify outstanding warrants, citations, fuel taxes, and fines.
- Develop vehicle and driver safety record screening to focus inspections on high risk carriers and operators.
- Electronic clearance of weight, hazard class, and permits for oversize and/or overweight loads.

Elements of the Vision

North Carolina's vision for ITS/CVO is composed of a series of explicitly defined elements, each of which can be used to evaluate individual projects in the state. These elements represent North Carolina's fundamental values and essential goals for the future. Following these CVO elements is a clarification of each one in turn. The elements are:

I. Improve and streamline CVO.

II. Conduct paperless CVO operations with timely, current, accurate, and verifiable electronic information while maintaining security and privacy.

III. Enhance CVO productivity, safety, and efficiency by eliminating unsafe and illegal operations and providing incentives for improved performance.

IV. Integrate and coordinate ITS operations.

I. Improve and streamline CVO.

Remaining focused on this element improves the quality of choices made between different operational and process alternatives.

Goal: Reduce administrative burden.

The objectives of this goal are to reduce the steps, paper, time, dollars, or people needed to fulfill a regulatory obligation by either the private or public sector.

II. Conduct paperless CVO with timely, current, accurate, and verifiable electronic information while maintaining security and privacy.

This element unifies the opportunities of paperless CVO for both the public and private sectors, posed in contrast to each other. The configuration of this goal statement emphasizes the necessity of keeping both concepts linked so that parallel benefits accrue to both the public and private sectors.

Goal: Reduce administrative burden.

The objectives are to convert current paper-based registration, permitting, and payment functions to electronic transfers without creating additional information requirements or compromising carriers' confidentiality.

III. Enhance CVO productivity, safety, and efficiency by eliminating unsafe and illegal operations and providing incentives for improved performance.

This element clarifies the relationship and usefulness of effective Enforcement at the roadside. Not only does the general public gain a safer system, those carriers that operate safely can expect increased efficiency by virtue of the ability of Enforcement to recognize and reward that performance. Similarly, Enforcement is both more effective and efficient by merit of a strategy that focuses attention on unsafe operators. All of this implies more effective training and consumer-friendly employees.

Goal: Improve highway safety and CVO Enforcement.

Objectives of these goals support the effort to reduce the rate and severity of crashes involving commercial vehicles in North Carolina, while lowering the time and dollar cost of compliance for safe carriers.

IV. Integrate and coordinate ITS operations.

Less immediately obvious, but perhaps more valuable in the long run, is the ITS/CVO integration with other ITS initiatives and other process improvement initiatives in North Carolina. Not only is the cross-feed between CVO projects still to be fully articulated, the benefits of cooperation and integration of the Congestion Avoidance and Reduction for Autos and Trucks (CARAT) alternate CVO routing system in Charlotte and FuelTaCS.

Goal: Maximize resources.

Prepare a statewide plan that shows how ITS/CVO is to support North Carolina's ITS vision and outline the most fruitful areas of future endeavor in ITS.

Chapter 4: Internal Strategic Analysis

Introduction

The first meeting of the ITS/CVO task group met in March, 1997, and reviewed the existing progress in North Carolina to reengineer processes that affect CVO. The Department of Transportation prepares a budget/strategic plan every two years as a management tool to account for budget expenditures and to define the direction of the department. Recent efforts have highlighted two important objectives that lay the groundwork to meet regional and national emphasis to reduce regulatory and credential burdens on the commercial vehicle industry. These are process engineering and revenue compliance.

Process engineering is a complete rethinking and redesigning of the way a job is performed or a service rendered. The goal is not to improve the process a few percentage points but to gain productivity in hundreds and thousands of percents.

The key is to design the process as though it never previously existed. It is not an improvement of form Y or element B, but a question of whether the form or procedure is needed at all. Rather simple ideas are considered on how to acquire information and move it through the organization with the latest technology. A common phrase is the need to "capture information once and at the source." In the Division of Motor Vehicles the title, registration, driver license, and other information was processed at the teller or examiner's work station and processed through checkers and clerks to insure the accuracy of the information.

This straight line review technique at DMV is time tested with the boast of few errors ever reaching the public. The technique is sequential from one "in-box" to another and is labor intensive. Sequential processing is what bureaucracy is all about with the strength of the outcome reflected in the weakest link in the chain. On the other hand, parallel processing is a major component of "process reengineering" and reflects a simultaneous review as opposed to sequential. The key to the process is to not automate accumulated experience.

It is important to note that technology is not the driving force in "procedure reengineering." It is instead a work design and organizational issue with technology, the **e**nabler tool.

Recent progress has been realized with the implementation of the State Title and Registration System (STARS) and the State Automated Driver License System (SADLS). Both move the process to complete and capture information at the point of the transaction. Data files are developed as customer information is entered by clerks and examiners at the initial level of contact.

Revenue Compliance has been at the forefront of recent efforts to improve and reengineer the process of collecting and monitoring the fees and taxes due the state of North Carolina's Department of Transportation. An automated system was developed to enhance the Enforcement of motor fuel tax laws. This fuel tax revenue compliance plan is identified with the acronym FuelTaCS.

This system is estimated to have an overall cost of $11 million over seven years of development and is expected to result in an annual increase of revenue of $40 million. The problem of fuel tax evasion is one of enormous fiscal implications for transportation agencies. It is also a serious matter in the marketplace, where legitimate commercial vehicle operators have found an unfair competitive advantage with operators that do not pay their taxes and can afford to undercut prices in the legitimate market.

Objectives met include:

- Generation of the Citation and Notice of Assessment form and capture of fuel tax information via the Citation and Sighting forms.
- Recording of all payments received in the field at weigh stations, district offices, and registration units, including partial payments.
- Generation of various reports, including cross-match reports.
- System adherence to the cash management rules and generation and storing of form letters within the correspondence system.
- Confirmation of payments in the DMV Fiscal Section that were recorded at the weigh stations.
- Maintenance of overweight citation information and maintenance and reporting of alert information pertinent to overweight citations.
- Creation and maintenance of installment plans.

Critical success factors include:

- Successful conversion of citation information.
- Collection of lessee and fuel tax information via citations and sightings.
- Provision of a data link to the Vehicle Registration System and Driver License System.
- Provision of front-end edits at the citation point of data entry.
- Provision of data entry capabilities at weigh stations and the Over Weight Citation headquarters.
- Recording of information previously maintained on “alpha cards.”
- Recording of collection attempt sequences and activity dates.
- Application of money received and automatic adjustment of balances.
- Provision to confirm payments made and recorded in the field.
- Application and reporting of cash management rules and reports.
- Provision to systematically review current and historical citation information.
- Streamlining of Enforcement work effort.

System Maintenance Requirements

- Customer Merge.
- Name and address enterprise.
- Customer release.
- On-line and batch program maintenance.
- Correspondence.
- Security - Analyze and document the current system where needed.

Phase II Requirements (currently under development)

- Provide on-going identification and resolution of problem areas.
- Provide remote real-time access to the FuelTaCS Alert information and Administrative Office of the Courts information from the Enforcement vehicle.
- Provide ability to enter and print citations, sightings, and receipts from the Enforcement vehicle.
- Provide a daily access to the:
  - Permit system for vehicle movement and oversize permit route.
  - Insurance verification system.
  - VISTA information for motor fuel tax fee.
- Provide a Fee Management System to encompass:
  - Functionality for the International Registration Plan.
  - Bad check processing.
  - Automatic feed of check information to the system for overpayment.
  - System generated receipts.
  - Additional purchase transactions.
  - Direct deposit for a designated pilot site.
- Expand the cross-match system to:
  - Integrated Tax Administration System (ITAS) data via EDI.
  - Receive VISTA data electronically.
  - Include IRP customers mileage.
- Obtain IFTA data transmittal electronically.

The ITS/CVO working group includes a representative from the Secretary of Transportation's office, Division of Highways, Division of Motor Vehicles, Motor Fuels Tax Office, and the Office of Management Information Services. A review of the strengths, weaknesses, opportunities, and threats (SWOT) to the CVO in North Carolina was evaluated. The opportunities and the threat of doing nothing were contrasted with the vision elements identified.

Vision Element	Opportunity	Threat
I. Streamline and improve CVO	• Uniform system direction • Better use of technology • Improved image	• High levels of truck traffic • Mission safety compromised
II. Paperless CVO	• Paperless environment • Better use of technology • Uniform system direction • High-risk safety targeting	• High levels of truck traffic • Mission safety compromised • Lower fuel tax collections
III. Improved safety performance	• High-risk safety targeting • Better use of technology • Improve image awareness • Improve carrier base	• Mission safety compromised • Considered “unfriendly”
IV. Integrate and coordinate	• Uniform system direction • Paperless environment • High-risk safety targeting • Better use of technology • Improve image	• Changing funding • Considered “unfriendly” • Mission safety compromised

Improve and Streamline CVO

The first vision element enables North Carolina to pursue opportunities in establishing a *systematic and uniform direction for CVO*. Such improvements will make *tax and other CVO application processes quicker and easier* for both the applicant and the administrator. This vision element also provides the opportunity *to use higher forms of technology* in improving CVO. Streamlined CVO based on higher forms of technology should help *reduce roadside delays* for commercial vehicle operators and Enforcement personnel. It is anticipated that improved and streamlined CVO will *improve North Carolina's image* as a proactive, technologically advanced, and customer-oriented state.

North Carolina believes that improving and streamlining the CVO is necessary in order to address *increased commercial vehicle traffic* on the State's roadways. While better and more efficient CVO present North Carolina with the chance to improve its image, it should be noted that process reengineering *will not compromise the State's highway safety mission.*

Conduct Paperless CVO Operations with Timely, Current, Accurate, and Verifiable Electronic Information, while Maintaining Security and Privacy

One of the primary opportunities of North Carolina's ITS/CVO initiative, the conduct of electronic CVO operations, allows the State to *use technology in higher capacity*. This will *help improve the current CVO application processes*. Furthermore, the development of this paperless application environment will help *ensure a systematic and uniform direction for CVO application processes.* The electronic application processes will provide real-time carrier economic regulatory and credential data which, coupled with timely carrier safety data, will assist Enforcement personnel in *targeting carriers which pose a high safety risk* on the State's roadways.

Conducting paperless CVO which emphasizes timely, current, accurate, and verifiable electronic information is attractive because it will allow administrators to effectively and efficiently *process the ever-increasing volume of carriers* moving through North Carolina. The data gathered will help the Department of Transportation *collect additional tax revenues* and help *reduce damage to the State's highway infrastructure.*

Enhance CVO Productivity, Safety, and Efficiency by Eliminating Unsafe and Illegal Operations and Providing Incentives for Improved Performance

North Carolina envisions an operational environment that emphasizes the detecting of motor carriers found operating in an unsafe and/or illegal manner. Conversely, safe carriers will see the amount of time spent in weigh station queues and inspection facilities reduced, saving the carrier money. By reducing unsafe and/or illegal carriers, the State will *reduce CMV-related crash costs and infrastructure damage*.

It is anticipated that these process refinements address the opportunities to use technology in a higher capacity to target high-risk carriers, while also improving industry awareness of highway safety issues and motor carrier safety regulations. Furthermore, by enhancing CVO productivity, safety, and efficiency, North Carolina stands to improve its image as a customer-oriented and safety-based state. Similarly, this will also promote just-in-time logistics, which are critical for attracting high-value manufacturing jobs. This may provide a climate suitable to increasing the state's motor carrier base.

Integrate and Coordinate ITS Operations

Governor Hunt's initiative to engineer a more responsive government has produced the change environment supportive of ITS/CVO deployment. The state office of Information Resource Management (IRM) coordinates information technology programs and systems to provide shared resources and coordinate state objectives *Uniform system direction* relies on coordination and a thorough integration of processes is necessary to fully realize a *paperless environment,* speeding up the *slow application process. Targeting high-risk carriers* demands that accurate information from a variety of sources be shared in a coordinated manner, so that *mission safety* is not *compromised*. The *higher use of technology* can emerge in an environment where all parties understand its role and usefulness. Successful implementations that reduce paperwork and Enforcement costs for carriers encourage all segments of the Enforcement community to act as a team to reward safe carriers. This will then *improve the image* externally of North Carolina and it will not be *considered unfriendly* by carriers.

Having a coherent plan for the implementation of improvements avoids *complicated and competing funding issues* for complementary ITS initiatives and each implementation leverages the resources invested in all other implementations. External grant applications are easier to generate when the overall logic and role of each component is fully understood and rationalized. The North Carolina charge to *avoid lost taxes* makes ITS "intelligent" and focuses deployment on the need to lower *crash costs* and *infrastructure damage.*

Conclusion

Although emerging at different times and with different purposes, North Carolina's ITS/CVO Vision Process and SWOT analyses combine to form a powerful rationale and framework for situating current projects and assessing the potential for deployment projects in the future. Each vision element is made more concrete by the specific opportunities, threats, and problems it speaks to. In the following chapter, existing North Carolina ITS/CVO projects are arrayed within this framework so that we may understand how well we currently are meeting our vision.

Chapter 5: Practices and Projects

Existing North Carolina Projects

North Carolina already has planned or has in place an array of complementary projects. In particular, the specific practices developed through the Fuel Tax Compliance System. Deployment plans call for the use of roadside data entry and linked information systems. The linking of information systems through FuelTaCS and the equipping of the Enforcement vehicles with PCs with secure wireless communication provides the structure to Credential Systems and Clearinghouse Interfaces.

Individual Project Concepts

Model Deployment

All the model deployment projects are part of a nationwide effort to create a coordinated information system for CVO. Consequently, all four portions are concerned to streamline CVO and also have as an important charge to integrate and coordinate with each other and other states. Beyond that there are some differences in emphasis.

Credentials and Carrier Systems

As part of CVISN Model Deployment, the credential projects are aimed primarily at reducing the time and labor costs of the permitting function. They involve automating the current paper-based registration process so that electronic information transfers can substitute for information and money currently transmitted through the mail. Successful deployment of this component is especially reliant on user-friendly software.

The state is planning to develop a Credentials Interface (CI) that will communicate with the Carrier Automated Transactions (CAT) or Web Interface on one hand and translate the information into a useable format for legacy systems on the other. Those legacy systems interfaces to be upgraded are:

- Oversize / Overweight
- Single State Registration
- NC Special Permitting (Temporary Authority)
- IFTA
- IRP

The Credentials System improvements will also include establishing a state web interface for the IRP, IFTA, and Overweight/Oversize, along with appropriate connections to the IFTA and IRP clearinghouses.

Clearinghouse Interfaces

Clearinghouse interface improvements concentrate on completing the information circuit with regional clearinghouses so that important tax and registration information about carriers can be shared between states. Thus, integration and coordination are the primary concerns of Clearinghouse Interface projects and user-friendliness is slightly less of a concern.

Safety Information Systems

Safety information system projects are designed to get current safety information to the roadside for immediate evaluation of carriers. The emphasis is on improving safety and rewarding safe carriers, regardless of whether or not the information ispaperless.

In its most simple form, the CVISN safety system involves the collection of safety information at the roadside, the forwarding of that information so that it can be aggregated with other information, and making that aggregated data available to those making screening decisions and conducting inspections. This process, while not requiring a real-time automated screening decision, is greatly limited without one.

The use of laptop computers arising from the FuelTaCS initiative has provided an existing platform for inspection purposes. While offering the mobile officer a greater degree of autonomy, the fixed sites can be more productive with networked workstations on which all weigh station operations will be integrated.

This offers several advantages. First, the workstation will not be dedicated to only one function, thereby permitting weigh station personnel greater flexibility in performing their duties. Second, the intended network architecture at the weigh station will offer better system reliability in the event one machine fails. Third, the workstations will offer generally improved communications between field and administrative personnel. Accordingly, laptop PCs can be expected to perform many associated functions such as automated citations and accident reporting.

Electronic Clearance

North Carolina supports the implementation of roadside clearance systems that emphasizes clearing safe carriers and weighing those who are pulled in for other reasons. This creates a system more user-friendly and reliant on good safety performance and information integration. Weigh-in-motion equipment at all weigh stations will add confidence to weight Enforcement and still provide "pass-through" clearance.

DMV Enforcement Initiative

The Enforcement initiative is important to the overall acceptance of ITS/CVO issues. A survey of the officers indicates a high level of acceptance of CVISN goals (Appendix 1). The implementation of any roadside effort relies on complete DMV Enforcement personnel for success.

Increased MVE Field Presence

The Enforcement Section of DMV recognized that part of the key to safer roads is an increased Enforcement presence on the roads. While this recommendation could be interpreted as a call to hire more personnel, it also encompasses the concept of more efficient Enforcement processes that concentrate existing resources on the unsafe carrier.

Increased MVE Audit Staff

Similarly, the ability to effectively monitor the safe carrier is augmented by additional staff. Again, however, the recommendation is not contradicted by CVO that make existing staff more effective by providing them better, faster access to more reliable information.

Modify OS/OW Penalty System

This recommendation is aimed more at policies that help Enforcement to operate more effectively, so it is an integration of a different kind. Nevertheless, detection of unsafe operators is meaningless without appropriate penalties.

Tax and Fee Collections

Antiquated systems are costly to both Enforcement and carriers in time and money. The attention to improve these processes has far-reaching benefits.

Fewer and Simpler Forms

This is implied in the CVISN Credentials project, but not stated explicitly. As a process improvement, it deserves separate consideration.

Cross-Train Staff

While process improvements often take the form of new configurations of people and technology, few recognize the need for versatile staff that can accommodate the increasing rate of change. This recommendation does that.

Regulation Uniformity with Other States

This recommendation, while broadly stated, is aimed at improving the operational climate for carriers by reducing the complex of regulations faced by them.

Mainstreaming

Mainstreaming is an activity supporting CVISN Deployment and concentrates on the sharing of knowledge and the development of plans for the implementation of ITS/CVO projects across the country.

Institutional Issues Working Group

This group of states has engaged in a protracted process of finding research projects to support ITS/CVO generally and CVISN more particularly. Currently, the working group is engaged in setting a common format for credential information exchange between member states.

Statewide ITS Business Plan

This is an effort to coordinate all ITS efforts in the state, including ITS projects managed by MPOs in North Carolina. As such, this Business Plan can be expected to become vital input to that effort.

Conclusion

CVISN Model Deployment is providing the vehicle for a fairly thorough introduction of technology to CVO. The FuelTaCS initiatives, because they reflect the experience and unique circumstances of North Carolina, provide process improvement input that can multiply the benefits of CVISN Model Deployment. Mainstreaming, as an explicit planning-intense process, becomes one of the important long-term means for North Carolina to maintain a shared national objective. A variety of other projects have been spawned through the existing program, each increasingly taking on a regional flavor.

Chapter 6: Project Assessment

Criteria for Assessing Projects

After being evaluated on their suitability to large-scale problem and opportunity solving, projects can be characterized on issues related to their size, cost, practicality, etc. The following criteria can be used to either assign absolute values to projects or to help rank order projects based on their relative merits.

Cost: • Capital investment? Fixed and 'Variable' • Maintenance? • Operating? • Potential sources of support? • Timing of fund availability? • Special conditions attached to the funding?	Technology: • What is the expected technical capability of the technology (if it works)? • How much training (user-friendliness)? • Does it support the open standards principles of CVISN? • If it works, will it solve the problem? • If it works, will it keep working? • How compatible is it with other technologies planned currently, with legacy systems, and with anticipated future capabilities, and with outside agencies/states?
Personnel: • Number of person-hours of what skill types? • Which need to be internal/external? • Can they be procured? • New personnel needed after project completion? • Impact on existing personnel?	Organization/Cooperation: • How many people/departments/agencies are involved? • Buy-in at a management level that covers the necessary people/departments/agencies? • Sufficient cooperation to coordinate the project anyway?
Efficiency: • Does this project lower costs for the private sector, the public agency, or the highway fund? • Does it increase the capabilities of any of these sectors?	Time and Timing: • Sequencing dependencies? • External processes or events? • How long to implement?
Safety: • Whose safety will it impact and how? • Can it be measured in dollars and/or lives?	Simplicity: • Does this make the current task easier? • Does it create expectations of increased capabilities and thus *more* work and responsibilities?
Political: • How long will this political/administrative configuration last? • Can other, external political circumstances suddenly impact the project?	Alternative Methods: • Are there easier, cheaper, simpler ways to accomplish the same goal? • Does it rely on other agencies/people who cannot be directed by this project?
Equity: • Does it treat users fairly or improve the equitable application of laws or regulations?	

CVISN Model Deployment

	Credentials and Carrier Systems	Clearinghouse Interfaces	Safety Information Systems	Electronic Screening
Cost	$1,171,500	Included w/ Credentials System	$459,000	$1,281,000
Time	24 months	24 months	30 months	36 months
Personnel	IDT, programmers, training, maintenance	Internal programmers, training	Internal programmers, training, and maintenance	External programmers, training, and maintenance
Cooperation	DMV and Carriers	DMV and Clearinghouses	DMV and Clearinghouses	DMV, Carriers, States
Technology	New, Open Standards	New, Open Standards	New, Open Standards	New, Open Standards
Safety	OS/OW Benefits?	OS/OW Benefits?	Positive Benefit	Positive Benefit
Simplicity	Yes, but not to sacrifice compliance	Yes, but not to sacrifice compliance	Probably more complex software and equipment	Simpler than present system(s)
Political/ Regulatory	Carrier training important		Voluntary now, but may develop as a federal mandate	Need to show privacy protected
Alternatives	Simpler paper process	Paper links to clearinghouses		Visual monitoring, sample weigh
Equity	More complete coverage of carriers	Fair distribution of fees among states	More attention on unsafe carriers	Safe carriers advantaged
Efficiency	Less Carrier and staff time	Less staff time	Catch more violators	Process more carriers

Chapter 7: Project Description

The projects as proposed in the Vision and Project Matrix above, represent an idealized domain of opportunities. Because the initiating agency or program underlying many of these projects differ, many of the efforts overlap. The project descriptions which follow are the harmonized list. That is, they represent the integrated and harmonized execution of effort which is required for a cohesive and effective deployment of technology and process change.

Whereas the matrices above indicate how individual projects can be expected to meet needs, solve problems, or increase efficiency and effectiveness, the descriptions which follow are a more realistic indicator of how these projects will be deployed to meet clusters of needs.

Credentials & Carrier Systems

Sponsoring Projects:

FHWA/OMC CVISN Model Deployment

Other Agencies/Clients:

Commercial Vehicle Operators, General Public, NCDOT, and NCDOR

Project Objectives:

Improve time of response to CVO. Reduce administration cost and provide better service. Provide greater accountability and improved tax compliance.

Products/Outcomes:

Interface hardware/software extended to the field for dispersed locations for “one-stop” offices. Internet access to forms and procedures.

Project Narrative:

This project is designed to reengineer procedures to meet regulatory requirements in North Carolina. Available technology and interfaced legacy systems allow single entry of common data and reduced administration of process. Shared legacy data provides cross match of common elements for tax and fee compliance. The process can be made available to CVO through internet access and public domain software.

Resources Required:

Implementation

Personnel: Software modifications and training

Capital Investment: Computers and WAN/LAN interface equipment

Operations

Personnel: Audit of inputs and acceptance, retraining

Maintenance: Hardware/software upgrades

Total Cost

$3,000,000 over two years

Major Issues/Problems:

Client confidentiality and pirated credentials. Political acceptance of disbursed authority to field offices.

Schedule/Timing:

System data interface by September 1, 1998. Field testing and training by January 1, 1999.

Safety Information Systems

Sponsoring Projects/Agencies:

FHWA/OMC CVISN Model Deployment: MCSAP

Other Agencies/clients:

Commercial vehicle operators and general public

Project Objectives:

Make near real-time safety and compliance information available to Enforcement officers at inspection stations.

Products/Outcomes:

Electronic access to safety, registration, and taxation databases, both nationally and state-based (CVIEW snapshot), on PCs in each inspection station. The PCs also provide input to same databases for inspection results. Communication network extending into each inspection station for purposes of carrying data in and out.

Project Narrative:

This project provides the communications and data backbone for roadside inspection and screening. Fully implemented, it will allow screening and inspection decisions to draw on a nationwide information database (SAFENET) and abbreviated state-based registration information, the so-called 'snapshot' data. Further, it will provide the infrastructure to maintain that database by enabling the uploading of inspection results. It is thus a prerequisite for the installation of mainline screening systems if they are to be based on the information contained in CVIEW.

Resources Required:

Implementation

Personnel: Communications infrastructure installations and PC installations

Capital Investment: Software and hardware

Operations

Personnel: Retraining

Maintenance: Software and hardware upgrades

Operations: Subscription costs to databases

Total Cost

$3.5 million over three years

Major Issues/Problems:

Persuading carriers that extensive information access is in their best interest. Reliability and current nature of information.

Schedule/Timing:

All 10 weigh stations to be networked by January 1, 1999.

Electronic Screening

Sponsoring Projects:

FHWA/OMC CVISN Model Deployment

Other Agencies/clients:

Commercial vehicle operators and general public

Project Objectives:

Improve speed and current select method of screening. Extend to all weight stations in state. Reward safe carriers and target unsafe carriers.

Products/Outcomes:

Screening hardware/software that relies on CVISN-based information as to safety history, registration, and permitting records, to indicate the likelihood of selecting trucks for weighing and/or inspection. Unmanned remote installations on selected bypass routes to better monitor carriers who may be avoiding mainline inspection stations. Satellites employ same screening philosophy as mainline stations.

Project Narrative:

This project is designed to upgrade the existing operational test installations to capitalize on the CVISN architecture and safety/registration information availability that will emerge from the Safety Information Systems project. This is a shift from the current philosophy of screening trucks solely on WIM information and a restricted-eligibility enrollment strategy. Trucks will not be pre-enrolled in any particular 'list'; the presence of a complianttransponder will be sufficient investment to allow them to participate in the logic of the screening system.

Resources Required:

Implementation

Personnel: Software modifications and training

Capital Investment: Readers,WIMs, cameras, computers, land and installation at satellite site

Operations

Personnel: Monitor satellite sites and retraining

Maintenance: Hardware/software upgrades, WIM, and camera care

Total Cost

$8,500,000 over five years and 10 weigh stations

Major Issues/Problems:

Smooth conversion path from current weight-based installations to CVISN information-based evaluation. Adoption of philosophical shift from weight-based to safety and compliance-based screening. Evaluation of effectiveness of satellite sites.

Schedule/Timing:

Implement new system at one station by January 1, 2000, including satellite site. Three sites by January 1, 2002, all sites by January 1, 2005.

Appendices

A.1 ITS/CVO Organization and Management Approach

A.2 DMV Enforcement Survey

A.3 Results of CVISN JAD Session

Appendix A.1 ITS/CVO Organization and Management Approach

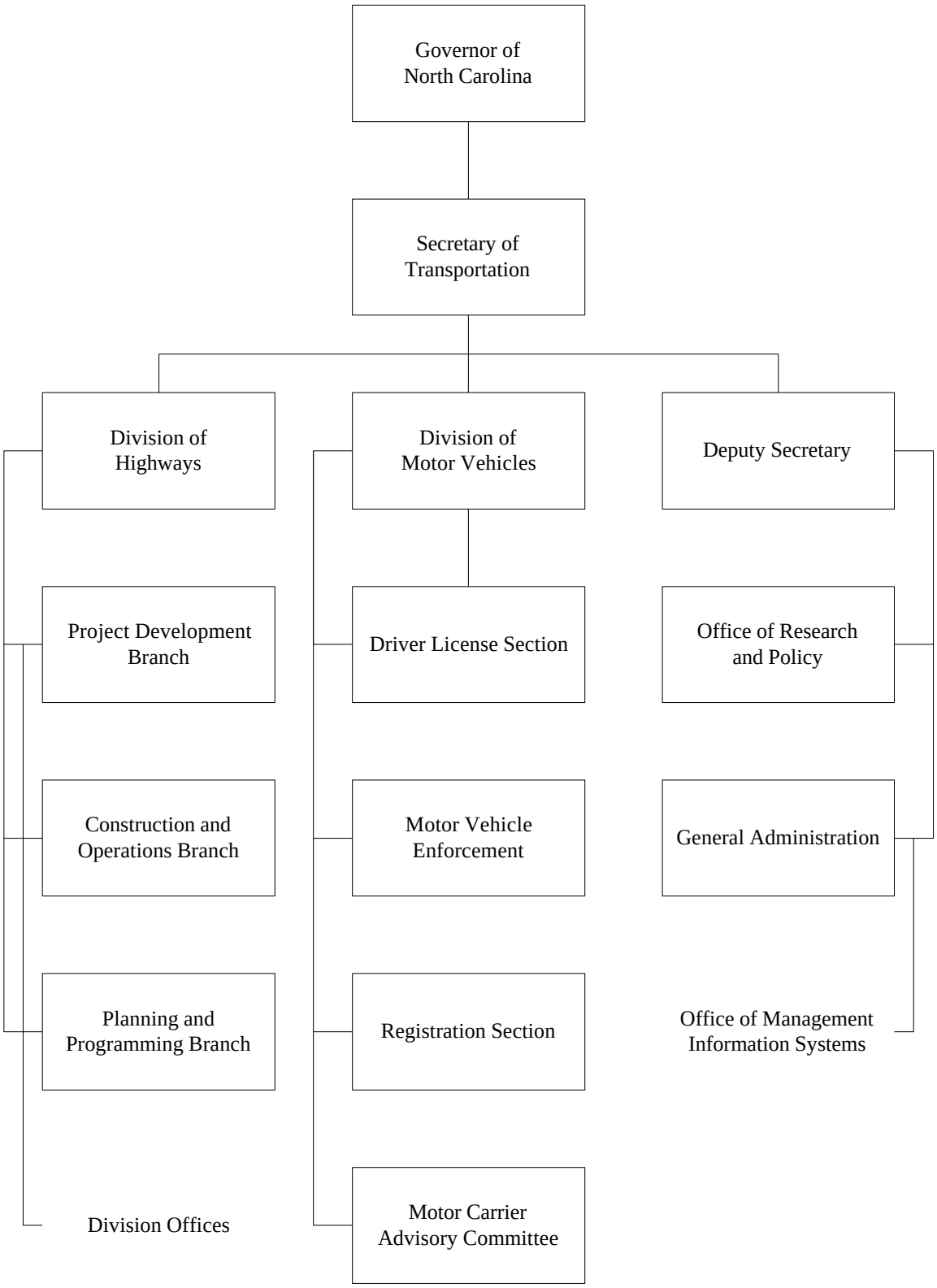
The following organizational chart depicts the CVO planning and program management structure as well as the key agencies responsible for implementing ITS/CVO projects. The Office of Research and Policy Analysis of North Carolina's Department of Transportation functions as ITS/CVO program manager.

The program manager has direct contact with all responsible regulatory and Enforcement parties in North Carolina and direct access to the Secretary of Transportation. ChrisMcAdams of the Office of Research and Policy Analysis was appointed as program manager by the Secretary in order to assure full cooperation, integration, and timely success. The already established ITS/CVO working group with representatives of the North Carolina Motor Carrier Advisory Committee, North Carolina Truck Association, and key state offices has the capacity tooperationalize all project proposals contained in this plan.

The core working group is essentially the group designated to plan, manage, and deploy North Carolina's CVO projects. The expanding role of this group has produced valuable input and coordinated progress.

The section which follows the organizational chart details those agencies responsible for CVO administration and Enforcement as well as key individuals who impact CVO planning and programs.

North Carolina Organization Relating to CVO



DIVISION OF MOTOR VEHICLES

Janice Faulkner, Commissioner

Phone: (919) 733-2403

Fax: (919) 733-0126

Driver License Section

Purpose: This section maintains a driving history record for each licensed driver in the state. Driver License also handles license reinstatements, driver licensing hearings, medical review board, commercial driver licenses, and miscellaneous driver license services.

CVO Related Activities: The section works closely with the FHWA Office of Motor Carriers to administer Commercial Driver Licenses (CDLs).

Motor Vehicle Enforcement Section

Purpose: This section enforces state and federal laws and regulations pertaining to commercial motor vehicle operation in the state of North Carolina.

CVO Related Activities: This section enforces state and federal laws and regulations pertaining to commercial motor vehicle operation in the state of North Carolina as they relate to vehicle size, weight, registration, operation authority, fuel tax reporting, insurance, and safety requirements. Officers interdict commercial vehicle drivers who are drug or alcohol impaired and interdict transportation of illegal drug shipments in commercial vehicles. The section also conducts vehicle safety, hazardous materials, and driver inspections.

Registration Section

Purpose: This section provides private contract agents with supplies and computer programs necessary to register and license all vehicles, trailers, and boats in North Carolina. The section is subdivided into the Insurance Branch, Registration Branch, and Title Branch.

CVO Related Activities: This section provides contract agents with supplies and computer programs necessary to register and license all vehicles and trailers in North Carolina.

North Carolina Motor Carrier Advisory Committee

Purpose: The duties of the committee shall be to advise the executive and legislative branches of government of the North Carolina on issues regarding industrial expansion, promotion of motor carrier development, and improvement of motor carrier taxation and regulation methods.

CVO Related Activities: The duties of the advisory committee include the promotion of motor carrier development and improvement of motor carrier taxation and regulation methods.

Interactions With Private-Sector Entities: The committee consists of representatives of the motor carrier industry engaged in transportation of persons or property within the state.

GENERAL ADMINISTRATION

Manny Marbet, Deputy Secretary

Phone: (919) 733-2520

Office of Management Information Systems

Purpose: The MIS manages all information processing activities and equipment utilized by the Department of Transportation. The Office consists of two branches:

Data Processing Branch - Supports data processing systems. Reviews and processes requests for mainframe related programming and new equipment acquisition.

Automation Support Branch - Systems development and analysis, Engineering Graphics System (GIS), Wide Area Network (WAN), and user support.

CVO Related Activities: Development of systems and interfaces to assist in administration of commercial vehicle issues.

Office of Research and Policy Analysis

Purpose: The Research and Policy office manages all survey research and develops strategic/business plans for the Department.

CVO Related Activities: Development and coordination of ITS/CVO business plan.

DIVISION OF HIGHWAYS

Larry Goode, PhD.,PE., Administrator

Phone: (919) 733-7384

Fax: (919) 733-9428

Purpose: The State Highway Administrator manages, directs, and coordinates the engineering and support functions of the Division of Highways at both the central office and division levels. The State Highway Administrator is the chief technical advisor to the Board of Transportation and supervises the daily activities for the Division of Highways.

CVO Related Activities The State Highway Administrator manages engineering and support functions for the Division of Highways, including the engineering and support required for weigh station construction.

Preconstruction

Deputy Highway Administrator for Preconstruction

Purpose: The DHE formulates and implements all pre-construction phases of highway projects. The DHE oversees the following units:

Bridge Design

Highway Design

Professional Services

Right of Way & Utilities

Traffic Engineering and Safety Systems

Contracts

CVO Related Activities The DHE oversees the Highway Design, Professional Services, and Right of Way and Utilities divisions. These divisions are involved in the process of weigh station construction and modification.

Construction and Operations

Chief Engineer for Construction & Operations

Purpose: The CE formulates and implements all construction phases of highway projects. The CE also formulates and implements all maintenance, traffic control, and equipment utilization for the state highway system. The CE oversees:

Construction

Equipment

Materials

Maintenance

CVO Related Activities The Construction, Equipment, Materials, and Traffic maintenance units under the supervision of the CE are involved in weigh station construction and modification.

Planning and Programming

Director of Planning and Programming

Purpose: The Director formulates and implements all planning and program development phases of highway projects. The Director oversees:

Highway Planning

Program Development

Project Development

Environmental Analysis

CVO Related Activities The planning and development units under the supervision of the Director are involved in weigh station planning and development.

Division Offices

Purpose: Division Offices are responsible for the field implementation of highway programs.

CVO Related Activities The Division Offices are responsible for the field implementation of highway programs, including the construction and modification of weigh stations.

Motor Fuels Tax Division of the Department of Revenue

Purpose: The division collects the state's fuel (IFTA) taxes. The division also provides proper credentials for adequate Enforcement.

CVO Related Activities The division collects motor fuel taxes from motor carriers.

A.2. DMV Enforcement Survey

Survey Methodology

The responses gathered for this survey are the result of 165 mailed questionnaires returned during the month of October, 1997. The sampling frame consisted of 300 Division of Motor Vehicles' (DMV) Enforcement officers. The response rate for the study was 55 %.

The survey has a margin of error of ≤ 2.23% at the 95% level of confidence. This means in 95 out of 100 such samples, the results would differ by no more than 2.23 percentage points from what would have been obtained if every Enforcement officer had responded. Results for subgroups (assigned district, number of officers per office) have a slightly higher margin of error in that they are derived from a smaller number of respondents.

The survey was designed by the Office of Research and Policy Analysis of the Department of Transportation, which was responsible for verification of all questionnaires, and coding, processing and analyzing the data.

Survey Summary

Overall, we find DMV Enforcement officers hold a generally favorable attitude towards the concept of change and improved technology to enhance their job performance. While there are pockets of negative opinion in some areas, Enforcement officers as employees are genuinely interested in serving the commercial vehicle operations in North Carolina and doing a good job.

The Enforcement officers indicate a strong agreement that there is a need to evaluate improvements in procedures. Areas that received the most support are paperwork procedures, concentrated Enforcement efforts, more officers, multi-state regulation uniformity, and increased support for Enforcement off the interstate.

The least desirable proposals for change are pass through clearance and full time operations, 24 hours a day and seven days a week. The arguments suggest that safety inspections are important for all carriers and that random hours of operations achieve the same level of compliance as full time operations.

Officers indicate that a properly equipped weigh station should primarily have an inspection pit with longer entrance ramps and larger areas for parking of trucks. Weigh in motion scales are favorable to static scales. Again, full time operations are not supported for weigh stations.

The four elements of mainstreaming are supported except electronic pass through clearance. Computers in the Enforcement vehicles receive the greatest support followed by transponders on trucks and electronic payment of fees and violations.

Overall support for mainstreaming of commercial vehicle operations through commercial vehicle information systems and networks is substantially greater than opposition, with a forth of the respondents undecided. The areas that most influence this overall support are an emphasis on speed Enforcement, uniform regulatory requirements with other states, cross training of officers, that most violations occur off the interstate and that operations and reporting should be computerized.

The open end comments of the Enforcement officers provide insight in the interpretation of the survey results. The greatest area of comment reflected on the concept that DMV Enforcement officers are trained in more areas than any Enforcement agency in the state and receive the least pay. To continue to require greater diversity and responsibility for increased operations and new missions is counterproductive with reduced staff and below average salaries.

Examples of comments are:

"I feel that the amount of work and training required with the job, the state really needs to adjust the pay for Enforcement officers. This would improve work habits. In most states the motor carrier officer is the elite of the elite officers. I feel we are here, but we are not thought of that way or paid fairly. The same pay grade at least equal to an inspector. They push paper while we push safety on 80,000 pound vehicles with hazardous loads. The Enforcement Section needs to show off on the priority of Enforcement and be proud. I am. We just need a little help from others."

"I do not think any of these ideas will work, unless more personnel are hired. DMV is trying to do too many things with too little employees. We need to get back to concentrating on our main goals. These should be weight, size, length and detecting hazardous commercial vehicles with safety violations. These are the areas that cause harm to people and property. Rest Area Patrol and so many checkpoints are not the way to do it, since most of the time we are dealing with cars. Getting unsafe trucks off our highways should be our main goal. Especially, since North Carolina ranks 6th in the country for having so many accidents involving commercial vehicles."

"Transponders will work for a short while, then there will be products on the market that will be designed to defeat their purpose. The radar detector is an example of technology to defeat radar speed Enforcement."

"Enforcement efforts should be on commercial motor vehicles that are not in compliance with state and federal regulations. We should not be sitting in a "pickle pack" at 3 am when there is not a vehicle in the lot. There needs to be some better time management by the division. Interstate rest area patrol is not needed 24 hours a day and 7 days a week. Time should be utilized better by working to bring commercial vehicles within compliance during the known times of operation."

Survey Abstracts

Work Location of Respondents

The Asheville District had the largest number of respondents (24 %), while Raleigh (9%) and Newton (8 %) had the least.

Table 1. Area of Operations

I.	Greenville	12%
II.	Fayetteville	13%
III.	Greensboro	9%
IV.	Greensboro	11%
V.	Winston-Salem	13%
VI.	Charlotte	10%
VII.	Newton	8%
VIII.	Asheville	24%
	Headquarters	0%

Areas of Work

The officers often work in more than one area of operations. Respondents were allowed to select all areas of work that applied to them. The areas of operation that involve the most officers are Weight Enforcement (89%) and Rest Area Patrol (88%). The next most frequent areas of operation are the Federal Motor Carrier Program (47%) and Fuel Tax Compliance (45%). The remaining areas combine for 15% of the operations that are assigned to the responding officers. The "Other" category (11%) represented positions that were administrative or narrow in interpretation.

Table 2. Areas of Work Assignment

Weight Enforcement	89%
Rest Area Patrol	88%
Federal Motor Carrier Program	47%
Fuel Tax Enforcement	45%
Revocation of Licenses/Registrations	5%
Safety Inspection/Emissions	5%
Vehicle Theft	3%
Commercial Truck Driver Schools	2%
Salvage and Title Fraud	0%
Other	11%

Support Changes in Procedures

A series of 12 questions were asked to measure the respondents' level of support for changes in policy and procedure.

Current Paperwork Process Needs Reviewing

Nearly three-fourths (74%) agree that the paperwork process needs reviewing. There is very little disagreement (4%) with the statement. Many have no opinion (23%) or consider the change irrelevant.

Table 3. Paperwork Process

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
2%	2%	23%	30%	44%

Enforcement Efforts Should be Concentrated on Carriers Not in Compliance

Over three-fourths (77%) agree that Enforcement efforts should be concentrated on carriers with poor compliance histories. Only a few (6%) express disagreement.

Table 4. Enforcement Efforts Concentrated

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
2%	4%	17%	25%	52%

Carriers In Compliance Should Receive "Pass-Through" Clearance

Several more (41%) disagree than agree (28%) that carriers who have good compliance histories with the state should be given automatic clearance to pass through the state. In the previous question, there was support for concentrating efforts on carriers with poor compliance history. This would indicate that reduced attention with controlled "pass-through" is acceptable.

Table 5. Pass-Through Clearance

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
28%	13%	31%	18%	10%

Speed Enforcement Should Be Emphasized

Most of the officers (70%) support a more active role of DMV in speed Enforcement. A small minority (14%) feel that speed Enforcement is not a major role for motor carrier operations Enforcement.

Table 6. Speed Enforcement Emphasized

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
10%	4%	17%	12%	58%

Additional Officers Are Needed To Meet Requirements

There is strong agreement (74%) that there are not enough officers to meet the current mission requirements that continue to be added as responsibilities. Very few disagree (7%) with this statement.

Table 7. Additional Officers Needed

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
5%	2%	18%	11%	63%

Regulatory Requirements Should Be The Same For Each State

There is overwhelming support (90%) for states to match regulatory requirements with only 2% in disagreement. Only 7% neither agreed or disagreed indicating a strong commitment either "for" or "against" the concept.

Table 8. Common State Regulatory Requirements

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1%	1%	7%	15%	75%

A Majority Of Violations Occur Off The Interstate

A very small minority (7%) of officers disagree with this statement. Agreement is considerable (86%) with very few officers (7%) without an opinion.

Table 9. Most Violations Occur Off Interstate

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
6%	1%	7%	23%	63%

All Operations and Reporting Requirements Should be Computerized

Very few respondents (8%) were in disagreement with this statement. There were a considerable (21%) number of respondents that were noncommittal but there was a majority in agreement (70%) with a tendency to strong agreement (44%).

Table 10. Operations Computerized

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
3%	5%	21%	26%	44%

Highways with "Turnoff" Lanes for Portable Weighing

The convenience of having a paved "turnoff" lane on two-lane highways to weigh trucks with portable scales received near complete support (86%) with only 3% in disagreement. The safety factor of separating a stopped truck from traffic is important to the officer who must work under and around a truck and often he must follow a truck several miles to find an appropriate location.

Table 11. Highway "Turnoff" Lanes

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1%	2%	11%	17%	69%

DMV Enforcement In Operation 24 Hours Per Day, Seven Days Per Week

Slightly more officers disagreed (44%) than agreed (30%) that operations should be in force at all times of the day and week.

Table 12. Operations 24 Hours, Seven Days

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
34%	14%	22%	13%	17%

All DMV Officers Should Receive The Same Level Of Training

The complete training of all officers in several areas of Enforcement is supported by a majority (82%) of the respondents to the survey. Only 10% support that officers receive only the training appropriate to their assignment and mission.

Table 13. Same Level of Training

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
6%	4%	8%	14%	68%

A Properly Equipped Weigh Station

Respondents were offered a selection of weigh station improvements and standard equipment to choose as features that should be available at a weigh station. They were able to select any or all of the features listed. An inspection pit (92%) and longer entrance ramps (91%) were chosen most often. Large areas for parking (87%) and weigh-in-motion scales (85%) follow in level of importance. "Pass-through" lanes (80%) and multiple signs to notify truckers well in advance of weigh stations (79%) were third in importance to respondents. Very little support, in comparison to the other choices, is expressed for static scales (44%) and having the stations open at all times (32%).

Table 14. Properly Equipped Weigh Station

Inspection pit	92%
Longer entrance ramps	91%
Large areas for parking	87%
Weigh-in-motion scales	85%
"Pass-through" lanes	80%
Multiple signs	79%
Static scales	44%
Open 24 hours	32%
Other	16%

The "Other" category included 26 separate responses. Examples include improved lighting, entrance cameras, modern building with office space, and automated teller machines for truckers to access moneys.

Critical "Mainstreaming" Elements Supported For Implementation

Four frequently mentioned elements that are critical to national efforts to improve commercial vehicle operations with new technology were presented to respondents to determine the level of support among DMV Enforcement officers. The selection was not limited to one choice with the opportunity to select any or all of the areas presented. The availability of computers in the Enforcement vehicle was chosen more often (37%) than the other three choices. Transponders in the trucks to automate identification and credentialing was second (37%) with the concept to allow commercial vehicles with good compliance to "pass-through" the weigh stations as the least accepted (9%).

Table 15. Critical "Mainstreaming" Elements

Transponders on trucks	32%
"Pass-through" clearance for trucks	9%
Computers in Enforcement vehicles	37%
Electronic payment of fees/violations	22%

Overall Support For The Concept Of "Mainstreaming"

The support for mainstreaming of commercial vehicle operations is strong (79%) among DMV Enforcement officers. Nearly one-fourth (24%) neither agrees or disagrees. Very few disagree (7%) indicating that improvements to overall Enforcement operations are acceptable.

Table 16. Overall Support of Mainstreaming

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
4%	3%	24%	30%	39%

Test of Association Using Chi Square

A statistical analysis was applied to selected data using a Chi Square statistical model. Chi Square is a procedure that measures the likelihood that two variables (questions) are related.

The probability that two variables are related is expressed in the form of $p = .xxx$. The standard way of expressing probability, however, is inverted, with the value p representing the probability that two variables are not related. Consequently, the expression $p = .050$ means that there is a 5% chance that the two variables are not related. Conversely, the expression means there is a 95% chance the two variables are related.

Question 6 in the survey asked the respondents to rate their overall level of support for the "mainstreaming" of commercial vehicle operations. For Chi Square purposes, this is the dependent variable. To carry out the analysis, the 11 separate areas in question 3 that were ranked by five variables, with 1 equal to strongly disagree and 5 equal to strongly agree, will serve as the independent variables. We are interested in the role each of the 11 areas have on the support for changes and improvements that influence the respondents' overall level of support for "mainstreaming."

Illustrated below are the results of the Chi Square test.

Table 17. Overall Support for "Mainstreaming" Elements

	***p* =**
Current paperwork processes	.436
Enforcement concentrated on carriers not in compliance	.191
"Pass-through" clearance for carriers in compliance	.144
Emphasize speed Enforcement	**.001**
Additional officers are needed	.072
Regulatory requirements the same for all states	**.030**
Weight and safety violations occur off the interstate	**.008**
Operations and reporting requirements should be computerized	**.002**
Highways with side turnoff lanes for portable scale weighing	.205
DMV Enforcement operations open 24 hours per day, seven days per week	.274
All DMV Enforcement officers receive same training	**.001**

Independent variables that indicate a considerable association to the dependent variable:

Emphasize on Speed Enforcement has a value of $p = .001$, meaning there is a 99.9% chance it is related to the overall level of support for mainstreaming.

Regulatory Requirements the Same for all States has a value of $p = .030$, meaning there is a 97% chance it is related to the overall level of support for mainstreaming.

Weight and Safety Violations Occur Off the Interstate has a value of $p = .008$, meaning there is a 99.2% chance it is related to the overall level of support for mainstreaming.

Operations and Reporting Requirements Should be Computerized has a value of $p = .002$, meaning there is a 99.8% chance it is related to the overall level of support for mainstreaming.

All DMV Enforcement Officers Should Receive the Same Level of Training has a value of $p = .001$, meaning there is a 99.9% chance it is related to the overall level of support for mainstreaming.

Other comments or suggestions

An open-ended comment section at the completion of the survey yielded several categories of observations and suggestions. May (51%) suggested improvements to the pay scale in comparison to other law Enforcement agencies. Changes and improvements to operations were mentioned by 28% of those who offered comments. Personnel training (16%), equipment needs (13%), and manpower levels (12%) received a moderate amount of attention.

Table 18. Open-End Comments

Pay Scale	51%
Operations	28%
Personnel Training	16%
Equipment	13%
Manpower	12%
Missions	7%
Facilities	4%
Job Assignments	4%
Favorable Comments	4%
Hiring Practices	3%
Other	6%

Examples of comments:

Pay "I feel that with the amount of work and training required for the job, the state really needs to adjust the pay for Enforcement officers. In most states, the motor carrier officer is the elite of the elite. I feel we are, but we are not thought of that way or paid fairly."

Operations "Enforcement efforts should be on commercial motor vehicles that are not in compliance with state and federal regulations. We should not be sitting in a 'pickle pack' at 3 am when there is not a vehicle in the lot. There needs to be some better time management by the division. Interstate rest area patrol is not needed 24 hours per day and seven days per week. Time should be utilized better by working to bring commercial vehicles within compliance during the known times of operation."

Training "I believe our agency is in desperate need of a selection process and in need of a lengthy basic school for all new hires. Emphasis should be placed on all laws and regulations concerning commercial motor vehicles."

Equipment "Mainstreaming is a good idea, but you need to address the need of front-line officers to have computers in patrol cars, radar, etc. This will allow him/her to do his/her job the best in the United States."

Manpower "I do not think any of these ideas will work unless more personnel are hired. The DMV is trying to do too many things with too little employees. We need to get back to concentrating on our main goals. These should be weight, size, length, and detecting hazardous commercial vehicles with safety violations. These are the areas that cause harm to people and property. Rest Area Patrol and so many checkpoints are not the way to do it since most of the time we are dealing with cars. Getting unsafe trucks off our highways should be our main goal. Especially since North Carolina ranks sixth in the country for having so many accidents involving commercial vehicles."

Missions "For employee morale and more efficient work from DMV employees, get us out of the rest Area Patrol. I feel our time spent in the Rest Area Patrol could be used for DMV Enforcement missions. The state could save money and hire a company to patrol the rest areas."

Facilities "Increase the size of the weigh stations so that we have room to work."

Job Assignments "Let people work all shifts. Some people are assigned permanent shifts (daylight only). People should work on the road and the station. Not just one or the other."

Hiring Practices "There should be a selection process for all applicants. Everyone should be hired, enter our basic school with emphasis on commercial vehicle laws, officer survival, and physical fitness) and graduate as a VEO I regardless of their prior law Enforcement."

Other "I am proud to be a part of DMV Enforcement. I would not stay at a job that I feel I cannot contribute to and feel good in doing my job. The DMV still has a long way to go to be what it could and should be. Instead of sending out these questionnaires, let management come out into the field, talk to the officers, and ride with them. I think we are heading in the right direction." Transponders will work for a short while, then there will be products on the market that will be designed to defeat their purpose. The radar detector is an example of technology to defeat radar speed Enforcement."

A.3 Results of the CVISN JAD Session

In a recent JAD session held among several government agencies, to include the Department of Revenue - Motor Fuels Tax Division, Department of Transportation - Management Information Systems, Division of Motor Vehicles Enforcement, North Carolina Utilities Commission/Public Safety, Motor Carrier Regulatory, and Department of Highways, it was agreed that we are identifying problems that need to be solved in North Carolina and are on the way to building a successful infrastructure.

We are pinning down how all agencies may be linked for the infrastructure - to be able to obtain data from all databases represented. The key component is to enhance ways we do business in North Carolina.

The different agencies were asked to look at their current business processes and see if there are any ways to use technology to bring about greater efficiency. Participants were asked to think of how they can best utilize the resources available.

The organizations represented were asked to spend some time and respond to a request for a write-up of their business processes. Following is a representation of the information that was gathered.

IFTA/Non-IFTA

Credentials

- Application (qualified vehicles only)
- Fuel decal and license (IFTA and non-IFTA)
- Temporary permits (ITFA and non-IFTA)
- Identifier: FEIN/SSN

Tax Returns

- IFTA Quarterly Returns (via Internet 1998)
- FuelTaCS Crossmatch (IFTA/Fuel movements)

The Federal Tax Administration with New York is spear-heading the process for quarterly filing on the Internet by 1998. The EDS is developing this (i.e., customization of state fields). Need electronic filing of tax returns.

The decal number used to be vehicle-specific.

We need to consider who we are regulating: vehicle, carrier, or driver.

For-Hire Carriers

Vehicle Registration

- Intrastate For-Hire

- Interstate For-Hire
- Intra-exempt For-Hire
- Passengers Carriers (buses)
- Private Commercial Vehicles (5,000lbs. above)

For-hire must have Form E for required limits of liability coverage.

Vehicle must be registered with proper documents. A vehicle owner can only purchase for-hire tags is Raleigh or Charlotte Branch 9. A vehicle owner can get a temporary tag at DMV Enforcement.

Interstate we require ICC number only.

Intra-exempt: Form E same process.

Carriers regulated by Utilities Commission must have MC-19 (equipment sheet) from Motor Carriers for passengers and movers of household goods.

Private commercial vehicles from 5,000 to 8,000lbs can purchase tags at any branch office.

Identifiers: license plate number, title number, VIN number

Improvements: weigh stations - can issue temporary for-hire tags; otherwise, two locations for permanent plates; combine this process with one-stop shop; if information is missing, has to go to MCR unit or Utilities Commission; could use a USDOT number if this could be worked out with STARS

Utility Commission Functions

Water

Electricity

Telephone

Natural Gas

Transportation

- Ferry Operations (private)
  Impacts on CVO
- Household Goods (tariffs) - proof of 'fit, willing, and able' financially to do it; can purchase the authority of a retiring entity; information is obtained by paper currently - could be done electronically
- Charter buses
- Railroads
- Trucking operations other than household goods

Oversize/Overweight Permits

Need the business plan to integrate business plans of permits, traffic safety, and statewide enforcement for resource allocation, crash analysis, and budget preparation.

Currently working on project description development programs processes and tasks to carry out our business plan.

Future goals:

- Integration of law enforcement efforts of state, county, and local enforcement to support efforts of DMV Enforcement.

- To develop a line of communication, to overcome turf boundaries, to overcome institutional constrains, and to overcome old-time methods.

Common identification present - license number; future - federal identification number

Inventory

- To write programs for Access.

Enforcement regulates the permits issued by this unit because the permits are based on the information given by the carrier. Mobile homes can't be easily checked because of size/safety. Therefore, this group operates typically without proper credentials. Mobile homes represent 38 percent of the permits issued. This agency issues approximately 140,000 permits a year and are looking into an escort identification program.

Identifier is license tag number.

Improvements: SHP and county enforcement should have access to data to assist with permit enforcement. Legislation should be addressed to have graduated costs for size/weight/distance (impact on highway damage) as other states do. This is currently being reviewed.

Enforcement Credential Issuance

IRP (issuance of temporary license or transfer)
- Issue temporary cab card and plate after verify and fax copies of necessary information to IRP
- IRP faxes back billing statement; station issues temporary tag and cab card
- Mail work to IRP

For-Hire/Private
- Issue temporary 30-day marker and tag

- Verify necessary paperwork and issue credentials
- Mail work to Raleigh

Temporary Credentials
- IRP - Issue temporary one-day permits (by receipt)
- Fuel - issue temporary 20-day permits (by receipt)
- BINGO - 10-day temporary in lieu of BINGO

The USDOT number is carrier-specific, not vehicle-specific. There is a need for a number which identifies the vehicle.

The RSS (receipt for liability insurance) proof can be a copy.

Improvements: Two schools of thought - discontinue the issuance of enforcement staff or continue to do some of this temporary issuance.

Motor Carrier Regulatory Unit

Processed only in Raleigh or Charlotte

Interstate Regulated For-Hire Motor Carriers - SSRS
- RS-1 app, RS-2 app, BOCC - three process agents
- BMC91X or BMC91 liability insurance
- RS-3 receipt - receipt issued to carrier in compliance
- Identifier is MC number

Interstate Exempt For-Hire Motor Carriers
- A-1 app
- B-1 app
- Form E (proof of liability insurance)
- BINGO stamp issued for each truck when carrier in compliance
- Identifier is BINGO stamp

Intrastate Exempt For-Hire Motor Carriers
- Form E (proof of liability insurance)
- Carrier cannot buy for-hire tag until insurance is on file
- Identifier is N/A

Intrastate Regulated For-Hire
Household Goods
- Authority Utilities Commission
- Tariff Clearance from Rates Division
- MC19A (equipment listing)

- Form E (liability limits 100/300/50)
- Form H (2500/5000 limits)
- Identifier is a number issued by Utilities Commission

Exempt Household Goods
- Exemption Certificate (intracity movement)
- Form E Liability
- Form H Cargo
- Identifier is the E number

Passengers 0-15 passengers, 1.5m, 16 or more, 5 million
- Authority Utilities Commission
- Tariff Clearance Rates Division
- MC19B (Equipment Listing)
- Form E
- Certificate of Insurance (year, make, serial number, vehicles and limits listed)
- Identifier is a number issued by Utilities Commission

Exempt Passengers
- Exempt business certificate
- Form E
- Certificate of insurance
- Identifier is the EB number

Improvements: potential audit through Fuel Tax (IFTA) as is done in other states; carriers are not reporting all their vehicles; relates to for-hire/IRP could combine with MCR units

The OS/OW wants to require liability insurance.

The North Carolina ITS/CVO Business Plan

This document has been reviewed and accepted by the following:

_____ Date _____

Garland Garrett
Secretary of the North Carolina Department of Transportation

_____ Date _____

Manny Marbet
Deputy Secretary of the North Carolina Department of Transportation

_____ Date _____

Janice Faulkner
Commissioner of Division of Motor Vehicles of the North Carolina Department of Transportation

_____ Date _____

Larry Goode
Division of Highways Administrator the North Carolina Department of Transportation