NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

CONTINUOUS PROCESS IMPROVEMENT

RESULTS

B O O K

2004

Productivity Services Section
www.ncdot.org/financial/productivity/CPI

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PURPOSE

The purpose of this book is to recognize individuals, teams, and work units for their accomplishments in improving processes, projects, and programs in the Department of Transportation. The development of ideas for improvement is only the first step in the process. Many employees have great ideas for improving the way we do business. Managers, supervisors, and employees must take the ideas further by implementing the improvements and ensuring that the resources and communications are established to make them work. This takes time and energy. **This book is dedicated to those managers and employees that have developed ideas and implemented them to improve work processes and customer service in the Department of Transportation.**

This book contains many excellent ideas for improvements that can be implemented throughout the department. You are encouraged to review the projects and implement any that may apply to your organization. Each initiative contains a short description of an improvement opportunity, the action taken to make the improvement, and the results of the action. A contact person is identified at the bottom of each improvement if more details are desired.

Improving DOT One Process at A Time.

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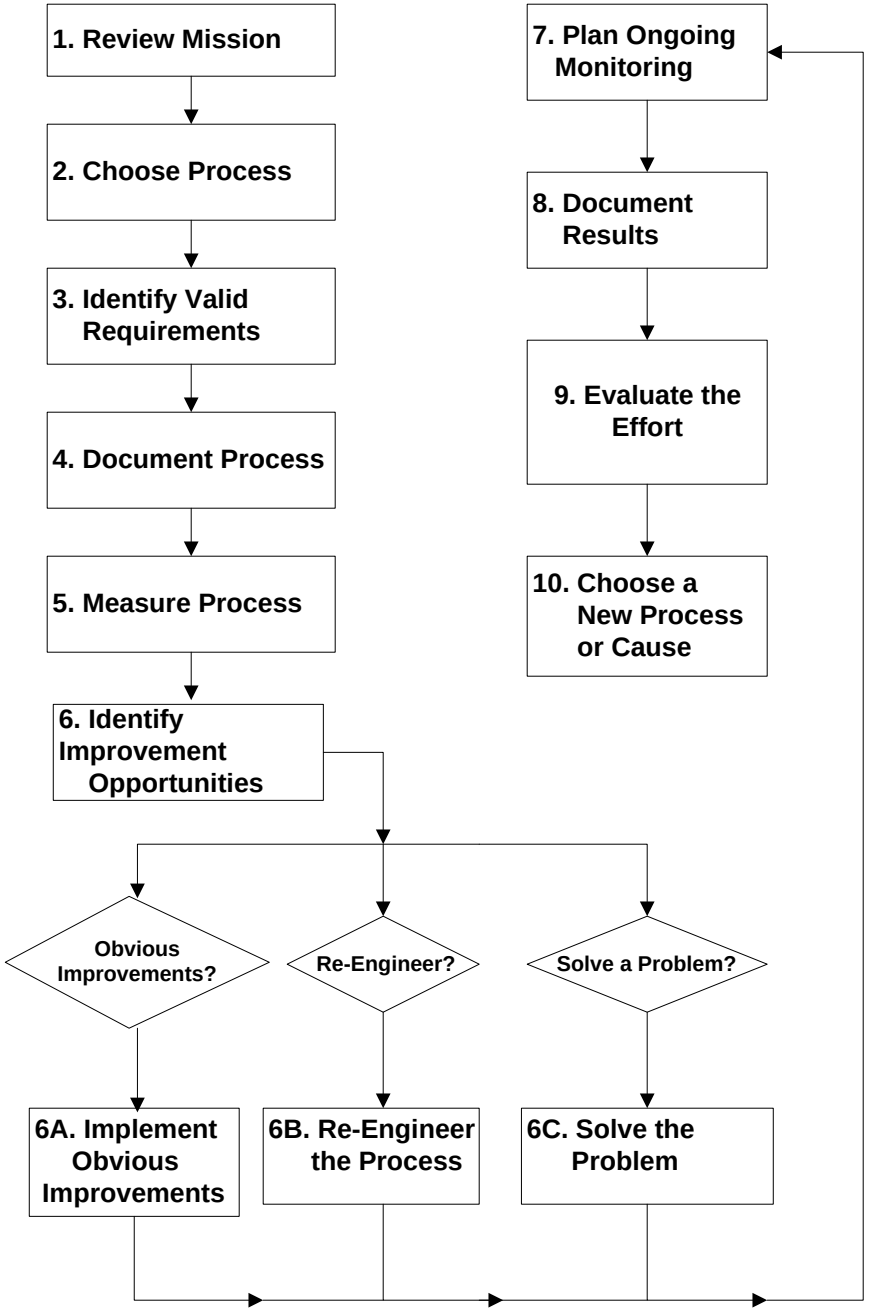
1

CPI PROCESS OVERVIEW



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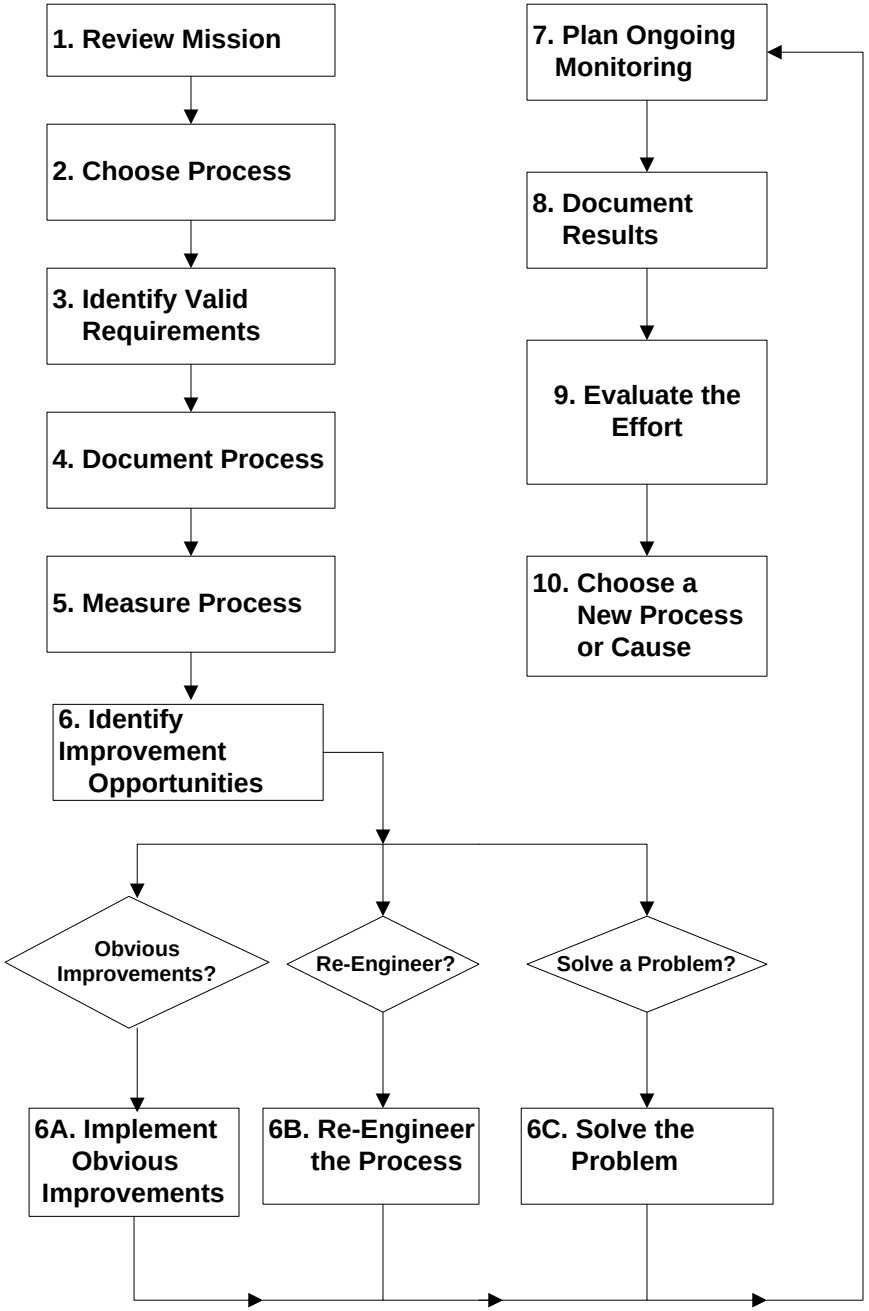

2

CPI PROGRAM GOALS, OBJECTIVES, AND PROCESS

The GOALS of the Continuous Process Improvement Program are to increase productivity and cut cost, increase customer service, and improve business processes. The OBJECTIVES are to increase employee involvement, document core processes, communicate ideas, and recognize outstanding accomplishments.

The CPI Program is a management supported and driven program. Management at all levels encourages participation in the program. The awards program encourages individuals, units, and cross functional teams to apply for recognition awards via an application process. An awards committee reviews documentation of the projects and selects outstanding projects to receive special recognition at the annual CPI Conference.

Participants may also submit applications that they have implemented as a result of projects published in this **Results Book.** Participants may prefer not to apply for a recognition award. These are referred to as "Results Only" applications.

Applications are submitted annually through Unit Managers under one of nine award categories. Three applications are selected for special recognition from each category with one applicant chosen as the winner of each category. A MOST OUTSTANDING trophy is awarded to one of the nine category winners.

Each awards category has a set of criteria that is used to judge the applications. People from all areas of the department are solicited to participate on the selection committee.

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CRITERIA

Dollar Savings

The improvement results in dollar savings through a cost reduction, a productivity increase, or a cost avoidance. The savings is the net result of all process costs including labor, materials, equipment, energy, capital, etc. The improvement impacts the DOT budget and savings are tangible and verifiable.

Labor Hour Savings

The initiative shows a reduction in labor hours to accomplish a process. The improvement shows a net reduction in the total labor hours required for effectively completing an operation that supports and enhances performance or customer service.

Internal Communication

The improvement results in more effective or efficient communications internal to the department that support and enhance mission requirements. The results could include reduction in response time, improved customer awareness, more informed employees, more effective distribution in information, or improved internal customer access to information.

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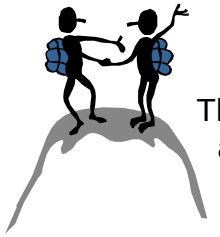
External Communication

The improvement results in more effective or efficient external (outside NCDOT) communications that support and enhance mission requirements. The results include reduction in response time, improved customer awareness, more effective distribution of information, or improved customer access to information.

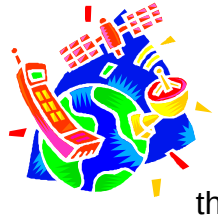
Internal Customer Service

The initiative shows improvement in areas important to internal customers' valid requirements and expectations. Improvements may be related to process outputs, complaint management, customer satisfaction, or other customer requirements.



External Customer Service

The initiative shows improvement in areas important to external (outside of NCDOT) customers' valid requirements and expectations. Improvements may be related to process outputs, complaint management, customer satisfaction, or customer contact standards.



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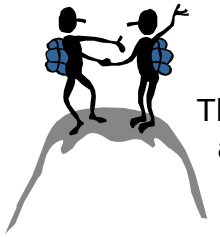

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Cycle Time Reduction

The improvement shows a net reduction in the total cycle time required for effectively completing an operation that supports the mission. The time from the beginning of a process to the end of a process is reduced to produce the product of service.

Safety Improvement

The initiative shows an improvement in safety process or accident/injury prevention that results from changes to an existing process for the general public or department employees. The initiative shows a net reduction in the number and severity of accidents, an improvement in safety procedures that reduce risk of accident or injury, or a substantial reduction in workers compensation costs.

Environmental Sustainability

The initiative shows improvement in environmental areas important to sustaining a natural, clean, and healthy environment. Improvements may be related to reducing waste, energy, and resource consumption; recycling and composting; maintaining and improving natural resources; securing a clean, safe environment; or making environmentally friendly purchases.

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Dollar Savings

Dollar Savings

34-Dollar Savings

Operations-Division 3

Team Name: District Two County Maintenance

Team Leader: Linwood Reynolds
Team Members: K.E. Fussel

Disposal of Concrete

Instead of transporting concrete to a landfill and paying tipping fees, maintenance was granted permission to bury the concrete on a jobsite.

Results

Maintenance transported 200 loads from District 2 to the jobsite in Duplin County. At at cost of $400 for tipping fees for each load, at total of $80,000 was saved in tipping fees. The hauling incurred no additional expenses.

Operations-Div 11

Team Name:
Bituminous Operations

Team Leader: Matthew Oliverson
Team Members: Ronnie Minton, Brenda Owings

Bituminous Unit Operating Year-round

Division 11 Bituminous Unit has decided to keep the Bituminous Unit intact year round rather than temporarily transferring the employees and equipment to other Units within the Division during the off season. We are now utilizing our employees year round, resulting in the Unit being more efficient and productive. In doing this, we have the teamwork and partnership of the Division Counties. Bituminous Operations has started stockpiling and snow removal, utilizing only DOT employees and equipment, rather than extensively utilizing contract Fully Operated Rental Equipment.

Prior to this change, we were paying an average of $3,246.72 per day with rental equipment to stockpile. Now we're paying approximately $2,343.84 per day with DOT personnel. This is a cost savings of $108,345.60 by Division per season just by using DOT personnel and equipment. Statewide, it could be a savings of $1,516,838.40.

Results

Division 11 Bituminous Operations Unit wants to be a role model to the State of North Carolina. We try to improve efficiency, productivity, and utilization of our resources of employees, equipment, and materials; however, we will utilize outside resources if necessary to get the job done. To implement this Statewide, dedication, teamwork, and cooperation would be required from all Departments.

Construction-Materials and Tests

Team Name: M&T Chemical Lab

Team Leader: Kelly Croft
Team Members: Mike Beasley

Substitute Vacuum Pump Oil Source

M&T purchased an instrument to test metal alloys in May 1996. It uses two vacuum pumps to keep the various chambers under vacuum when needed. The pumps must run continuously and require oil changes each 90 days at 1 liter per pump. An approved fluid must be used which costs $86.50 per liter from the instrument manufacturer. This year a source was found which will furnish the fluid directly to the Department so that the instrument manufacturer's price markup is avoided. The oil from the new source costs $8.75 per liter, creating a savings of $77.75 per oil change.

Results

Each pump's oil is changed 4 times per year. With eight change intervals yearly at a savings of $77.75 each, a total savings of $622.00 is realized each year.

Division of Motor Vehicles

Team Name: Druver & Vehicle Services

Team Leader: Wayne Hurder
Team Members: Cathy Matthews and Hearing Officers

Revision of DWI Restoration Hearing Process

From March,1988 until May,2004, the DWI Restoration Hearing process required a panel of three (3) Driver License Hearing Officers to conduct the DWI hearings. Forty (40) hearings were scheduled one week per month per panel in established hearing locations. On average, there were six (6) DWI Panels assigned each month to conduct these hearings. The cost for one Driver License Hearing Officer to travel for one week each month was averaged to cost $450.00 per week. This included overnight lodging and meals at or below the state allowed per diem. For one 3-person panel, the average cost was estimated at $1,300.00 per week or $8,100.00 per month for 6 panels which averaged $97,200.00 per year. The average cost for 7 panels was estimated at $9,450.00 per month or $113,400.00 per year.

Results

Effective June, 2004, the DWI Restoration Hearing panels were discontinued which allowed the DWI Restoration Hearings to be conducted by one DL Hearing Officer instead of three. This process allows the Hearing Officer to work in their assigned territory and reduces the travel time tremendously. The hearings are held in a setting that requires only one Hearing Officer which improved our delivery of customer service.

Preconstruction-Right of Way

Team Name: ROW-EFS

Team Leader: Grady Morris
Team Members: Sean Russell, Ivan Holloway, Jonathan Chandler, ROW Management

Right of Way Electronic File System

The Right of Way Branch is responsible for the acquisitions of property for construction. A large amount of legal documentation is generated for each claim. Right of Way is required by State and Federal Laws to retain this documentation from 2 to 15 years, depending on the type of claim. The State Records Center is where the documentation was retained. Due to the recent State Budget Crunch, State Records was no longer able to store our documentation. Right of Way had to devise a new method of storing its documentation.

After reviewing several alternatives, Right of Way initiated a system called ROW-EFS (Right of Way Electronic File System) where the information is processed, stored and archived electronically using existing computer technologies already in house. This system would incorporate all 20 Right of Way offices. New procedures had to be developed and taught to all of the Right of Way employees.

Results

The new system required a restructuring of Right of Way's existing Work Flow Process and implementation of the new electronic file system which resulted in a per year estimated savings of $1,097,800 in Labor Costs and $233,420 in miscellaneous costs.

Operations-Div 10

Team Name: Division 10, District 1

Team Leader: Matt Weiss
Team Members: Ritchie Hearne

Developer Resurfacing

Due to the large amount of development in Cabarrus County, and with the majority of these developments the developer must consturct roadway improvements. To eliminate conflict with our resurfacing contracts, we have determined that if the development is approved, and set for constrcution before we receive that upcoming year resurfacing list, and the subject development is within limits of our projects, we leave out their proposed improvements from our resurfacing program. By not overlaying their improvements, we can save tenths of miles in resurfacing and add other maps to our contract.

Results

During the past year this process has been used on three projects in Cabarrus County saving resurfacing of .79 miles and a dollar savings of $77,500.

Operations- Division 7

Team Name: Roadside Environmental

Team Leader: Ken Taffer
Team Members: G.K. Clapp, W.W. Childress, C.C. Crump, D.R. Ross, T.R. Burns

Pallet Return

Inventory and supplies that the Roadside Environmental Unit receives for our daily operation comes on pallets and gets stockpiled at the local yards. As the crews clean trash and debris from the yard, the pallets were taken to the landfill at a cost to the department.

Results

To save costs, we are now taking the pallets to a private firm that pays for the pallets, and the money is credited to the department.

For more information, call Ken Taffer at(336) 334-3192.

Labor Hour Savings

Labor Hour Savings

48-Labor Hour Savings

Preconstruction-Traffic Engineering

Team Name: Snchro Work Team

Team Leader: M. Reese, L. Kudelka
Team Members: D. Spencer, A. Smith, S.Farmer, C.Dwiggins

Access Management Signal Analysis Check List Program

The AM Group does approximately 1,000 annual analysis of Roadway Network files from private engineering firms. Data is text doc. by Signalized System Analyses Software (Synchro). The Process Management Section created an Access 97 Visual Basic application ("Signal Analysis Check List") that reads the Synchro output, analyzes the data and outputs the data in both a macro and micro report format and stores the data for future retrieval. Before implementation of "Signal Analysis Check List" it took an hour to analyze an average file however, now it only takes 2 minutes.

Results

At approximately 1,000-output documents/yr, 1000 labor hours a year were used. With "Signal Analysis Check List" only 33 labor hours are used. A savings of 967 labor hours/yr.

For more information call: Louis Kudelka 919-250-4151

Preconstruction-Traffic Engineering

Team Name:

Team Leader: G. Dennison
Team Members: L. Kudelka, A. Smith

Signing Rodeo Database

The Signing Section recognized a need for a tool that would organize and automate the registration and associated administration processes involved with the Signing Rodeo, a training program. Process Management developed an Access 97 database application that automates all recognized data centric business processes. Manually completing these tasks would take approximately 240 hours per training event.

Results

When using this application it takes only 2.5 minutes for all information to be processed for each applicant, a labor hour savings of approximately 200 hrs/ per event.

For more informatin call Louis Kudelka 919-250-4151

Preconstruction-Traffic Engineering

Team Name:

Team Leader: j. Portanova
Team Members: D. Alford, G. Dennison

Timesheet Data Entry Process

The timesheet data entry process required the same data to be entered into electronic spreadsheets twice. The process was redesigned to eliminate the second manual entry of timesheet data from the paper copy. A new spreadsheet was developed for NON-TIP employees and the Pmii spreadsheet was used for TIP employees. The first spread sheet is saved to the file server and the time entry personnel copy and paste directly into the SAP system.

Results

The labor hours used to enter payroll timesheets for about 100 people was reduced to about half for weekly savings of 1.5-2hr. (78-104 hr/yr) Additionally, the opportunity for error has been greatly reduced.

For more informatiion call Jennifer Portanova 919-250-4151

Environment & Planning-Program Development

Team Name:
Research and
Development Unit

Team Leader: R. Rochelle, R. Lakata
Team Members: R. Lakata, M. Kadibbhai, D. Schmidt, S. Lasater

Research Program Management Database (eXpress)

Due to the high volume of research projects managed by The R&D unit, the large number of internal Department "customers" involved in guiding the research and the extensive list of universities and academic researchers conducting the research, the R & D Unit embarked on a plan to better organize the project information and management procedures. A database was constructed in "modular fashion". Because of the database a higher percentage of time can be spent on assuring that research project objects are achieved and more attention is given to implementing the results.

Results

A productivity increase of approximately 20% for the unit as a whole, resulting in 1000 labor hours savings annually.

Preconstruction-Highway Design

Team Name:
Photogrammetry
LIDAR Group

Team Leader: K. Johnston
Team Members: R. Allen, D. Early, J. Gedzior, K. Johnston, M. Wroblewski

LIDAR Utilization for Design Base Mapping

Accurate elevation data is required to produce base mapping products for functional, preliminary and final design. NCDOT collects this data using photogrammetric techniques. When other sources of current and accurate elevation data are available, the Photogrammetry Unit will utilize that data. NCFMP (North Carolina Floodplain Mapping Program) collected LIDAR (Light Detection and Ranging) elevation data in 2001 and 2003 for approximately 85% of the state. The availability of the NCFMP LIDAR elevation data has improved the Photogrammetry Unit's capacity to rapidly produce base mapping products in response to catastrophic emergency events such Hurricane Isabel. It has also enabled Photogrammetry to produce significantly more accurate base mapping for functional design.

Results

The NCDOT Photogrammetry Unit has used NCFMP LIDAR elevation data on 201 projects, yielding 1756 labor hours saved and a dollar saving of $55,597.

For more information call Keith Johnston 919-250-4001

Operations-Div 10

Team Name: Stanly Maint/Equip

Team Leader: K.R. Davis
Team Members: K. R. Davis, MD. Furr, T. C. Souther

Combined Usage Tandem

We had a tandem designated to be used solely as an attenuator, which was only 10 days a year. To solve the problem, reduce the cost and increase utilization, the attenuator was taken off of the truck on which it had been permanently mounted and converted to one that could be taken on and off of another tandem.

Results

This enables the truck to be used with or without an attenuator.

For more information call M.D. Furr 704-596-2131

Operations-Div 10

Team Name:
Operations

Team Leader: J. Tucker
Team Members: J. Tucker

Tracing Scanned Documents

Due to the implementation of the SAP program, it was felt that it would be helpful to track scanned documents. A spreadsheet was developed which lists activities of scanning including all information associated with the document such as the PO number, vendor and brief description of the project. The form is kept in a 3-ring notebook for easy reference.

Results

Having needed information without going to a file cabinet saves time.

For more information call Judy Tucker 704-982-0101

Operations-Div 10

Team Name: Traffic Services

Team Leader: H. Furr
Team Members: H. Furr, T. Kirk, J. Tucker

Logo Picture Inventory

Division 10 has approximately 450 logo panel signs with approximately 280 additional vacant positions to be filled with prospective businesses. There was need for a quick way to reference location and respond back to the prospective businesses in a timely manner. Division10 created a photo reference inventory of every logo sign, every sign located via GIS and a database to track all the files. Without the photo inventory, a field investigation had to done before availability was known.

Results

The database and photo inventory reduces the number of trips to the field and saved the office approximately 5 hours/wk or 260 hr./yr. The database allows tracking of all contracts and gives a double check for accuracy.

For more information call Hurbert Furr 704-982-0101

Operations- Division 7

Team Name: Division 7 Equipment

Team Leader: Randy Richardson
Team Members: Alvin Ball

Auger Shaft Seals

Auger bearings on the tailgate spreaders were failing prematurely due to the gap on the inner side of the bearing allowing salt contact with bearing face. Some were failing in as little as six months. To address this problem seal plates and seals were fabricated and installed. The process utilized recycled road signs and supplies. Spreaders without this modification require bearings replacement twice a year, with the modifications they have had the same bearing for three years with no signs of corrosion or internal wear.

Results

68 bearings were replaced resulting in savings of 135 labor hours.

For more information call Randy Richardson 336-668-2855

Operations-Div 9

Team Name:
PC Training

Team Leader: Claude Williamson
Team Members: Brooke Crist, David Deitrik, Bill Kearns, Deborah Brown

Increasing the Opportunity for PC Training

Division personnel were experiencing difficulty with the travel time required to attend PC training classes At the same time other units taking Business Systems Improvement Project (BSIP) training were also required to travel to attend training at computerized training facilities.

Results

By working across unit lines, including the Right of Way and IT West units, PC training classes were arranged at a local training site. By working with other division PC coordinators to increase the pool of students, the opportunity existed to receive required training without the demands of excessive travel time.

For more information, call Claude Williamson at (336) 703-6500.

Construction-Roadside Environmental

Team Name: REU-Field Operations

Team Leader: Ted Sherrod
Team Members: Andy Blankenship, David Harris, Robert Covington

ERCON Database

The REU utilized a mainframe application to submit erosion and sedimentation control evaluations to Division Operations and Construction. The application had many limitations and had quickly become outdated. DOT Engineering Application Development, Highway Systems Support and REU developed a database and electronic distribution system that could be supported with laptop and desktop flexibility.

Results

The ERCON database system has increased efficiencies in data input, data management and transmission of information. It provides timely responses to environmental issues that require immediate attention.

For more information call Ted Sherrod 919-733-2920

Communications

Communications

11- Communications

Department of Transportation

NC Executive Committee for Highway Safety

Team Leader: David King/ Susan Coward
Team Members: Debbie Barbour, Peg Dorer, Terry Hopkins, Calvin Leggett, Ashley Memory, Len Sanderson, Steve Varnedoe, Robert Andrews, Fletcher Clay, Douglas Galyon, Darell Jernigan and others.

NC Executive Committee for Highway Safety

While major strides have been made in highway safety in North Carolina over the years, in 2003 there were 231,247 reported traffic crashes that resulted in 1,552 persons killed and over 134,000 injuries on our highways. After ten (10) months of coordinating the many safety initiatives within and outside of NCDOT, the N.C. Executive Committee for Highway Safety (ECHS) was formed and held its first meeting. The ECHS identifies, prioritizes, promotes and supports the AASHTO Strategic Highway Safety Plan (SHSP) in North Carolina's highway safety strategy to save lives and reduce injuries. It is comprised of six active Working Groups, each assigned a specific emphasis area to analyze problems and developing specific strategies and countermeasures.

Results

North Carolina's ECHS is and will continue to have a profound effect on highway safety within our state ensuring that all available resources are used as efficiently and effectively as possible in an effort to improve all levels of highway safety to the travelling public.

For more information, call Cliff Braam at 919-733-3915

Preconstruction-Traffic Engineering

Cyberstreet

Team Leader: Jennifer Portanova
Team Members: Amanda Smith, Jeremy Andrews, Glenn Dennison, CM

Cyberstreet Internal Bulletin Board

Employees were finding it difficult to find manuals, organization web sites, employee policies and procedures, and engineering reference materials. Also, there was a need for employees to have a central location to receive information for meetings and employee functions. In addition, employees needed a common place to store and easily access training information, personnel materials and orientation information. An internal electronic bulletin board (Cyberstreet) was created using HTML. Cyberstreet is an internal webpage that is located on the server where all employees can access it. The homepage has links to each section in our unit along with links to the NCDOT homepage and our unit's homepage. There is room to place messages about any pertinent meeting that employees need to attend and important information they need to know. Cyberstreet has links to the NCDOT internal portal, directory, and Human Resources Manual. It is a quick reference for important information.

Results

All key information can be readily updated, distributed and retrieved by all unit personnel. Seamless links move searches between the external and internal web resources.

For more information, call Amanda Smith at 919-250-4151.

Construction

Construction Career Days

Team Leader: Marvin T. Butler
Team Members: Angie Lewis

Construction Career Days

One out of every 10 workers in the United States either directly or indirectly makes his or her living in the construction industry. The shortage of skilled craftsmen and construction equipment operators creates employment opportunities. The North Carolina Department of Transportation's On-The-Job Training Program and the Carolinas Association of General Contractors (CAGC) uses its Construction Career Days Program to make high school juniors and seniors aware of the opportunities available after high school. This program allows high schools students from across the to state talk with dozens of commercial contractors and NCDOT personnel about employment opportunities and careers in the construction industry. Representatives from industry and community colleges staff vendor booths, provide information, and give students hands-on experience with the latest equipment. Students experience the latest tools and equipment used by the construction industry, ask questions and get feedback. During the hands-on exercises, students get the opportunity to view heavy equipment, talk to the operators and see demonstrations of heavy equipment in action.

Results

Construction Career Days are strongly based on partnerships of volunteers working together for youth, industry and community. Career Days partnerships reach beyond planning and conducting career day events. These partnerships also work towards enhancing career technology education, developing curriculum that better prepares students for careers in the industry and increasing the diversity of the construction industry's workforce.

For more information, call Marvin Butler at 733-7174

Information Technology- GIS

GIS Distribution Center

Team Leader: Cynthia McCleary
Team Members: Terry Norris

Defining the GIS Distribution Center

The GIS Unit infrastructure is comprised of three technical operating sections: Mapping, Road Inventory and Program & Analysis. Together these sections provide Geographic Information Systems, Mapping, and Road Inventory services to the NCDOT. In addition, the unit is working cooperatively with other state, county, and local agencies to build a statewide digital spatial database.

The GIS Distribution Center was created in 2003 to serve as the primary contact for geospatial information for the NCDOT. One of the many successful results was allowing county map creation and distribution in one central location, the GIS Unit. We experienced immediate growth receiving multiple map order requests daily.

Results

In 2004, the GIS Distribution Center needed to be **defined**. The action taken was a step-by-step look at the GIS Unit. We analyzed our unit purpose, our unit's business, and our unit's business process. The results were exciting; employee involvement, increased customer service, and improved efficiency in communications!

For more information, call L.C. Smith at 212-6002

Information Technology-Operations

ITS Operations Unit

Team Leader: Kelly Damron
Team Members: Rob Stone
and Jo Ann Oerter

Special Alert Checklist

NCDOT strives to provide a safe and efficient transportation system for its citizens. Unfortunately, accidents occur everyday on North Carolina's highways that disrupt their travels. NCDOT has many mechanisms in place to provide information to the motorists about these disruptions including a website, the 511 Traveler Information Telephone System, Dynamic Message Signs, Highway Advisory Radios, etc. These resources are typically used by individual Divisions to provide information in their local areas. Before late 2003 there was no structured process in place to assure that information was disseminated across the state using these tools. In 2003 the ITS Operations Unit created a "Special Alert Checklist" which identifies all of the methods of traveler information available to let the public know about major accidents. The user can select all of the appropriate tools for the situation from this list. Contact information is then provided in a companion notebook that allows the user to reach all of the necessary parties to begin the process of regional or statewide traveler information.

Results

In 2004 this checklist was used for 46 major accidents that significantly disrupted traffic in North Carolina. Thanks to this checklist all available traveler information tools were used for these 46 events, providing as much information to our motorists as possible and using our investments to their fullest potential.

For more information, call Kelly Damron at 919-233-2330.

Operations- Div 5

Team Name:
Environmental Pre-Let Review

Team Leader: Chris Murray
Team Members: Tracy Parrott

Environmental Pre-Let Review

The NCDOT is required to obtain various environmental permits for projects. This process involves the submitting permit drawings that depict impacts to the environment associated with roadway construction to the USACE and NCDENR-DWQ. Environmental permits state that all construction must be completed in strict accordance to the permit drawings that were previously submitted to the regulatory agencies. A comprehensive pre-letting review of active TIP construction projects in Division 5 revealed significant discrepancies at permitted sites between the roadway plans and permit drawings. These discrepancies could result in violations of the environmental permits if not addressed. The Division Environmental Supervisor identified all discrepancies and initiated modifications to the permits. Construction of projects at many permitted sites could not be completed until permit modifications were issued by the regulatory agencies. This resulted in significant project delays, as construction at the permitted sites could not be brought to conclusion in a timely manner.

Results

Division 5 personnel developed an environmental pre-let review that compares the permit drawings with final roadway plans, structure plans, erosion control plans and utility plans prior to project letting. A comprehensive review conducted at this time allows for the identification of discrepancies between the final construction plans and permit drawings. Discrepancies can be analyzed prior to construction and any subsequent permit modification, if necessary, can be obtained early in the stages of construction resulting in fewer delays to the construction of the project.

For more information, call Jon Nance at 919-560-6851

Human Resources

Team Name: T&D Work Group

Team Leader: Angela Crawford
Team Members: Malinda Singletary and Violet Hathaway

DOT Training Inventory Catalog

The Human Resources Division's customers include those applicants applying for position at DOT, as well as the 14,000 DOT employees that it serves. Since HR considers the work force the most valuable DOT asset, it is always looking for innovative ways to improve communication and customer service. With people working in every county of the state, DOT faces many challenges regarding communication and information sharing among employees. Furthermore, with many units in the department organizing and implementing various train opportunities, training had become fragmented and there was no central point of contact for information regarding what training was available to employees. To make this information readily available to employees and provide supervisors and managers with an inventory of available training so that career development plans would be easier, a DOT training Inventory Catalog was developed. The publishing of this catalog took over a year to develop.

Results

Both hard and electronic copies of the catalog are available and it is updated every 3-4 months as needed. The catalog has received rave reviews regarding the benefits it has provided to employees, supervisors and managers. Having all training information in one location, at your fingertips has reduced the amount of research normally required to chart and pursue career development.

For more information, call Angela Crawford at 662-3582

Human Resources

Team Name: DOT SECC Dept. Exec.

Team Leader: Angela Crawford
Team Members: Laurie Moser, Hope McLamb

DOT SECC Centralization

The Human Resources Division's customers include those applicants applying for position at DOT, as well as the 14,000 DOT employees that it serves. Since HR considers the work force the most valuable DOT asset, it is always looking for innovative ways to improve communication and customer service. The State Employees' Combined Campaign is no exception. For many years, the DOT campaign was fragmented with different areas of the department moving in different directions, different kick-off dates, processes and goals. State level campaign organizers directed information to central administration located in Raleigh to build support for the campaign in Raleigh/Wake County. Outside of Raleigh, employees in divisions and branches located in regional offices were receiving information from Raleigh-based division heads as well as local coordinators that often conflicted and confused regarding the process and submission of forms.

Results

To address this issue and have a campaign that imaged the department's vision of One DOT, DOT centralized, or departmentalized as it is now called, its 2003 and 2004 SECC. The result was better internal communication, teamwork and an overall successful campaign.

For more information, call Angela Crawford at 919-662-3582

Operations- Div 10

Team Name: Division 10, District 1

Team Leader: Matt Weiss
Team Members: Richie Hearne

TIP Developments

More and more developments are being constructed along TIP corridors before the TIP projects are constructed. When the development and TIP projects fall within City Limits, oftentimes curb and gutter and sidewalk are requirements for the developers to construct. I have had many projects where only preliminary plans have been developed for the TIP projects, and the projects are 5 to 10 years away. In these instances, requiring the developer to construct curb and gutter and sidewalk is useless when it will have to be torn out in the future and replaced at the department's cost.

Results

In the Town of Mt. Pleasant, a developer was constructing a business along a TIP project that is planned to begin construction in 10 years. Rather than construct the curb and gutter and sidewalk, I estimated the construction cost of each and had the develop reimburse the municipality and department for the estimated cost.

For more information, call Matt Weiss at 704-982-0104

Operations- Div 10

Team Name: Division 10, District 1

Team Leader: Matt Weiss
Team Members: Terry Morgan

County Resurfacing History Map

Our office wanted a visual representation of the roads that have been resurfaced over the past years. I used a county map and highlighted the roads for respective years that they were resurfaced. I updated it each fall and I will start to include Moving Ahead and Senate Bill Projects. The pavement condition survey is helpful, however, with the highlighted maps, you can see which roads have been resurfaced and which areas have been concentrated on very easily.

I use these maps when reviewing utility encroachment contracts. It allows me to easily review the utility route, and determine if it will be in conflict, or how strict we need to be with utility cuts in the pavement, placing spoil on the roadway, and location of the utility.

Results

Since I have developed the resurfacing contract for the past 3 years, I am aware of the roads that have been and will be resurfaced. This helps others in the office who are not familiar with the resurfacing history.

For more information, call Matt Weiss at 704-982-0104

Construction-Roadside Environmental

Team Name: Bus Placard

Team Leader: George Kapetanakis
Team Members: Helen Landi, Julie Whichard, Mike Galiano

Bus Placards

Each year trash finds its way to the 78,500 miles of roadsides maintained by NCDOT. This trash becomes litter when it hits the roadway regardless of its source. The NCDOT spends more than $12 million annually to clean up roadside litter. Providing citizens information on what constitutes litter and that litter is illegal will help change the cultural practice of disposing of trash illegally. One item, cigarette butts, accumulates by the millions along the roadsides. These are difficult to pick up and take over a decade to decompose. The toxic chemicals in cigarette filters leach out slowly over the years and negatively impact the environment. A campaign was started to inform riders of mass transit buses. Some riders smoke and dispose of their cigarettes onto the ground to snuff them out prior to boarding. These discarded cigarettes butts become litter when they are left behind on the ground. These discarded cigarettes butts become litter when they are left behind on the ground. If cited by a law enforcement officer and upon conviction, this littering offense could cost the individual a fine of up to a $1,000.

Results

Bus riders can be educated about littering by placing public service announcements inside the buses. The bus placards describe litter and ask riders for their assistance in curtailing the illegal disposal of cigarette butts and other trash. The end result is curtailing litter at the bus stops and other areas traveled. Additional litter prevention placards will be created and distributed for placement in buses at three-month intervals.

For more information, call George Kapetanakis at 919-715-3188.

Construction-Roadside Environmental

Team Name: Roadside Environmental

Team Leader: Ted Sherrod
Team Members: Various from Central & Division Environmental Units

Roadside Environmental Training/ Competition

Roadside Environment recognized the need to improve employee recognition for knowledge, skills, safety and environmental awareness as related to performance of the major operational functions of the unit and Highway Division. A 3-year training/ competition program was developed for personnel to promote work zone safety and environmental stewardship. It involved one year each in Roadside Roundup, Hydrodeo and Landscape Roadeo. Participation from all 14 Highway Divisions was strongly encouraged. They had to meet the minimum criteria regarding classification, licenses and skill block completion. The format consisted of various stations with obstacle courses for trucks, targeted spray application areas, written examination/work exercises, equipment appearance/condition, troubleshooting, safety checklists, inspections, plant/weed identification, etc. The overall training experience was enhanced by lectures and tours. First and second place awards were presented at the NCDOT Roadside Environmental Annual Conference held in December.

Results

The result of the competition/training has caused an increase in overall skills & knowledge, as well as enhanced safety & environmental awareness among the Division Roadside Environmental personnel. This opportunity for competition & recognition has been well-received by the divisions.

For more iinformation, call Ted Sherrod at 919-7233-2920

Construction-Roadside Environmental

Team Name: Salt Poster

Team Leader: Ken Pace
Team Members: Matt Lauffer, Helen Landi, Lonnie Watkins

Salt Works Poster

The Highway Stormwater Program (HSP) has been trying to develop a simple but effective means of communicating with the various NCDOT field operation units across the Sate concerning stormwater related issues. HSP wanted to develop some type of media that defined potential stormwater impacts and preventive measures for various NCDOT operations.

The HSP first wanted to relay environmentally sound steps for applying salt to roadways during the winter. Based on comments received from two earlier maintenance focus groups, the idea emerged to develop a poster on each stormwater topic of concern.

Results

The first developed poster dealt with Salt Works and was two sided in color on 8.5x 11 cardstock. The front highlighted various salt impacts and preventive measures. The reverse contained a more in-depth discussion of each salt operation topic. The poster was distributed to all road maintenance facilities.

For more information call Bob Holman (919)733-2920

Construction-Roadside Environmental

Team Name: Scenic Byways Marketing

Team Leader: Jeff Lackey
Team Members: Helen Landi

Scenic Byways Marketing Video

It was determined that an additional means was needed for marketing N.C. Scenic Byways. The N.C. Agency for Public Telecommunication was hired to produce a video for marketing purposes. The video is available on compact disc and will be made available to libraries, tourism organization and other interested parties in North Carolina and outside the state.

Results

Customer Service

Customer Service

18-Customer Service

Division of Motor Vehicles

Team Name:
Motor Carrier Internet Renewal

Team Leader: Tony Spence
Team Members: Teresa Cone, Tracey Byrd, Terry King, Eric McCracken, Marvin Shelton

Motor Carrier Internet Renewal

Motor carriers engaged in interstate commerce transporting federally regulated goods require a Single State Registration Receipt (RS-3). Motor carriers engaged in interstate commerce transporting goods exempt from federal regulations in North Carolina are required to have a Bingo Stamp affixed to a federal D-1 Cab Card. The motor carrier was limited to thirty-nine locations within the state where they could renew the motor carrier accounts. Otherwise, they had to rely on using the U.S. mail service to renew their accounts. This presented problems, including 1) having to rely on the U.S. mail service, 2) long waits to receive services, 3) inconvenience, and 4) large fines from citations for failure to have required documents by the renewal deadline. To minimize problems, motor carrier internet renewal was developed and implemented in January 2003. This consisted of the Single State Registration Renewal and the Interstate Exempt Renewal.

Results

The new internet renewal provides 1) a convenient and secure method to renew accounts via the internet, 2) allows payment to be made by electronic funds transfer or credit card, 3) provides the option for common or contract carriers to print their new registration receipt at their location, 4) reduces walk-in customers, 5) reduces mail applications, and 5) brings prestige to the state by providing better service to the large trucking industry of North Carolina.

For more information, call Tony Spence at (919) 861-3332.

Division of Motor Vehicles

Team Name:
IPR Clearinghouse

Team Leader: Tony Spence
Team Members: Teresa Cone, Lynn Cooper

IRP Clearinghouse

As a member of the International Registration Plan, there exists a reciprocal agreement between the jurisdictions to collect all monies due from each IRP registrant for all jurisdictions of travel, followed by monthly disbursement in a timely manner. This process presented several problems, including the manual process of mailing recaps/transmittals and checks each month to all jurisdictions, not receiving monies due from other jurisdictions in the timeframe established by IRP, Inc., loss of revenue from interest on monies not received in a timely manner, and reissuing checks that were lost in the mail.

To reduce these problems, North Carolina IRP joined the IRP Clearinghouse in July 2001, Currently, 43 jurisdictions participate in the program.

Results

Participation in the IRP Clearinghouse results in no hardcopy recaps/transmittals having to be sent out, thereby reducing materials costs. In addition, manual checks do not have to be issued for fees due. North Carolina earns revenue from the interest accrued on monies due to other participating jurisdictions because of the netting process of paying only the difference in the total fees due to the clearinghouse.

For more information, call Tony Spence at (919) 861-3332

Division of Motor Vehicles

Team Name:
IRP Internet Renewal

Team Leader: Tony Spence
Team Members: Teresa Cone, Tracey Byrd, Terry King, Eric McCracken, Barbara Daniel

IRP Internet Renewal

The interstate trucking industry in North Carolina was limited to two locations in the state (Raleigh and Charlotte) to process their annual IRP renewal application. The only other option for renewal was by mail. The annual IRP renewal period for the approximately 12,000 North Carolina based carriers was open from January 1st to February 15th each year. This presented problems for carriers and service providers, including a large number of customers at each of the two renewal locations during the renewal period, long waits for customers to receive services, having to rely on the mail service, and employees working mandatory overtime. To resolve these problems, the IRP internet renewal was developed and implemented in January 2002.

Results

The new internet service provides a convenient and secure method in which apportioned fleets can easily renew, while allowing payment to be made by electronic funds transfer. Applicants can now print their new registration credentials at their location. The program means that customers to do have to physically go to an IRP office, which reduces walk-in customers and mail volume at each of the two IRP locations. In addition, this program establishes national leadership in the IRP community, bringing prestige to the state of North Carolina. The program also accomplished the first step in allowing North Carolina to be a federally mandated CVISN (Commercial Vehicle Information Systems and Networks) state.

For more information, call Tony Spence at (919) 861-3332.

Preconstruction-Traffic Engineering

Team Name:
Design Manual

Team Leader: Greg Fuller
Team Members: Richard Mullinax, Pamela Alexander, Cheryl Bitting

Design Manual

The ITS and Signals Unit's Design Manual is used by private engineering firms, municipalities, and others, in addition to in-house staff to provide guidance in the design of signals and ITS. This manual was only available in paper format, causing delays in getting the information to the recipients.

Results

The Design Manual is now available on the NCDOT website resulting in instant availability of the information, reduced printing and postage costs, and reduced employee time in distributing the manual. The Design Manual may be viewed at:

http://www.doh.dot.state.nc.us/preconstruct/traffic/tmssu/ws/disclaimer.htm

For more information, call Greg Fuller at (919) 733-8333.

Operations-Div 14

Team Name:
Division 14
Maintenance

Team Leader: Brian Burch
Team Members: Division 14 Maintenance Staff and Division Engineer

Secondary Paved Road Improvement Program

Our unit has been unable to fully utilize all of our Secondary Road Funds in recent years due to the lack of available right of way and environmental issues on unpaved secondary roads in priority. Several Districts had begun to pursue improvements to the secondary paved road system to expend these funds. Additionally, G.S. 136-182 was amended to allow the expenditure of Secondary Trust Funds for safety improvements on secondary paved roads. Recognizing this, we elected to pursue a priority system similar to the unpaved secondary road priority rating system to assist in determining which secondary paved roads to attempt to pave. A team of Transportation Engineers was assembled that had experience in constructing and maintaining roads within Division 14. After a series of meetings and discussions, this team developed the "Secondary Paved Road Improvement Program" document. This document is used to determine the priority order in which secondary paved roads will be attempted for improvement. This document also provides guidance to the engineer on the ideal typical section based on service to be provided in the design year.

Results

Results from the study have been: improved public relations due to a defendable program base on sound engineering principles, ability to stake future projects in advance which grants more time for right of way acquisition, the assurance to the engineer that the roads needing the most attention are being programmed, and continuity throughout the Division on which roads to program.

For more information, Call Brian Burch at (828) 586-2141.

Division of Motor Vehicles

Team Name:
Fraud Unit

Team Leader: R.E. Flaherty
Team Members: R.E. Flaherty, K.L. Cassidy

New Fraud Unit

The Fraud Unit was created in September 2003 within the License & Theft Bureau and is responsible for identifying fraudulent documents. The unit also assists citizens who are victims of fraud by working with local, state, and federal agencies. The unit has two certified instructors who have been trained by the American Association of Motor Vehicle Administrators. They will train DMV employees in the recognition of altered or counterfeit paper and plastic documents.

In keeping with the DMV Commissioner's mandate of one DMV, the Fraud Unit also works closely with all DMV sections to ensure fraud is not committed against the division. This ensures that records and files are accurate and that precise information is provided. It will also help to safeguard files from contamination and fraudulent information from being received, both of which will save time and money.

Results

The Fraud Unit now tracks all driver license and title frauds that are assigned to inspectors for investigations, enabling the bureau to provide accurate data for review. A public awareness program has also been developed, using posters and brochures. Both of these items provide information that citizens can use to help prevent fraud as well as who to contact if they become a victim of identity theft.

For more information, call R.E. Flaherty at (919) 861-3185.

Construction-Material and Tests

Team Name:
Cylinder Caddies

Team Leader: Sam Frederick
Team Members: Same Frederick, Brian Hunter, Randy Pace, Mike Beasley

Plastic Cylinder Crate for Concrete Cylinder Molds

The Physical Testing Lab of the Materials and Test Unit is responsible for performing compression tests on 4x8 concrete cylinders made out in the field. These cylinders represent the concrete used on NCDOT projects. It is very important that the top of the cylinders be completely level. It is also important the cylinders are not damaged when being transported to the laboratory. When the fresh concrete is cast in the cylinder molds they are supposed to be taken to a safe, level location to set up. In many instances the cylinders were set on uneven ground or they would tip over resulting in crooked cylinders. When cylinders are received in our lab considerable work went into cutting, grinding, and measuring any uneven cylinders. Another common problem was cylinders being damaged while being transported to the lab if they became loose in the vehicle. Again, once they were received, extra work had to be done in order to make the cylinders testable.

Results

To resolve these problems, plastic crates similar to the ones used by soda distributors were purchased and made available to personnel in the field making the cylinders. These crates hold eight cylinder molds in an upright position. The crates make it much easier to level the cylinders while curing and makes transporting much easier. One-fourth as many trips are made from the site where the cylinders are cast to the truck and the likelihood of dropping a cylinder and suffering an injury is reduced.

For more information, call Sam Frederick at (919) 733-7091.

Construction-Roadside Environmental

Team Name: Adopt-A-Highway Coordinator's Manuel

Team Leader: George Kapetanakis
Team Members: Anne Walker, Allison Wait, Helen Landi, Julie Whichard

Adopt-A-Highway Coordinator Manual

The State of North Carolina established the first Adopt-A-Highway (AAH) program in 1988. Each year the program saves taxpayers up to $4 million in labor costs associated with roadside litter cleanup. NCDOT administers the program through the Roadside Environmental Unit's Office of Beautification Programs. The AAH program incorporates the participation of 56 statewide coordinators at the county level. In some cases one coordinator may have responsibility for multiple counties.

It is common for coordinators to rotate out of their positions. New personnel coming in as coordinator are immediately immersed into administering the program with minimal training. Satisfaction of the coordinators and other volunteers diminishes with the lack of program knowledge. To improve satisfaction within the AAH program and fill the knowledge void for new and veteran coordinators, it was necessary to provide an *AAH Coordinator's Manual* for reference.

Results

The *AAH Coordinator's Manual* begins with a history of the program and continues with answers to fully equip the coordinator with the knowledge to professionally administer the program. By providing the manual, AAH volunteers' expectations and satisfaction are greatly enhanced. At the same time the manual increases the efficiency and effectiveness of the AAH Coordinators.

For more information, call George Kapetanakis at (919) 715-2553.

Operations-Div 7

Team Name:
Division 7 Construction

Team Leader: Brad Wall
Team Members: D. Ferguson, B. Norris, D. Huffines, B. Smith, C. Kirkman

Storm Relief

Due to the large number of Interstate and US highways that run through the division, each construction office has been assigned to a county to help the maintenance camps during storm events. Each maintenance camp has been allowed to use the construction personnel to best suit their needs. The construction personnel have been used to follow contract snow removal crews, help plow snow, and help clear debris from roadways.

Results

The cooperation between construction and maintenance allows for maintenance units to clear the roadways faster due to the increase in forces on the roadways.

For more information, call Kris Lorenz at (336) 334-3228.

Operations-Div 7

Team Name:
Division 7 Construction

Team Leader: Brad Wall
Team Members: D. Ferguson, B. Norris, D. Huffines, B. Smith, C. Kirkman

Snow and Ice Removal

Due to the large number of roads that are in the division, residential streets were the last to have snow and ice removed. This caused an increase in the number of calls and complaints from the traveling public who were not able to reach the main roads. To address this problem, each construction office has been assigned at least one vehicle that is equipped with a snowplow. These vehicles are assigned to a county maintenance camp and are used for clearing residential streets during a snow event.

Results

Having these vehicles helps in allowing people to return to their daily routines faster.

For more information, call Kris Lorenz at (336) 334-3228.

Information Technology-Operations

Team Name:
511 Working Group

Team Leader: Jo Ann Oerter, Kelly Damron

Team Members: Patty Eason, Buddy Murr, Ashley Memory, Steven Hulsey, Debbie Collins, Max Tate, Brent McKinney, Christie Rushing, Laurie Barrett, Jeff Crouchley, Tom Parker, Sherry Yow, Cheryl Evans, Jeff Dale

511 Travel Information Line

Travelers in NC want access to information about their trips. Several agencies within the Department of Transportation and within other public agencies have access numbers that the public can call to retrieve information. However, there was no single number that a caller could dial to access these information resources within the state. A caller must remember all the numbers to each individual agency to obtain information they desired.

The NC 511 system is a comprehensive multi-modal voice activated/voice response system that encompasses many of the different agencies that provide travel information to our customers into a single phone call. The NC 511 system provides real time travel information on impacts to our roadways due to usual events and/or weather. The system also acts like a “speed dial” to various other agencies.

Another feature of the NC 511 is that it has the capability of a “floodgate message” that allows NCDOT to input an event that is having a high impact on travel in NC (i.e., AMBER Alert).

Results

The NC 511 travel information line is a voice activated system that has the capability to handle up to168 calls at one time; 72 callers are able to access all information offered by NC 511 and after that, another 96 callers are placed into a queuing system. While in the queuing system, callers can hear the floodgate message and all other information with the exception of road condition information.

For more information, call Jo Ann Oerter or Kelly Damron at (919) 233-9331.

Division of Motor Vehicles

Team Name:
Call Center
Consolidation

Team Leader: Paula Windley
Team Members: Alicia Jenkins, Tony Spence, Portia Manley, Don Ferrier, Linda Hill, Angela Avery, Henry Estes, Andy Jackson, Pam Guptill, Sonya Stafford

Call Center Consolidation

When customers contact the Division of Motor Vehicles they are given the option to select from three separate service areas; Vehicle Registration, Drivers License, and Liability Insurance. Once the customer has selected a particular call center the call is then transferred to a customer service representative for assistance. If the customer's question exceeds the knowledge of the answering customer service representative the caller would then have to be placed on hold and transferred to another call center. This in turn increased the wait time for customers by placing them back in queue. Upon review of the present call center system, it was decided to combine the three call centers to form a consolidated call center.

Results

Combining the three call centers allows customers the option of inquiring among Vehicle Registration, Drivers License and Liability Insurance without having to be transferred. Call center cross training was implemented on October 4, 2004 which involved 80 customer service representatives as well as supervisors. Cross training enabled the customer service representatives to better assist the general public by increasing their knowledge of the three service areas.

For more information, call Paula Windley at (919) 861-3332.

Environment & Planning-Program Development

Team Name:
Program Analysis Unit

Team Leader: Dr. Moy Biswas, P.E.
Team Members: Chris McAdams, Laurie Smith, Bert Tasaico

State Infrastructure Bank (SIB) Management

As North Carolina grows, many local needs for safe and efficient transportation will go unmet. Necessary transportation improvements will be shelved because of strained local budgets that meet only minimum public requirements. Transportation projects will be passed over from year to year for lack of resources to meet the local financial match responsibility. A small town or rural county may have limited revenue for basic services and lack a large enough cash reserve to match many federal and state transportation programs.

The State Infrastructure Bank (SIB) arose out of the need to improve, rehabilitate, and renovate transportation facilities. The Department of Transportation will utilize reserve balances and cash flows for loans to local governments and transportation authorities to stimulate and advance needed projects.

Results

With a SIB in place, the local cost on transportation projects may be amortized over longer periods of time. The SIB program is one way for North Carolina to apply innovative financial techniques to address growing transportation needs. NCDOT will operate the SIB as a self-sustaining, growth-oriented fund, and will ensure that all appropriate federal, state and local planning and programming requirements are satisfied.

For more information, call Moy Biswas at (919) 714-2465.

Human Resources

Team Name:
Training &
Development

Team Leader: Bev Saylor
Team Members: Malinda
Singletary, Ryan Nolan

T & D On-line Calendar

The Division of Human Resources' customers includes not only those applicants applying for positions at NCDOT, but also the 14,000 department employees that the division services. Since Human Resources considers the workforce the most valuable NCDOT asset, it is always looking for innovative ways to improve customer service. With employees in all counties of the state, NCDOT faces many challenges regarding communication and information sharing among its workers.

The Training & Development Section of Human Resources wanted to provide better customer service by making its training course schedule available to employees online. After management approval was gained. A committee was formed to discuss how the new process would work. The committee included an administrative person, a trainer, and a web developer from IT.

Results

The results of an online calendar offer a better tool to communicate what training is available, when, and where. The calendar is available 24 hours a day, seven days a week. It has reduced the number of calls the Training & Development Section receives regarding training that is being offered. The calendar is located at http://www.ncdot.org/services/personnel/training/.

Human Resources

Team Name:
HR Focus Group

Team Leader: Angela Crawford
Team Members: M. Bogan, P. Broadhurst, H. Dickens, D. Domico, A. Fanelli, A. Faulk, G. Herring, R. Hicks, K. Johnson, A. Olive, N. Sawyer, S. Sheppard

Career Banding, SBP, CBP Procedures Manual

The Department of Human Resources' customers not only includes those applicants applying for positions, but they also include the 14,000 DOT employees the division services. Since HR considers the work force to be the most valuable DOT asset, it is always looking for innovative ways to improve communication and customer service. With employees in each county of the state, DOT faces many challenges regarding communication and information sharing. As the department implemented more Career Banding, Skill Based Pay and Competency Base Pay programs, HR identified a need for consistency among programs and across occupational areas, and for better communication on these programs. One way to ensure consistency, better communication, and improved customer service was to provide a procedures manual to each division, section and unit to serve as a foundation for individual program development.

Results

Following management approval, a committee was formed to develop the procedures manual. The committee included several employees from each section of HR. The manual serves as a guide and tool for each program and should be used and incorporated in the development of individual program policies. The manual is available online at:
http://www.ncdot.org/services/personnel/manualandpolicies/

For more information, call Angela Crawford at (919) 662-3582.

Human Resources

Team Name:
SBP/CBP Database Systems

Team Leader: David Alford
Team Members: Lloyd Best, Julia White, Cora Bright, Paul Maraijko, Kuy-May Wu

SDP/DBP Database Systems

The skill based pay and competency based pay database systems were each independently run. Efforts have now been made to standardize them and make them more user friendly. One of the ways that this has been accomplished is by tying the personnel main frame system information to the databases. A person entering the data only has to type in the personnel number of the employee and all data fields are populated.

Results

This has helped cut down on the amount of data entry as well as ensuring a more accurate product.

For more information, call Angie Fanelli at (919) 733-2987.

Human Resources

Team Name: Profile Focus Group

Team Leader: Angela Crawford
Team Members: Malinda Singletary, James Merricks, Joseph Johnson

Employee Training Profile Management System

The Department of Human Resources' customers not only includes those applicants applying for positions, but they also include the 14,000 DOT employees the division services. Since HR considers the work force to be the most valuable DOT asset, it is always looking for innovative ways to improve communication and customer service. With employees in each county of the state, DOT faces many challenges regarding communication and information sharing. Since the implementation of Skill Based Pay and Competency Based Pay, training (which is a key element in these programs) has become the focus of customer service and communication improvement projects. With many sections/units conducting and tracking training, records and data management was fragmented. Also, it was frustrating to employees trying to track their training and to managers trying to report and analyze training data. To resolve this issue, a committee was formed to develop a web-based application to serve the needs of all training groups. It would give employees and managers easy access to records as well as better tools for productivity and efficiency.

Results

Since its implementation, this system has given employees unlimited access to their training records and data. It has allowed management to query the system and provide reports. All information is in one location. Last year the system had 280,758 hits. It currently maintains over 400,395 training records and lists over 3,757 courses and information. The system can be found at: http://www.ncdot.org/services/personnel/.

For more information, call Angela Crawford at (919) 662-3582.

Human Resources

Team Name:
SBP/CBP Work Group

Team Leader: Angela Crawford
Team Members: Angie Fanelli

SBP/CBP Training Toolbox

The Department of Human Resources' customers not only includes those applicants applying for positions, but they also include the 14,000 DOT employees the division services. Since HR considers the work force to be the most valuable DOT asset, it is always looking for innovative ways to improve communication and customer service. With employees in each county of the state, DOT faces many challenges regarding communication and information sharing. As the department implemented more Skill Based Pay (SBP) and Competency Base Pay (CBP) programs, the SBP/CBP Training Work Group noticed a need for consistency among various training programs across the state, and a need for tools to help divisions, sections and units develop their SBP/CBP training programs in an efficient, effective and consistent manner. A SBP/CBP Training Toolbox was created.

Results

The toolbox serves as a guide and model for individuals involved in the design and development of SBP and CBP training programs. The toolbox allows divisions, sections or units to focus on other aspects of SBP or CBP program development by providing a foundation of training tools, forms and information that only needs minor revisions to fit each program's specific goals and needs.

For more information, call Angela Crawford at (919) 662-3582.

Human Resources

Team Name: LE CBP Training

Team Leader: Angela Crawford
Team Members: Tracy Keel, James Merricks, Joseph Johnson

LE Training Request System

The Department of Human Resources' customers not only includes those applicants applying for positions, but they also include the 14,000 DOT employees the division services. Since HR considers the work force to be the most valuable DOT asset, it is always looking for innovative ways to improve communication and customer service. With employees in each county of the state, DOT faces many challenges regarding communication and information sharing. The old training request process included a long paper trail from the employee, to the supervisor, to the training administration unit for approval or denial. Compiling data on requests, approvals and denials was a cumbersome process of going through numerous files. The License & Theft Unit wanted to streamline the request process and make it easier for management to monitor and track the training that had been requested, approved or denied.

Results

A web-based computer application was developed which allows employees to request training electronically to their supervisor. The supervisor and/or the training administrator can approve or deny training electronically. All parties involved are then notified of the transaction through e-mail. Additionally, the system tracks and records all transactions, making reviews and evaluation more efficient and effective. Since its implementation date in October 2004, the system has been used over 3,400 times.

For more information, call Angela Crawford at (919) 662-3582.

Operations-Div 10

Team Name: Charlotte Equipment

Team Leader: Jacob McDaniel
Team Members: William Faulk, Rick Mabry

Interstate Salt Brine Application Equipment

To allow for pretreatment of Interstates 77 and 85 with brine, two used 5000 gallon chemical tankers with chlorobutyl linings to prevent corrosion were purchased. These units were delivered to the Charlotte Equipment Shop where preventive maintenance was performed on all lighting and brake systems. Each unit was equipped with a hydraulic driven water pump, electrical control valves, spray nozzles, and cab mounted controls. This retrofit allows the operator to choose two or three lanes of coverage from the operator's seat. Two Road Oil Unit road tractors not being used during snow and ice removal were used to pull the tankers. The tankers were also equipped with hoses and valves to allow them to transport brine product from the brine plant to several remote storage locations within Division Ten.

Two smaller hydroseeders from the Landscape Unit were used to apply brine on the on/off ramps and overpasses on the interstate routes. The hydroseeders were retrofitted with electrical valves, spray nozzles and cab controls that can spray one or two lanes from controls in the cab.

Results

All units were completed in early winter of 2003 and Division Ten safety personnel conducted operation training. All units were operating during the winter for pretreatment of Interstates 77 and 85. All performed very well.

For more information, call Rick Mabry at (704) 596-2131.

Operations-Div 10

Team Name: Monroe Shop

Team Leader: Edward Hill
Team Members: William Faulk, Tommy Staton, Trey Perry, Freddie Paul

Hydraulic Hose Machine

The Monroe Shop did not have the equipment to fabricate hydraulic hoses. When needed, the hoses were ordered or purchased from outside vendors.

A hydraulic hose crimp machine was purchased for the Monroe Shop, and the fittings and hoses were added to the shop's parts inventory.

Results

When hoses are needed they can now be made up on site. This greatly reduces equipment downtime and saves on equipment repair cost.

For more information, call Edward Hill at (704) 283-6242.

Operations- Division 7

Team Name:
Alamance
Maintenance

Team Leader: Michael Veneable
Team Members: April Hurst, Patricia Phillips-Ayers, Danny Strickland, Mary Lange

Skill Based Pay Learning Improvement

According to the National Institute for Literacy, “more than 20% of adults read at or below a fifth grade level.” In the course of developing the CPI project, we discovered that 25% of our transportation workers have significant literacy needs. To overcome this problem, the CPI team created several Skill Based Pay (SBP) books on tape. A team member reads the books aloud and records himself or herself on tape so that employees with reading difficulties can participate in the SBP program without being embarrassed about their educational limitations.

Results

As a result of this program, several employees were able to complete the Transportation Worker I skill blocks and advance their careers. In one case, an employee participating with the books on tape found his confidence had improved, prompting him to enroll in the state literacy program.

For more information, call Michael Venable at (336) 570-6833.

Operations- Division 7

Team Name: Team Fogleman

Team Leader: Mark Fogleman
Team Members: A.S.T. Paving Crew

Use of Light Weight Aggregate

Loose aggregate on asphalt surface treatments has always been one of our major concerns. Complaints from property owners have been received due to excess aggregate that had been broomed into their yard to allow for road painting. Tort claims for cracked windshields and chipped paint have resulted. To solve this problem, we looked to the light weight aggregate suppliers in North Carolina for a material that has the same gradation of 2-MS sand. This enabled us to use the light weight aggregate screenings on our last application of asphalt emulsion to lock the quarried aggregate in place. This process allowed us to drop the final application of asphalt emulsion from .2 gallons per square yard to .16 gallons per square yard. This also enabled us to use only five pounds per square yard of light weight aggregate screenings versus 12 pounds per square yard of quarried aggregate. Light weight aggregate screenings that did not adhere to the asphalt emulsion were blown to the right of way and dispersed.

Results

The final results have been excellent in that we have not had a single complaint from loose aggregate in a home owner's yard or a tort claim for cracked windshields or paint chips since implementing this process in April 2003.

For more information, call Mark Fogleman at (336) 334-3192.

Cycle Time Reduction

Cycle Time Reduction

Preconstruction-Highway Design

Team Name: Plan & Permit Review Process

Team Leader: Ron Allen
Team Members: Art McMillan, Jay Bennett, David Chang, Phil Harris, Dewayne Sykes, Ricky Keith

Plan & Permit Review Process

Design plans and / or recommendations from the Roadway Design Unit, the Structure Design Unit, the Geotechnical Unit, Hydraulics Unit, Roadside Environmental, Traffic Control Unit, Utility Sections, Traffic Engineering Branch, and the Division Offices are an integral part of the permit drawings used for the Department's permit application submittal to the U.S. Army Corps of Engineers (USACE), Division of Water Quality (DWQ), and Division of Coastal Management (DCM). In order to improve the accuracy and coordination between the permit drawings and roadway design plans, a revised process is needed that will provide final plans earlier in the process. In other words, there needs to be a time when design changes that occur beyond that point are the extreme and not the norm.

To allow this to happen, procedural changes are recommended to the project development process that occur on a project between the public involvement phase until letting. Key groups, i.e. Division, Congestion Management, Utilities, Right of Way, and others, will partner with the Highway Design Branch earlier in the design decision making process.

Results

This new process causes certain major activities to occur earlier in the project development process which, coupled with proper "stake-holder" coordination, will allow for earlier design decisions, earlier plan completion, fewer plan changes, and fewer environmental permit modifications.

Operations-Asset Management

Team Name: Bridge Maintenance

Team Leader: Mike Summers
Team Members: Don Idol, Mulkey Engineers, Hydro Tech

Hydro Demolition

A Process was needed to reduce the time need to rehabilitate a bridge deck for a project in Bertie County. The project would take 18 months using standard methods forcing traffic to be detoured for 50 miles during the rehabilitation of the structure. A project in Columbia, SC was using the Hydro-Demolition process for dual three lane structures on I-77. Each structure was approximately 5500 feet long. The Bertie County structure is approximately 1 mile long. Both structures in SC were completed and open to traffic in 25 days. The Bridge Maintenance Unit set up a pilot project using the Hydro-Demolition in Greene County. The Greene County project, using our standard method of deck rehabilitation would have taken 14 weeks. Using Hydro-Demolition, the project was complete and open to traffic within 2 weeks. Using this project on the Bertie County project will reduce the time from 18 months to 30 days.

Results

For the Greene County project time was reduced from 14 weeks to 2 weeks saving 85.7% of required time. In addition the project, using the new process, saved $230,205.42.

Preconstruction-Traffic Engineering

Team Name: Signing Electrical Squad

Team Leader: Ayman Alqudwah
Team Members: Mike Hovious, Ron King

Sign Lighting Outline Qualified Product List

Through the use of critical analysis and problem solving, collaboration, and relationship building, the members of the signing electrical squad streamlined a cumbersome and time-consuming process. In the past, contractors were required to submit a description of each proposed sign lighting construction material to the Resident Engineer. This “catalog cut” submittal was sent to the signing section, researched for compliance with NCDOT specifications, approved, and sent back to the Resident Engineer.

Analyzing possible ways to minimize the processing time for catalog cut submittals, the signing section electrical squad learned of web-based tools that could provide a good solution. With help from IT, the signing section electrical squad developed a qualified product list (QPL). The Signing QPL (SQPL) is an online database containing sign lighting materials approved for construction. The development of the SQPL has allowed the signing section to rewrite the policy for submitting catalog cuts.

Results

Now Contractors are required to use materials listed on the SQPL and only need to provide the Resident Engineer a list of the sign lighting materials proposed for use on the project. Use of the SQPL yields many results including a strengthened relationship between IT and the signing section, increased technological capabilities, establishment of a more efficient and standardized submittal process, an expedited approval process for signing construction, and reduction in paperwork and overhead costs.

Construction-Materials and Tests

Team Name: M&T Field Section

Team Leader: Abby Daniel
Team Members: Pat Stowe, Michelle Harrington

E-mailing of Test Reports Between Departments

The processing of grass seed test reports has been made easier and faster with the use of a scanner and e-mail.

The Department of Agriculture must certify Grass seeds used by the Department and its contractors before it is used. Grass seed is sampled by either Department of Agriculture inspectors or NCDOT Materials Inspectors and sent to the Department of Agriculture laboratory in Raleigh for testing. Test results are then sent to the Materials & Tests Unit and the Roadside Environmental Unit for evaluation, processing and entry onto the Materials and Tests Unit Web Page. The Department tested 732 lots representing 8,761,392 lbs. of grass seeds in 2003.

Previously, the Department of Agriculture laboratory's five page test reports were mailed through the Courier Service which charged $.18 cents per envelope with an average of delivery of five business days. Sometimes the reports did not arrive in a timely manner and usage of the seed on the project was delayed as the seed supplier and contractor had to wait for the test results to be posted by the Materials and Test Unit.

Results

Benefits of the new system are that postage costs are reduced, information is distributed in a timely manner, and project delays are reduced. Although test reports are still mailed to seed suppliers, emailing reports between state agencies results in savings of $264 per year. The delays on projects are reduced because the test information is on the website before the suppliers get their reports and ships seed to projects.

Division of Motor Vehicles

Team Name: Automated Open Suspense Files

Team Leader: Richard Howard
Team Members: Renee Sutton, Tom Clark, Ronnie Richardson, Marlene Fletcher, Paula Windley

Automated Open Suspense File

When the Division of Motor Vehicles contacts a vehicle owner by mail, a suspense file is set up. These files are housed on 94 feet of shelving in our Telephone Communication Center. At any given time there are approximately 11,000 files on these shelves. When a phone call concerning a file is received, the file must be pulled from the shelf. It takes about 5 minutes to locate and pull each file and have it available to respond to the caller. There are times when the file is already out to someone else or misfiled, which would add additional time to locate the file. There is one full time file checker and she is assisted by others when needed. After a review of the present system it was decided that the file system should be automated. This would allow review of the file on line.

Results

The system went live on November 1, 2004 and it has allowed the phone agents and management the opportunity to provide the most timely response to a phone inquiry. It also eliminated 94 feet of shelves and 11,188 active files as all existing files were scanned into the online STARS system. There is also no need for a file checker and she assumed other duties and responsibilities.

Information Technology-GIS

Team Name: GIS Unit

Team Leader: Chris Tilley
Team Members: Emmanuel Matata

Parcel Information Service

DOT offices need address information on property (parcel) ownership for various purposes. This information is valuable for contacting property owners to inform them of citizen information workshops, design public hearings, etc. In the past, DOT offices would send personnel to local tax agencies to gather parcel owner information, or would collect the information directly in the field. These were expensive (travel costs and subsistence) and time-consuming methods of collecting the information. Sometimes different DOT offices would contact a local agency at different times for the same data. That was a source of irritation for the local agency because it demonstrated an uncoordinated effort by DOT offices, and caused the agency to do duplicate work.

The GIS Unit developed a service to obtain digital parcel data from local agencies and redistribute the information to DOT offices as needed. Most counties now have parcel data in electronic format. GIS collects data from local agencies through web download or phone ordering. The data is stored and organized into a standard GIS format. The GIS Unit currently possesses 87 (87% of state) county parcel layers.

Results

DOT offices are now benefiting from this service. The Photogrammetry Unit and the Office of Human Environment have been the largest benefactors of this service. The time it takes for them to get the information has been greatly reduced with a significant savings in staff time and expense. Today, 92% of all their new requests are processed within one day.

Environment & Planning-Project Development

Team Name: Merger 01 Coordination Group

Team Leader: Debbie Barbour
Team Members: Greg Thorpe, Emily Lawton, David Franklin, Coleen Sullins, Charles Cox

Environmental Permit Process Improvement

The environmental permitting process associated with building and maintaining North Carolina's transportation system is lengthy and highly complex, involving many state and federal agencies. In an effort to improve the workflow effectiveness and efficiency of the environmental permit development, coordination, and issuance process, the NC Department of Transportation (NCDOT), along with the NC Department of Environment and Natural Resources (DENR), and the US Army Corps of Engineers (USACE) jointly sponsored a process improvement initiative. The initiative was initially undertaken with the primary purpose of developing quality permit applications and issuing environmental permits that support the timely delivery of the transportation program while minimizing disruption to the natural and human environment. In North Carolina, the permitting process is integral with the project development and National Environmental Policy Act decision-making process. While the original intent of the initiative was to improve the permitting process, the project development process also had to be examined in order to effect substantive change.

Results

The result is a mutually agreed upon project development and environmental permitting process, known as the Merger 01 Process that incorporates the true essence of environmental streamlining and stewardship: early and continuous interagency coordination, avoidance and minimization of high quality resources (beyond those required for regulatory compliance), shared environmental and transportation decision-making, and well-defined dispute resolution procedures.

Operations-Div 10

Team Name: Division 10, District 1

Team Leader: Matt Weiss
Team Members: Terry Morgan

Road Addition Mapping

Recently we have begun to use aerial photography to aid in our road addition process. Previously, when roads were added to the State system we would sketch the road into our county maps and the accuracy was not as it should. With the help of our CAD operators, they can use aerial maps to outline the roads and print out a much more detailed map that gives the exact location, length and reference to other roads.

Results

This process saves us time and produces a more accurate map to submit to Raleigh when the road is finally approved for addition.

Operations-Div 10

Team Name: Union Maintenance

Team Leader: W.D. Gillette
Team Members: D. Tomberlin, J. Hildreth, T. Baucom

One Man Patcher

After a heavy snow season followed by an unusually wet spring, the roads in the county were in very poor condition with many potholes. We rented a patch machine made by Rossco from Interstate Equipment Co. The machine patches using tar and gravel and is self-contained on a 33,000 GVW truck. The operation requires only one person to operate, and a second if needed to stop traffic when operating in a curve or other blind spots. This operation has patched up to 120 holes in a single day, with 75 to 100 being normal. The single truck was able to patch more holes than all 5 patch crews combined. Each conventional patch crew consisted of 1 TSI, 2 TW, 2 inmates, 1 Crewcab Dump, 1 Tar Kettle, 1 Small Dump, 1 Roller, and 1 Roller Trailer. The use of this machine has not only helped to get potholes under control, but has allowed us to concentrate less on response and more on routine maintenance of roads.

Results

Prior to our use of a one man patcher, we considered creating another patch crew. Now we are looking to down size the number of patch crews and combine two for a larger crew to handle paving operations and other large jobs.

Operations-Div 10

Team Name: Div. 10 Equipment Office

Team Leader: Anne Evans
Team Members: Diane Hayes, Tonya Holloway, Shari Ashley

Work Instruction Manual for Office Procedures

The Division 10 Equipment Office clerical staff consists of an office manager and three processing assistants each having designated duties to perform. In the absence of an employee, their designated duties are normally put on hold until they return back to work because other employees are not trained in those areas. Also, if a position becomes vacant, all office personnel brainstorm together to figure out the process to carry on those duties. Since there is no formal training for out specific jobs, we felt the need to cross-train all current personnel and come up with a method to train new personnel as well. Implementing and creating a training/work instruction manual has solved this problem.

Office personnel and the equipment superintendent have created a detailed manual to include all transactions that are used to perform day-to-day operations in the Division 10 Equipment Unit.

Results

Implementing and creating this training/work instruction manual has allowed the Division 10 Equipment Shop to cross-train all employees effectively to perform all tasks in the absence of a co-worker. This allows employees to feel at ease when performing a new task causing less stress and the feeling of being overwhelmed.

Operations- Division 7

Team Name: Division 7 Construction

Team Leader: Bobby Norris
Team Members: D. Ferguson, R. McKinney

Preformed Thermoplastic Detectable Warning (Wheelchair Ramps)

Standard procedure for retrofitting wheelchair ramps for the sight impaired with detectable warning now calls for truncated domes that can be felt underfoot or by canes as the boundary between pedestrian and vehicular routes. There have been issues in the past due to constructability problems with the concrete installation. The standard installation of he truncated domes usually consists of saw cutting and removing concrete. Pour new concrete and stamp with a rubber mat to form the domes, which has not always produced the dome effect. When the domes are not formed as required the process may have to be repeated numerous times. In addition to these possible problems, the concrete mus be allowed to harden before use.

By suing preformed thermoplastic, the process consists of cleaning the area and laying an adhesive mat, heating, then rolling of new thermoplastic mat. The process takes around 20-30 minutes.

Results

Cycle time is reduced from a minimum of three days to 20 to 30 minutes.

There is also a cost savings of $750 per ramp. Division 7 saved $41,250 on 55 installations during 2004.

Safety Improvement

Safety Improvement

55-Safety Improvement

Operations-Div 10

Team Name: Albemarle Equipment Shop

Team Leader: Melvin Furr
Team Members: Tom Souther

Ventilation System

Previously, there was no way to vent engine exhaust and welding fumes from the heavy equipment shop without opening the bay doors. The Albemarle Equipment Shop in Division 10 installed a power fume vent with piping to attach to equipment as needed.

Results

With the use of the new power fume vent, there is no exhaust fume build up and equipment can be operated in the shop with the bay doors down.

Operations-Div 10

Team Name: Albemarle Equipment Shop

Team Leader: Melvin Furr
Team Members: Tom Souther

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69- Safety Improvement

Preconstruction-Traffic Engineering

Team Name:
Triad Regional Traffic

Team Leader: Vickie Embry
Team Members: Tony Wyatt, Brent McKinney (PART)

Regional Traffic Safety Council

In 2003, there were 250,933 reported traffic crashes in North Carolina that resulted in a total of 1,559 persons killed and 134,00 injuries on our highways. The NC Executive Committee for Highway Safety (NCHS) was formed in April 2003 to identify, prioritize, promote and support all 22 key emphasis areas in the AASHTO Strategic Highway Safety Plan (SHSP). The Executive Committee adopted the national goal of 1.0 fatalities/100 MVM (million vehicle miles of travel) by the year 2008. Presently, North Carolina's rate is approximately 1.6 fatalities/100 MVM. In an effort to reach the goal of 1.0/100 MVM in North Carolina, NCDOT representatives held meetings with the Executive Director of the Piedmont Authority for Regional Transportation (PART) to establish a safety council made up of representatives from rural areas of the Piedmont area. This council would assist the rural areas and give those citizens a place to turn with their safety issues and/or problems.

Results

The resolution to establish a Regional Transportation Safety Council was approved by the Board of Trustees for PART on December 8, 2004. The first meeting of the Council is scheduled for February, 2005, with plans to meet quarterly. Articles informing the public about this safety council have been in newspapers and incorporated into radio news spots.

Preconstruction-Highway Design

Team Name:
Rumble Strip
Committee

Team Leader: Roger Thomas
Team Members: Shawn Troy, Tony Wyatt, Joe Blair, Cynthia Perry, Clark Morrison, Stewart Bourne, Garry Lee, Brad Hibbs, Ron Allen

Revised Rumble Strip Policy

The old guidelines for rumble strips used by the NCDOT specified that rumble strips should only be placed on the following types of median divided roadways: Interstate Through Routes, Rural Freeway Segments, and Expressway Segments that are located in sparsely developed rural areas. Rumble strips are raised or grooved patterns that are placed along paved roadway shoulders to provide both an audible warning (i.e., rumbling sound) and a physical vibration. As drivers drift beyond their designated travel lane, the warning alerts the motorist that a steering correction is required. Recognizing the growing run-off-the-road (ROR) safety problems and the fatigued and distracted driver benefits of continuous milled rumble strips, an aggressive effort to reduce the number of ROR crashes was initiated by the NC Board of Transportation and North Carolina's Executive Committee for Highway Safety.

Results

NCDOT has revised the rumble strip policy to recommend the placement of rumble strips on all median divided interstates, freeways, and limited control of access expressways. With the placement of rumble strips on more roadway facilities, the number of run-off-the-road (ROR) crashes can be reduced 20% to 50% on high speed median divided roadways across the state.

Construction-Roadside Environmental

Team Name:
Rest Area Section

Team Leader: Tad Davis
Team Members: Jimmy Parish, Paul Stankiewicz, Jennifer Pitts

Rest Area Safety

In 2003, NCDOT engaged the qualified assistance of Edwin Weaver, PE of the NCSU School of Civil Engineering for a comprehensive study of the 61 North Carolina rest areas. The purpose of this study was to justify the levels of funding allocated to backlog maintenance and for necessary facility upgrades. The information gathered during the study provided NCDOT with the current condition of the rest area sites as well as an overall inventory of the infrastructure components (restroom buildings, vending buildings, picnic tables and shelters, HVAC, plumbing, etc.).

Results

The Rest Area Condition Survey identified and rated the condition of each element of the buildings and sites. Any item identified as a safety concern was listed as top priority and required immediate action. The safety priority list was then distributed to each of the fourteen highway divisions so that safety issues could be resolved.

Division of Motor Vehicles

Team Name:
Driver License
Certification

Team Leader: Barbara Webb
Team Members: Wayne Hurder, Doug Haynes, Eric Lingerfelt, Tom Roth

Transportation Notification System

Federal Motor Carrier Safety Administration Regulations required commercial trucking companies and transportation companies to request a motor vehicle report (MVR) from each driver on a semi-annual basis. Transportation companies advised DMV that there were little to no voluntary driver reports on traffic convictions, license suspensions or license cancellations nor commercial driver license disqualification outside of the required semi-annual MVR checks. The North Carolina Division of Motor Vehicles took the initiative to develop a computer system that would give companies access to real time driver license record reporting. The NC DMV (Driver License Section) and the Transportation Information Technology team developed a "proof of concept" system known as the North Carolina Transportation Notification System (TNS).

Results

Through the Transportation Notification System (TNS), commercial trucking and transportation companies may now readily identify or remove traffic safety risks associated with driver behavior or driver impairment. The companies now have the tool to readily prevent suspended, revoked or unlicensed drivers from operating company vehicles.

Department of Transportation

Team Name:
Move It On Over Committee

Team Leader: Kelly Damron
Team Members: Rob Stone, Debbie Leonard, Lisa Crawley, Cheryl Leonard, Norman Goering, Rick Cates, Max Tate

Move It On Over Public Awareness Campaign

Based on national statistics, approximately 50% of the nation's congestion is due to unplanned traffic incidents. Secondary crashes account for approximately 20% of vehicular crashes and approximately 18% of freeway fatalities. The **"Move Over" Law** and the **"Fender-Bender" Law** both deal with the movement of vehicles and motorist safety along North Carolina's highways. However, the public was not aware of the relatively new laws. A committee was formed with representatives from NCDOT, NC State Highway Patrol, Governor's Highway Safety Program, NC Trucking Association, and Federal Highway Administration in an effort to develop a public awareness program for the two laws.

Results

The public awareness program was titled **Move It On Over** and the committee developed brochures, posters, trinkets, and radio and television commercials. A sign-unveiling event was held to provide an opportunity for media coverage. Some of the event attendees were Secretary of Transportation Lyndo Tippett, Secretary of Crime Control and Public Safety Bryan E. Beatty, and NC Insurance Commissioner Jim Long.

Operations-Div 10

Team Name:
Newell Maintenance

Team Leader: John Edmonds
Team Members: Troy McMillion, Jim Bottoms

Tailgate Pin Punch

The removal of dump truck tailgate pins often resulted in smashed fingers and hands. In order to prevent this safety hazard, an inexpensive hand tool was created to assist in the removal of the tailgate pins. A simple piece of soft stock steel machined down to the proper diameter and length with a handle attached. A dead blow hammer was used to prevent the metal from shearing.

Results

The use of this newly created hand tool made removing dump truck tailgate pins easier and greatly reduced the risk of crushed and/or smashed fingers.

Operations-Div 10

Team Name:
Paw Creek Shop

Team Leader: Robert Waterhouse, II
Team Members: John Brannon, Gerald Thompson

Lighting

As a safety measure, the Division 10 equipment unit replaced overhead lighting in the Paw Creek shop and parts room.

Results

The replacement of the overhead lighting in the shop and parts room has greatly improved the shop safety conditions and also cut the amount of energy used.

Operations-Div 10

Team Name:
Charlotte Shop

Team Leader: Keith Smith
Team Members: Robert Waterhouse, II; David Braun

False Floor

In order to access equipment from the bed of traffic services trucks, it was necessary for operators to keep getting up and down in the back of the truck several times during the workday. Team members in the Division 10 Charlotte Shop designed, constructed and installed a false floor for the bed of their service trucks. Under the floor is a spot for signs, poles, and any hardware needed to install and repair signs. The truck operators now have easy access to the equipment.

Results

The false floor in the bed of traffic services trucks provides easy access to equipment and reduces the risk of injuries, particularly back injuries.

Operations-Div 10

Team Name:
Newell Parts Department

Team Leader: Jonathan Rinehardt
Team Members: Dean Springer, Janice Williams, Shan Harrer

Parts Truck Modification

Personnel in the Division 10 Newell Parts Department discovered that the parts delivery truck needed stronger sides as well as a stronger headboard in the box part of the truck. They installed plywood and handrails to the sides of the box interior to secure the parts being transported daily to the shops within Division 10.

Results

By reinforcing the sides of the box interior of the delivery trucks, the parts were held more securely in place which being transported. This also reduced any risk of damage to the parts, as well as risk of personal injury.

Operations-Div 10

Team Name:
Anson Shop

Team Leader: Kenneth Baker
Team Members: Eugene Cash, Jimmy Liles

Containment Area for Fuel Truck

In the past, there was no containment area for possible fuel or lube spills from the fuel truck. The Anson Shop personnel in Division 10, with the help of the Department of Corrections, constructed a covered parking area for the Anson Shop fuel truck. This area also provides a containment wall in the event of a fuel or lube spill from the fuel truck.

Results

The construction of the containment wall provides a much needed safety measure in the event of a fuel or lube spill from the fuel truck.

Operations-Div 10

Team Name:
Anson Shop

Team Leader: Kenneth Baker
Team Members: Eugene Cash, Jimmy Liles

Stand By Generator

During power outages, the Anson Shop in Division 10 had no backup emergency power. In order to remedy this situation, the team from the Anson Shop purchased and installed a stand-by generator.

Results

The new stand-by generator enables the Anson Shop to operate as normal during a power outage.

Operations-Div 10

Team Name:
Albemarle Equipment Shop

Team Leader: Melvin Furr
Team Members: Tom Souther

Ventilation System

Previously, there was no way to vent engine exhaust and welding fumes from the heavy equipment shop without opening the bay doors. The Albemarle Equipment Shop in Division 10 installed a power fume vent with piping to attach to equipment as needed.

Results

With the use of the new power fume vent, there is no exhaust fume build up and equipment can be operated in the shop with the bay doors down.

Operations-Div 10

Team Name:
Traffic Services

Team Leader: Bob Finley
Team Members: Mike Kendall

Detour Trailer

The detour trailer carried a lot of signs that were strapped down with bungees. There were problems with signs moving, signs falling down, or bungees breaking. The Traffic Services team in Division 10 welded telspar to the detour trailer, then used 3/8 inch steel rods with hitch pins to hold the signs up.

Results

This new safety measure gave support for the signs, eliminated the use of bungees, allowed walkway in the middle of the trailer, and reduced the risk of falling signs.

Operations-Division 7

Team Name:
Traffic Engineering

Team Leader: V.E. Barham
Team Members: Larry Lashley

Improved Paint Markings

Newly paved contract roads are striped in two ways, either with paint or long life markings which is usually thermoplastic. On contract paint roads, there have been problems with the edge-line radii and the white mini skips wearing out before the rest of the road did. Mini skips are a paint line 4-inches wide and two feet long with an eight-foot gap between the mini skips. They are a continuation of the edge-line at intersections that help motorists on the main road continue to follow the flow of the road. They also help motorists on the intersecting road decide how far they can safely pull up at the intersection.
A decision was made to add in the contract for these newly paved roads that the radii and the mini skip lines at intersections be put in with thermoplastic and that the width of the mini skips be increased to 6-inches.

Results

The use of the brighter and larger thermoplastic markings has resulted in safer driving situations for motorists, particularly at intersections. The thermoplastic markings have a longer life span; therefore, saving maintenance time for the paint crew operations.

Operations-Division 7

Team Name:
Caswell Safety

Team Leader: Derek Dixon
Team Members: Dennis Brann, Cindy Schrodt

Caswell Lighting

During the adverse weather season of 2003, the existing lights in the Caswell County Maintenance yard did not provide adequate lighting to work in a safe and efficient manner. At that time, there was only one area light at the salt storage area. Two more area lights were located at the front of the maintenance yard. The only way to work safely with the existing lighting was to use headlights from dump trucks and flashlights. This was an unsafe working environment for the employees working throughout the night during adverse weather conditions.

To correct this problem, the Caswell Safety team contacted local electrical contractors to provide bids to install 18 400-watt high-pressure sodium lighting fixtures onto the existing poles. The contract was awarded and the lighting fixtures were installed.

Results

The new lighting has provided a much safer working environment when handling emergencies during the night. Employees can now focus more on the task at hand while working in a well-lighted area.

Operations-Division 7

Team Name:
Alamance Bridge Maintenance

Team Leader: A.C. Levens
Team Members: J.T. Barnes, J.M. Hawks, J.A. Brown, M.Y. Walker, T.S. Teague

Scaffold Attachment for Concrete Headwall

There have been problems working on back side of a concrete headwall form. The Alamance Bridge Maintenance team made a 2' high X 3' wide angle and used 2-3/4 –inch anchor bolts to anchor the form to the headwall. Once the scaffold supports were fabricated, they can be used whenever needed.

Results

By putting this safety measure in place, the work crew could work safely in extending the backside of the headwall. In addition, there will be less environmental impact. Bridge crews statewide can use this system to save man-hours.

Environmental Sustainability

Environmental Sustainability

44-Environmental Sustainability

Operations-Div 7

Team Name:
Alamance
Maintenance & Bridge

Team Leader: Michal Venable
Team Members: Anthony Buie, Milton Tapp, Danny Strickland, Patricia Phillip-Ayers, Al Alvins, Jim Hawks, Jeff Brown, Walter Allen, JL Cornell, Marie Coggins

Salt Building Drapery

This CPI team was formed to resolve problems with our salt storage facility. The specific problem with our storage unit was shrinkage and polluting the nearby environment. During heavy rain events, rainwater would blow into the open front of our salt storage units and erode our salt piles. In addition, evidence of storm water runoff pollution was apparent because the surrounding grassy areas were dead and brown.

The CPI team attempted several different ideas; however, their most innovative idea was the addition of “drapery” to the front of each salt building structure to prevent rainwater blowing into the storage units. The Salt building curtains consisted of fence posts, fence couplings, and tarps which were all available from the Central Depot in Raleigh.

After installation there was no loss of salt and grassy areas recovered with the elimination of storm water runoff.

Results

According to our records, by reducing the salt shrinkage, this project created approximated $1200 annual savings and provided a new BMP (best management practice) for all the existing State storage facilities.

Environment & Planning-Project Development

Team Name:
Mitigation Process Improvement Team

Team Leader: Bill Gilmore
Team Members: NCDOT, NCDENR, US Army Corps of Engineers (Wilmington District)

Mitigation Process Improvement Initiative

The Mitigation Process Improvement Initiative was initiated through a mutual agreement with the NC Department of Transportation (DOT), the NC Department of Environment and Natural Resources (DENR), and the US Army Corps of Engineers – Wilmington District (USACE). The process mission was to develop a structured mitigation process that supports the timely delivery of NC's Transportation Program while appropriately compensating for unavoidable and minimized wetland, stream, and buffer impacts. The initiative was undertaken with the overall purpose to improve the effectiveness and efficiency of the DOT/DENR/USACE compensatory mitigation process. This process improvement initiative is highly complex and has involved numerous representatives of various state and federal resource agencies.

The Ecosystem Enhancement Program (EEP) was the result of recommendations developed by the process owners.

Results

The purpose of the EEP will be to provide a program that identifies ecosystem needs at the watershed level and preserves, enhances, and restores ecological functions through interagency participation and various funding sources including, but not limited to, compensatory mitigation.