

**LOCAL EVALUATION REPORT FOR ALDOT'S
ELECTRONIC PERMITTING FOR OVERSIZE AND OVERWEIGHT VEHICLES**

I. EXECUTIVE SUMMARY

This project is the first phase in the development of an integrated and automated system for permitting oversized and/or overweight commercial vehicles. The system enables permit applicants to obtain automated route information and permits for oversize and overweight loads throughout the highway system. The oversize/overweight permitting system provides the means for scheduling and timing of travel for these vehicles over the State's routes, with special consideration of routes through Birmingham. The permitting system includes an automated routing system to insure safe travel of vehicles, including consideration of the vehicles dimensions in relation to the highway feature physical clearances, and the structural stress affects of the vehicle axle weight configuration on the capacity of bridges to carry load without damage. The digital roadway network model provides a fast, reliable determination of all conditions and events along the vehicle trip path. The developed system also improves the efficiency of the process by automating the bridge analysis process and by checking all bridge clearance restrictions for overweight and oversize vehicles. Construction zone work information will be provided to alleviate congestion on the routes of Alabama, with special benefits to the Birmingham metropolitan area.

II. PROJECT DESCRIPTION

This project provides complete permit administration and financial functions in support of oversize/overweight vehicle permitting. These capabilities have been implemented on the internal ALDOT computer network, along with facilities allowing permit applicants to enter application data via the Internet. Phase 1 of the process went into production in October 2001. The system was extended with the Internet application processes in June 2002. The automated routing process has been proven to work, and to be able to provide the capabilities necessary to fulfill the project goals, by means of a pilot implementation of six selected ALDOT routes. These routes included all clearance restrictions of permanent physical features, turning travel restrictions due to interchange ramps, and bridge digital models along the routes. The pilot routes were tested with various vehicles to validate the automated approval process.

A. Project Background

This project is a component of the FY2000 State of Alabama Earmark. The project is an integral part of a major ITS initiative in the Birmingham, AL metropolitan area which seeks to reduce congestion and air pollution. Electronic Permitting for Oversize and Overweight Vehicles is a FY2000 project that will provide fast and accurate route and clearance checking and bridge analysis approval. The ALDOT proposes to integrate an automated permitting function for commercial vehicles. This will enable commercial vehicle operators to obtain automated route information and permits for oversize and overweight loads throughout the highway system. The Birmingham area will be specifically targeted. Construction zone work information will be provided from the ALDOT Third Division Office to the permitting section in the ALDOT Maintenance Bureau. The Birmingham TCC can provide real-time congested routes. When overweight or oversize loads are scheduled, timing of routes through Birmingham will be a factor in issuing permits. The Department of Public Safety (State Troopers) will be notified of any special loads requiring escort vehicles, special enforcement measures, or special coordination with ASAP service patrol units. The Birmingham TCC will, similarly, be notified of special loads as needed to manage the freeway system. The system will allow improved coordination of agencies

involved in managing congestion and the routing of oversize and overweight vehicles. The digital roadway network model will provide a fast, reliable determination of all conditions and events along the vehicle trip path. These can be key in avoiding congested sites in Birmingham. The project will also improve the efficiency of the process by automating the bridge rating process and clearance restrictions for overweight and oversize vehicles. It will provide better customer service to motor carriers by streamlining credential application, taxation, and payment procedures, and weight and safety enforcement to permit compliant operators to avoid costly delays.

B. Level and Types of Integration

The oversize/overweight permitting system provides the means to gather all information pertinent to establishing the approval of issued permits, and to provide data regarding the number and configuration of oversize/overweight vehicles traveling the road system. This information provides the various Department units with the means to approve the routing, plan for its passage in critical areas, verify travel in route, and understand the affects of various loads on the infrastructure for analysis and planning purposes. The system development utilized data from numerous sources within ALDOT to produce the digital model used for route approval. These sources included data from the Geographic Information System, highway inventory, and bridge structural analysis data. The system is integrated with the State Department of Finance for all monetary transactions. The oversize/overweight system has been designed and developed to integrate a related system that will be installed to receive and record temporary roadway restrictions such as construction, and travel time period conditions where congestion may occur. The temporary roadway restriction process will be installed in a manner which will allow access by, and input from, the Birmingham metropolitan and State highway patrol agencies

C. Institutional Involvement

The completed oversize/overweight permitting system of Phase 1 of the project involved numerous units of Alabama's Department of Transportation, and Department of Finance. These several organizational entities provided direction, information and extensive support to the development. The system groundwork has been laid to provide the services and information of the extended system to the State Highway Patrol and those municipal governments, such as the city of Birmingham, for the control and management of the movements of oversize/overweight commercial vehicles.

III. EVALUATION PLAN FOR ALDOT'S ELECTRONIC PERMITTING FOR OVERSIZE AND OVERWEIGHT VEHICLES
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The Alabama Department of Transportation developed a specific project evaluation plan. The plan has provided not only a means to verify the completion of the project implementation, but also to insure the most complete formation of requirements to be implemented. The following sections detail ALDOT's goals that were established for the permitting automation based upon a combination of needs cited by ALDOT, and observations of conditions that have been proven to yield improvements in vehicle permitting operations of other DOTs. The goals to be used as key criteria in the evaluation of all project design as well as the evaluation of the implemented system were established and employed upon completion of the development.

A. Goals And Objectives For The Vehicle Oversize/Overweight Permitting System

ALDOT recognized the need to further improve the effectiveness of the Department's vehicle permitting operation. The observations of the design review indicated that ALDOT could rightfully

be proud of its then current record in facilitating commerce; however, its success was extensively dependent upon the following:

1. The current high level of efficiency was achieved through the long experience and abilities of a very few highly trained people performing the key functions of route checking, financial management and approval of bridge capacity. The permit supervisor and one assistant were almost solely responsible for the routing of OS/OW vehicles. When one of these supervisory personnel was unavailable, permit issuance slowed substantially. When neither was available, permitting stalled.
2. Major compromises in the checking of routes were made to attain the current speed of approval:
 - a) Although hardcopy maps were available for the route clearance checking, many permits were approved based only on the experience and memory of key personnel. The supervisor was able to use his remarkable ability to know the details of the road system to quickly clear most routes without reference to formal records.
 - b) Overweight permit approvals were based upon a bridge structural analysis. However, this analysis utilized only a small number of sample bridges, not the actual bridges on the permit route. Further, the computer bridge analysis software used was approximately 10 years old. It did not utilize current bridge analysis specifications that generally provide better capacity (i.e. Load Factor Design Specifications) than the specifications of the older product.
 - c) Current construction project and temporary road restriction information was collected and posted as received, without a central, formal repository of this information being directly accessible to all permittees.
3. Accounting procedures lacked complete computer support. Permit billing, reporting, cross checking, escrow management and fund deposit steps were largely accomplished by manual effort.

The then current speed of permit issuance was dependent upon compromises that had been necessary to keep up with the permit application demand. Over time, with no resulting disastrous events, these compromises had been accepted as normal rather than as temporary, so long as no better process was available. The then current speed in permit issuance was not only to be sustained, but additionally increased in efficiency to be prepared for the continual increases in vehicle permit requirements. Since the current process had already had substantial time "squeezed" out of the formal operation by the compromises listed above, it was felt that it would be difficult to find more shortcuts to further decrease the time to process permit applications as demand increased.

The changes in technology that had occurred in years leading-up to the start of the project not only provided the means to increase processing speed, but provided the means to perform the analysis to protect public safety and protect the infrastructure that, although desired, had to be bypassed because of the reduced checking needed to speed approval. The proposed objectives, and the approaches for their achievement have been based upon upgrading the permit administration, routing and approval analysis procedures, and utilizing new computer processes which support those procedures.

The project goals for the ALDOT vehicle permitting processes can be condensed into the following three statements:

1. Adding efficiency of the permit administration process.
2. Reducing dependency on key personnel, while maintaining and improving efficiency of operation
3. Providing fast and accurate route and clearance checking and bridge analysis approval, while maintaining and improving efficiency of the permitting operation.

Of these goals, the first was explicitly stated to be the highest priority, while the second can be deduced, from general discussion and observation, to be of equal priority. Although the third goal was indicated to be of secondary priority, initiating movement in that direction, along with the first priority, was intended to achieve a goal that the Department sought for some time, but, due to technological limitations, were only able to achieve in a limited sense. The highest priority goals help satisfy the needs of the hauling industry, while the third goal indicates the Department's intent to utilize the best of the available technology to prevent a disastrous event.

Goal #1 - Add to Efficiency of Permit Administration Process

The first goal of the project was to add efficiency to the permit administration, computer by providing capabilities that eased data input, and automatically performed permit administration processes, such as: determining permit type, performing fee calculation and reporting in such a manner as to provide escrow accounting, credit card electronic commerce and user direct input through Internet facilities. This goal was to be accomplished by developing an ALDOT specific computer permit administration system that would increase the automation of the process, would distribute the process to all of the ALDOT permit technicians, organize the management of the computer based process, link it to the Department of Finance accounting system and move the application data entry process to the permittee via the Internet.

Goal #2 - Reduce Dependency on Key Personnel, while Maintaining and Improving Efficiency of Operation

The second project goal was to maintain and improve the efficiency of the then current operation while reducing the dependency on key personnel for making any but the most critical decision regarding approval of specific permit applications. This was to be accomplished by providing and distributing computer decision "tools" to several permitting persons. These "tools" allowed several persons to perform many of the routing requests completely, and to assist in those route selections that are very unique and complex.

Goal #3 - Provide Fast and Accurate Route and Clearance Checking and Bridge Analysis Approval, while Maintaining and Improving Efficiency of Permitting Operation

The third project goal was to be achieved by producing a computer based process that would automate the approval of permits for specific vehicles to travel over a requested route. This process was to have automated logic to use a digital model of the State highway network, consisting of the roadway configuration, locations of bridges and other clearances, and with in-line bridge analysis. The stated goal was to be reached in a two phased project, with the first phase being a pilot implementation having the purpose to prove the effectiveness of the concept. The first phase implementation consisted of six selected State highways, with the second phase planned to have the highway model expanded to include all routes under ALDOT jurisdiction.

B. Measures of Effectiveness

The effectiveness of the project implementation was to be measured by the following.

Goal #1 - Add to Efficiency of Permit Administration Process

The improvements in permit administration process productivity are to be measured as follows:

- Decreases in the dependence on state staff by building significant use of the Internet processes by end users.
- Reduction in the average time between permittee request for application and issuance.
- Reduction in the average size of the queue of outstanding permit requests.
- Reduction in the average amount of overtime required to keep-up with permit requests.
- Reduction in the time to complete the permit financial step from.

Goal #2 - Reduce Dependency on Key Personnel, while Maintaining and Improving Efficiency of Operation

The implemented system is to distribute the means to perform many of the key route approval steps that previously were required of the permit supervisor to all ALDOT permit technicians.

Goal #3 - Provide Fast and Accurate Route and Clearance Checking and Bridge Analysis Approval, while Maintaining and Improving Efficiency of Permitting Operation

The pilot implementation of the six routes of the Alabama highway system is to prove effectiveness of automated route approval by demonstrating that it produces the same approval results as would be the case if the best human knowledge of the highway system had made those decisions. In addition, the integrated bridge process is to prove the ability to perform structural analysis of every bridge on a route in an acceptable and timely manner.

C. Hypotheses

The key hypotheses of the project are as follows;

- The evaluation team assumes that the use of computer automation of the permit administration process will be able to increase productivity, and speed the issuance of permits without loss of correctness.
- The evaluation team assumes that the automation of the route evaluation and bridge analysis processes will be even more accurate than the then current system, and that the approval process will be faster than the manual method.
- The evaluation team believes that the facilities planned for the next phase of development will provide multiple benefits to those now realized by providing the system facilities and information to other agencies in the State, such as the municipalities and highway patrol. All of these features will be targeted to the goals of improving traffic flow and transportation safety.

D. Additional Elective Activities Performed

Although the primary focus of this first phase of the project was largely directed to ALDOT, the individually directed units of the Department provide a microcosm of the numerous individually focused State agencies that will be involved in providing information to and using the permitting system. It is expected that this intra-Department unit-blending will provide a pattern to broaden the balance of the project to its multi-agency scope. The following additional elective activities have been performed.

- Evaluating institutional issues associated with achieving cooperation among public sector agencies and documenting how they were overcome.

The first phase of the project will require the integration of the following ALDOT operational units, which will be led and coordinated by the Permitting Unit.

- Permitting Unit – The permitting unit will provide the core of the implemented permitting system. This unit will identify the statutes and define procedures that form the permit administration process. In addition, this unit will provide the means to organize all other units into a working group that provides the required supplementary information and data for system development. The permitting unit will provide the operational facilities, form the budget, and, with the Information Technology unit, acquire the computational and communication equipment.
- Bridge Unit – The bridge unit will provide the information and data defining the location of bridges on the highway network, the clearances of the bridges and structural appurtenances and the bridge model data for the analysis of the bridges.
- GIS Unit – The GIS unit will provide the digital data from which the system digital maps and digital roadway model will be formed.
- Road Inventory Unit – The roadway inventory unit will provide the locational and descriptive material to define the details of the measurements of the roadway, and the descriptions and locations of the features related to the roadway.
- Finance Unit – The finance unit will require information from the permit system for escrow reconciliation and auditing purposes.
- Information Technology Unit – The IT unit will provide technical assistance in the deployment of the implemented system on DOT workstations and servers.

In addition, the initial implementation of the project will open the communication linkage between ALDOT and the commercial hauler permit applicants.

- Providing a brief lesson-learned report on the technical and institutional issues encountered in integrating ITS components.

As part of the evaluation, a brief lesson-learned report will be produced that will consider:

- Technical issues integrating with ITS components
 - Internal
 - External
- Institutional issues integrating with ITS components
 - Internal
 - External
- Providing an evaluation report on the lessons learned in employing innovative financing or procurement and/or public-private partnering techniques.

No innovative financing, procurement or public-private partnering was used on the first phase of the project. However, ALDOT has been approached with a public-private partnering concept for the completion of the second phase. That approach will be evaluated and documented.

IV. EVALUATION FINDINGS

First Phase of the project has been completed and in operation since October 2001. An initial extension for the allowance of permit applications submitted via the Internet has been in operation since June 2002.

A. Project Outcome Based on Measures of Effectiveness

The following describes the accomplishments of the first phase of the project in terms of the project goals and objectives, and cites the measure of the project successes.

Goal #1 - Add to Efficiency of Permit Administration Process

To realize the first goal of increasing the efficiency of permit administration, computer capabilities that eased data input, and automatically performed permit administration processes were provided. These capabilities included determining permit type, performing fee calculation and reporting in such a manner so as to allow for escrow accounting, credit card electronic commerce and user direct input through Internet facilities. The following permit objectives led to Goal #1.

- Dedicated, Windows Based, Client/Server Permitting Process

This form of Permit Administration System separated the processing problems of the mainframe from those of the permit process itself. The Windows concept provided the means for user self-learning interfaces that allows for quicker assimilation by new employees, broader distribution of the operational responsibilities to more permittees and prepares the way for distributing the data entry step to haulers and wire services by means of the Internet. Although this mode of operation may not absolutely prevent the then current problems, such as loss of data or permit printing problems, the procedures that are inherent in this type of environment provided reliable operation.

- Increased Automation of Permit Administration

The completed oversize/overweight system provided numerous increases in efficiency and reliability of operation by automating many of the processes originally performed manually, such as:

- The manual steps of the current operation were reduced by increasing the automation related to permit issuance and pricing, and the determination of the type of permit and the permit fee.
- Benefits were realized through automatic faxing and automated bill preparation.
- Vehicle descriptions are retained in the system, rather than having them on file in hardcopy, form with re-entry for each associated permit.

- Increased Fee Accounting by the System

The overall computer permit accounting process was expanded to provide a full range of accounting statements and reports for review by the person(s) responsible for this function. The reports provide all cross checks necessary to verify the correctness of the System accounting. Of significant importance to the Permit Unit is the availability of a true escrow accounting system. The objectives stated here included such facilities, with the ALDOT auditing responsibilities having defined the limits and controls for the process. The project also resulted in the automated, electronic sharing of all financial data between the Permit office and Finance for reporting, reconciliation, and auditing activities.

- Management of Permit Activity

The Permit Administration System provides tracking of all permit applications and issuances, so that operators are able to determine permit status, both individually and collectively, and provides the means to prevent loss or delay.

- Management of Permits

The Permit Administration System provides the means to archive and retrieve all permits for a determined period for a rolling 37-month period.

The completion of the above listed objectives has increased productivity, as can be represented by the following:

- Prior to the implementation of the new system, this office was barely able to keep up with the workflow; many duties of the office were left uncompleted. The turn around time for a permit was at best 2-3 hours and other items such as filing and communication between supervisors and staff could not be scheduled during the workday. It seemed that we were consistently behind on every item of work.
- With the implementation of AL-PASS, the workflow is manageable, the turn around time for a permit is averaging 1 hour, and we have more time for meetings between the members of the permit office to discuss ways to improve our goals to be the best permit office possible.
- On average, about 1/2 of all permit requests are being entered and submitted directly by the carrier or permit service via the Internet, thereby reducing the state staff data entry requirements. Additional efforts are underway to get more permit services using the process. It is expected that such actions can easily double the Internet usage and potential push the average use to 75-85%.
- The average time between the permittee's application and the issuance of the permit, has been reduced by 1 hour.
- The average size of the queue of outstanding permit requests has been reduced to just a couple pending requests, providing very rapid response to all customers.
- The vehicle permit office is able to complete all routine permit requests within 1 hour.
- The time to complete the permit financial report for the Department of Finance has been reduced from 2 days to 1 hour.

Goal #2 - Reduce Dependency on Key Personnel, while Maintaining and Improving Efficiency of Operation

The second project goal of maintaining and improving the efficiency of the then current operation, while reducing the dependency on key personnel, was accomplished by providing and distributing computer decision "tools" to several permitting persons. These "tools" allowed several persons to perform many of the routing requests completely, and to assist in those route selections that are very unique and complex. The key to achieving this goal was the ability of the system routing process to use a digital highway model to automatically check the highway network for acceptable: travel paths, check the route clearances and perform a structural analysis of all bridges on the route for the specific permit vehicle axle configuration. With these routing and analysis functions available to permit technicians in an easy to operate form, and the data and process under control of the appropriate operational organizations, the system has achieved better distribution of the permitting work, as well as reducing the dependency on specific persons, so that key personnel will have the time for supervision and management. The achievement of Goal 2 has been proven through the processes that have been implemented in the pilot process fulfilling Goal 3.

The implemented system now allows permit technicians to perform many of those key approval steps that previously required the permit supervisor. With this distribution of system facilities, the permit issuance productivity has increased, and the information to make proper decisions is available. These benefits will be substantially increased when the full ALDOT highway network has been added to the system pilot digital modeling process. This feature, proven as a pilot

process in this project, will not only distribute the means to make key approval decisions, but will provide information to make safer decisions.

Goal #3 - Provide Fast and Accurate Route and Clearance Checking and Bridge Analysis Approval, while Maintaining and Improving Efficiency of Permitting Operation

The third goal of the project, of providing the effectiveness of the approval process by automating the routing and bridge analysis processes has been achieved. The individual objectives listed below have been proven with the development of the pilot project which implemented a digital highway model of six selected highways of the State. This pilot implementation served to prove the ability to achieve both the goals of reducing the dependency on a small number of key personnel for routing and approval, and providing the complete solution of analyzing each bridge on the trip for the specific vehicle configuration of the permit application.

These objectives has been proven in that the system provides permitters with computer capabilities that will determine the clearance conditions, and provides real time bridge analysis for travel along a route. The results of the computer process are presented to the operator in easily understandable terms, and, for difficult conditions, provide clear information for special handling. Key to the acceptability of the process has been the assurance to responsible Department units that their data and processes are not misused. The proposed process provides checking of a selected route, or provides automated computer route selection combined with checking and analysis. While maintaining and improving efficiency of the permitting operation, it provides fast and accurate route and clearance checking, and bridge analysis approval. The following individual objectives lead to Goal 3, and provide the support for Goal 2.

- Interactive Selection of the Permit Trip Path

The permit operator is provided with the means to describe the desired trip path through interactive selection of the routes that are displayed on the workstation screen. A minimum number of selections is required (i.e. one per route name), and each selection causes the computer process to display all connecting segments of the trip.

- Automated Clearance Checking of Selected Permit Trip Path

The clearance checking process compares the horizontal and vertical clearances of all bridges and other defined control points along a selected trip path with the physical dimensions of the permit vehicle. The checking logic determines whether the vehicle is to travel over, under or both over and under each bridge on the trip path. Clearances are properly compared for the direction of travel.

- Automated Analysis of Each Bridge for Permit Vehicle Configuration

The bridge analysis process moves the permit vehicle configuration over each bridge along the selected route, and performs a complete live load analysis and specification check for each member of the bridge. The bridge data used for this analysis was derived from the Department BARS bridge model data. The intention of a follow-on Phase 2 will be to, expand the network to cover all of the routes under State jurisdiction, and to utilize the Virtis data for bridge analysis. For bridges that fail to carry the load safely, in accordance with the Department bridge model, a simple signal is reported to the operator to so indicate, and detailed reports are provided to the bridge unit. The bridge data for the permitting process is provided by the bridge unit, and is secured from change by all other units. For bridges where BARS data is not available, the process accepts tabular data describing capacity for live load in a manner similar to the AASHTO "Bridge Formula".

- Permit Process, Clearance Checking and Bridge Analysis Combined

The clearance checking and bridge analysis processes are combined with, and initiated from, the permit administration process. The results of the route checking are clearly and simply displayed to the permitter. If the route is acceptable, the permit process should continue. If not, alternate steps may be required (i.e. re-routing, load modification, etc.), with system facilities being provided for the permit technician to perform the necessary steps.

- Automated Selection of the Permit Trip Path

The permit operator is able to request the computer process to determine the trip path by defining the origin and destination of the desired route, and the criteria to be imposed by the Department. Upon completion of the trip path determination, the computer process performs the various checking and analysis processes described above.

- Computer Checking of Temporary Route Restrictions.

The route checking process is able to provide up-to-date route restrictions to aid the vehicle routing. This facility is intended to be included in a following Phase 2 implementation project.

The pilot implementation of the six routes of the Alabama highway system has proven effective in that it has demonstrated the ability to produce the same approval results as would be the case if the best human knowledge of the highway system had made those decisions. In addition, the integrated structural analysis of every specific bridge on a route demonstrated in this phase of the project, has brought significant improvement over the original process of analyzing a set of "like bridges". The pilot process demonstrated that it would perform this goal capability without any loss in permit issuance efficiency and will reduce the likelihood of human error present in manual process operations.

General Goal Evaluation

Although not defined in the initial goal statement, it is clear that the effectiveness of the implemented system will provide several benefits beyond those already stipulated, and which will have even greater ITS value. The goals listed below can be intuitively validated, but, in general will have to await the completion of the next phase of the project before they can be measured. These goals are listed briefly below, and will become part of the second phase benefits:

- Safety Upon completion of the complete highway network model, the complete automated route analysis of all permitted vehicles over all routes will reduce the occurrences of vehicle crashes due to bridge clearances. This is one of the most devastating types of accidents that can be prevented through automation today.
- Mobility The provision of correct and quick guidance to permitters and carriers as to highway restrictions of any kind, will reduce delays in travel due to oversize/overweight vehicles traveling routes that are dimensionally unsuitable, and for which exiting may be prohibitive. The presentation of travel time restrictions as part of the permit or via the Internet will allow for improvement of travel for both the traveling public and the special carriers. Improved permit routing and speedier issuance of permits will improve carrier satisfaction, and compliance.

- Efficiency The issuance of permits that clearly state travel times to avoid congestion and which protect against wrong routing will increase highway throughput and effective highway capacity.
- Productivity The increased productivity and efficiency in issuing permits has already provided cost savings for ALDOT, and will provide cost savings to the carriers due to providing more timely approvals.

B. Lessons Learned Report

The following lessons, which are largely confirmations of initial beliefs, have been learned as a result of the project:

- Many of the DOT functions of transportation operation can be made more efficient, more quickly executed and performed with fewer human errors through the integration of processes, communication and data sources. The oversize/overweight permitting system “leaps over” the inherent organizational barricades within transportation agencies, as well as the boundaries between the carrier permittees and the DOT. The integration of process and data, and the automation of definable permit approval logic provides the means for the transportation managers and technicians to focus on the unusual and the critical problems.
- The institution of the Internet application process for the carriers was a proven success measured by the growth in the use of this form of credential request to a level of about 1/3 of all permit requests within six months of introduction. This approach affords better service to the hauling public, increases compliance due to convenience and reduces workload on ALDOT. Additional efforts are underway to allow permit services easier access to the process. It is expected this could result in 75-85% of all applications being electronically submitted by the end users.
- From an institutional point of view, once the initial negotiations between the Department units involved in the implementation of the permitting system was completed, the inter-unit operation became institutionalized, not burdensome and worked smoothly.

C. Findings from the Additional Evaluation Activities

Although the primary focus of this first phase of the project was largely on ALDOT, the Department provided a microcosm of related State agencies in that it is formed by a series of individual focuses that had to be blended together to achieve the success of this first phase of the project. It is expected that this intra-Department unit blending will provide the experience, guidance and means to broaden the balance of the project to its multi-agency scope.

- Evaluating institutional issues associated with achieving cooperation among public sector agencies and documenting how they were overcome.

The completed first phase of the project required the integration of the following ALDOT operational units.

- Permitting Unit – The permitting unit provided the core of the implemented permitting system. This unit identified the statutes and defined procedures that formed the permit administration process. In addition, this unit provided the means to organize all other units into a working group that provided the required supplementary information and data for the development. The permitting unit provided the operational facilities, formed the budget, and with the Information Technology unit acquired the computational and communication equipment.

- Bridge Unit – The bridge unit provided the information and data defining the location of bridges on the highway network, the clearances of the bridges and structural appurtenances and the bridge model data for the analysis of the bridges.
- GIS Unit – The GIS unit provided the digital data from which the system digital maps and digital roadway model were formed.
- Road Inventory Unit – The roadway inventory unit provided the locational and descriptive material to define the details of the measurements of the roadway and the descriptions and locations of the features related to the roadway.
- Finance Unit – Full automated electronic integration has been achieved where the permit system outputs all transaction information which is automatically retrieved and loaded into the Finance system.
- Information Technology Unit – The IT unit has provided full support of the process including workstation and server software installation, database server setup, and security reviews.
- Carriers and Services – Numerous communications have been made with the general public including requests for system testers, notifications of process changes, notifications of Internet system availability, and instructions on use. The public has responded well. Several users were involved in the initial system testing and helped guide the process to a successful deployment. Continuing communications remain very positive.

The completed first phase of the project required a strong integration of the permitting system with the accounting processes of the Department of Finance. In addition, the initial implementation of the project has opened the communication linkage between ALDOT and the commercial hauler permit applicants.

- Providing a brief lesson-learned report on the technical and institutional issues encountered in integrating ITS components.

The first phase of the project appears to have encountered and solved the majority of the technical and institutional issues involved in the integration of the ITS permitting system components involving ALDOT and the commercial haulers. As indicated in the topic above, the implementation required substantial integration of the focus and information of a number of Department units. To continue to succeed in the further development, the Permitting Unit must continue to execute the role of motivator of other agencies and units to realize the benefits of their participation. This will become more important as the role of the system expands to support the State's municipalities, highway patrol and other agencies. In addition, the needs for intra-State, multi-agency communication will require strong support from the ALDOT IT unit. The expansion to a system that is fully operated via the Internet will require support issues that will be an expansion of those experienced to date.

- Providing an evaluation report on the lessons learned in employing innovative financing or procurement and/or public-private partnering techniques.

The subject project has not experienced innovative financing or public-private partnering to date, other than the ALDOT consultant relationship in the implementation. However, ALDOT currently has received a proposal for the funding and operation of the future implementation in an outsourced manner. The financing of this outsourced proposal would be based partially upon transaction fees paid by the permit applicants.