



Matthew H. Mead  
Governor

# Wyoming Department of Transportation

*"Providing a safe, high quality, and efficient transportation system"*

5300 Bishop Boulevard  
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William T. Panos  
Director

June 29, 2017

Senator Drew Perkins,  
Acting Chairman of the Wyoming Government Spending and Efficiency Commission  
Wyoming State Legislature  
200 W. 24<sup>th</sup> Street, Room 213  
Cheyenne, WY 82002

Re: Information from the Wyoming Department of Transportation for June Commission Meeting

Dear Senator Perkins and Members of the Committee:

Please find attached the requested information and related materials from the Wyoming Department of Transportation (WYDOT) for discussion at the commission meeting June 29-30. We appreciate the opportunity to provide this information and assist the commission with its legislatively mandated task of reviewing issues related to efficiencies in Wyoming state government. As you will see, WYDOT has enacted a wide variety of strategies to improve agency efficiency, and we will have additional ideas to share with you during the meeting.

I look forward to appearing before the commission and anticipate our discussion of efficiency and related concepts. If I can provide any additional information on these or other topics, please let me know.

Sincerely yours,

William T. Panos  
Director



## Response to Government Spending and Efficiency Commission June 28, 2017

*Question 1: Agency work to promote efficiency and reduce spending, including any prior studies completed or work done to improve agency inefficiencies.*

In response to this request, the Wyoming Department of Transportation (WYDOT) submits the attached Efficiencies, Saved Resources and Reduced Expenditures Report. This report has been updated to provide the Commission with the most current activities within the Department.

*Question 2: Nonpriority programs and expenditures that may be statutorily required but which could or should be discontinued.*

WYDOT is required to maintain the following nonpriority projects which could be considered by the Legislature for modification or discontinuation to better improve state efficiency. The Department does not support or oppose legislative action on either of these nonpriority projects.

### 1) Local Roadways

Several highways on the state transportation system carry very low volumes of traffic and primarily provide access to land with little or no through traffic. Many only provide access to a single location or only connect to a state highway on one end. Despite this, WYDOT is required to expend funding to inspect, maintain, repair, and operate these road segments.

**Potential Action:** These local roadways could be relinquished to the appropriate local government or WYDOT could reduce the surface to gravel with very little impact to the public.

**Estimated Cost Savings:** Actually savings depends on total miles relinquished. WYDOT would save \$20,000 per mile annually.

### 2) Mountain Automated Weather Observation System (AWOS)

The AWOS provides weather information to pilots traversing the mountains of Wyoming. There are 5 AWOS stations at various mountain locations around the state. At this time, WYDOT cannot track pilot usage of the weather stations. The primary user of the system appears to be the National Weather Service (NWS). The original state capitalization cost was approximately \$1,250,000. The current, annual maintenance cost to the state is approximately \$120,000.

**Potential Action:** WYDOT could pursue a dialogue with the NWS on cost sharing or cost shifting the system's maintenance from the state.

**Estimated Cost Savings:** \$120,000 annually



## Response to Government Spending and Efficiency Commission June 28, 2017

### *Question 3: Agency-related statutory provisions that lead to inefficiencies.*

The Department of Transportation offers the following suggestions to consider for legislative actions that could lead to cost savings or efficiency measures for the State. WYDOT does not support or oppose legislative action on any of these proposals.

#### **1) W.S. 24-2-106 (b) (Appointment of chief engineer; duties of director and engineer.)**

(b) No contract for the construction of a bridge is valid unless the plans and specifications have been prepared by the director of the department of transportation or the chief engineer or, if prepared by other professional engineers, the bridge designs, plans and specifications have been approved by the director or the chief engineer before the start of construction. The review and approval under this section shall be made without cost to cities, towns and counties. Final payment upon any contract shall not be made until the bridge is inspected and the payment approved by the designer of the bridge and the appropriate governing body.

This section of the statute requires the Department of Transportation to review and approve the design plans and specifications for all bridges to be constructed on public roadways. The Department's review may be duplicative, adds time to the design process, and in many cases is unnecessary as all bridge designs are required to be completed by a licensed professional engineer.

**Potential Action:** The Legislature could consider modifying language or eliminating section (b) to remove the requirement for the Department to approve all bridge designs on public roadways. WYDOT would continue to provide standard plans, specifications, data, and consultation to the local public agencies as requested or needed.

**Estimated Cost Savings:** \$10,000 per year

#### **2) W.S. 31-7-119 (g) (Expiration and renewal; required tests; extension.)**

(g) The division shall send an application for license extension pursuant to subsection (f) of this section to the last known address of an eligible licensee within one hundred twenty (120) days prior to license expiration. The license extension application shall be returned to the division with a postmark at least thirty (30) days prior to the license expiration date. The application shall be accompanied by written evidence that the applicant's visual acuity is 20/40 or better with or without corrective lenses, as tested within one (1) year prior to submitting the application. Upon receipt of a completed application and the fee prescribed by W.S. 31-7-113(a)(v), the division shall issue a license extension to eligible licensees. The division shall provide a summary of changes in the law relating to motor vehicles to licensees who receive a license extension.



## Response to Government Spending and Efficiency Commission June 28, 2017

This section requires the Department of Transportation to physically mail paper applications for license renewals to eligible constituents. Additionally, due to the fact that not every driver is eligible for a mail-in renewal, it requires multiple letters to be drafted within the system and requires additional programming when information must be updated. Essentially, as this section is written, the language prevents WYDOT from implementing a more cost-effective process.

One possible solution could allow for implementing a one-time notification using postcards that provide basic information about when the license will expire and the renewal process.

**Potential Action:** The Legislature would need to review the statute and revise language to address more modern practices.

**Estimated Cost Savings:** Initially, cost savings by the Department would be realized through consolidating all notification efforts to a single, standard notification form for all constituents. Additional savings would be through a reduction in mailing costs (\$47,840 annually).

### 3) W.S. 35-9-108 (State Fire Marshall plan review; procedure; fees.)

The pertinent parts of this statute are:

(a) Prior to beginning any new construction, the remodeling of existing buildings except as provided under subsection (q) of this section, or the installation of aboveground flammable or combustible fuel storage tanks, the owner or the owner's designated representative shall submit plans to the state fire marshal for review of the proposed project for compliance with applicable fire and electrical safety standards for:

- (i) Buildings or structures owned or leased by the state or local governmental entities;
- (ii) Public buildings over five thousand (5,000) square feet of total floor area including basement;
- (iii) Multistory public buildings;
- (iv) Buildings intended for use as child care centers housing more than ten (10) children;
- (v) Public bars, public lounges, restaurants, night clubs, lodge halls, theaters, churches or public meeting places regardless of size;
- (vi) Public and private aboveground fuel dispensing facilities.

(d) The department shall collect fees for plan reviews and other inspections except as provided in subsections (q) and (r) of this section, in the amount provided in the 1997 Uniform Building Code and adjusted for inflation as adopted by rule or regulation by the department. Fees collected under this subsection shall be deposited into the general fund.



## Response to Government Spending and Efficiency Commission June 28, 2017

This statute requires the Wyoming Department of Fire and Electrical Safety to review WYDOT's highway project plans. WYDOT incurs a fee for each review. Additional plan reviews are required on highway projects that include electrical work even though these plans and specifications are developed under the supervision of a licensed professional engineer. The review fees are based on the estimated cost of the work involved and most often these reviews do not result in any changes to the plans or specifications. This approval is often duplicative and requires WYDOT staff to track and transfer funds.

**Potential Action:** The Legislature would need to modify language to exempt WYDOT from seeking approval of project plans from the Wyoming Department of Fire and Electrical Safety in instances where the approval is a duplicative and/or unnecessary effort.

**Estimated Cost Savings:** \$25,000 per year

**Question 4: Suggestions for improvement in efficiency, i.e., describe your "perfect world scenario."**

At the request of the Legislature, WYDOT has preliminarily identified three areas of possible improvements that would be a significant step toward a "perfect world" scenario relative to transportation in Wyoming. Empowering Commercial Air Service, Flexibility in Attracting and Retaining Employees, and Indexing User Fees are areas that may warrant a closer look. Each of these possible areas of improvement is describe in some detail below.

### 1) Improving Commercial Air Service

The state currently funds air service to several communities in the state through the Air Service Enhancement Program (ASEP). While the program benefits communities and the state by providing quality air service access, further efficiencies may be possible. WYDOT is actively working to achieve these efficiencies by modifying the current program into one where the state and local communities enter into a long-term Capacity Purchase Agreement (CPA) with a single commercial air service provider, versus contracting with several providers at intermittent lengths. There are several benefits to contracting certain parts of Wyoming's commercial service under one agreement:

- Place Wyoming communities at a competitive advantage for businesses and economic development;
- Secure and expand air service amid industry-wide reductions to small non-hub airports;
- Enable the State and local communities to directly oversee the commercial operations of the carrier through involvement in ticket pricing, flight scheduling, marketing, and operational reliability;
- Lower the overall ongoing financial exposure to the State and local communities by applying the revenue from profitable markets to those operating at a loss;
- Reduce overhead by contracting for one long-term contract versus several shorter



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contracts;

- Leverage larger purchasing power for reduced rates; and,
- Create a unique, state-wide brand of air service.

A long-term public-private partnership for air service enables the state and local communities to realize their full market potential, secure reliable air service in an increasingly competitive environment, and ultimately provide Wyoming communities with sustained air service, better fares, and improved schedules.

**Potential Action:** The potential action would involve the Legislature and WYDOT, working together, to develop a suitable action plan that achieves sustainable commercial air service to eight airports in Wyoming. Such a plan could include, but is not be limited to: a public private partnership involving a single air service provider; support by appropriate revenue guarantees; local funding commitments; and the application of state air service enhancement program funding.

### 2) Agency Retained Compensation Flexibility

The programs administered by the Wyoming Department of Transportation are directly connected to the government's ability to operate in Wyoming and the daily operation of our economy.

WYDOT has been evaluating its current classification and pay structure to determine if it meets the current recruitment and retention needs. For the last several years, the Department has several critical job types that support its core services that experience higher turnover due, in part, to an inability of the Department to recognize employee contributions with appropriate pay adjustments. These job types include maintenance worker, mechanic, driver's license examiner and trooper. If the Department was able to move an employee from the lower end of the pay band towards the mid-point in a timely manner, we believe we would be able to retain many of the employees who leave. In addition to increasing the agency's ability to attract and retain engineering, maintenance and other employees, the flexibility could also be successfully employed to benefit the Wyoming Highway Patrol.

**Potential Action:** The potential action would involve the Legislature allowing this specific Department more retained authority and flexibility to compensate employees, subject to certain restrictions, for the purpose of recruitment and retention.

### 3) Indexing Highway User Fees

Currently, transportation funding in Wyoming comes from primarily three sources; federal monies, state highway user fees, and Federal Mineral Royalties (FMRs). State highway user fees including registration fees, driver's license fees and state fuel taxes are not indexed to account



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for the loss of buying power due to inflationary effects. Said another way, almost immediately upon increasing a user fee, the financial benefit of that fee increase begins to decline. As a result of that decline, maintenance and construction projects are delayed causing a backlog of necessary projects that would otherwise maintain or improve our transportation infrastructure.

To illustrate the potential revenue that can be generated through indexing, we will use fuel tax as an example. In 1998, the legislature increased the fuel tax from 9 cents to 14 cents per gallon for both diesel and gasoline. Had indexing been implemented at that time, Wyoming would have generated an additional \$341,436,823 in revenue through 2016 for transportation projects. An important item to note is that had indexing been implemented in 1998, our current per gallon tax would only be one penny per gallon higher than it is today.

**Potential Action:** To ensure that the state's buying power doesn't erode, and that the integrity of Wyoming's transportation infrastructure is maintained for the state's economy, indexing could be applied to state user fees that support highway construction. The state user fees that could potentially be indexed to inflation are: Fuel Tax – both diesel and gasoline; Driver's License Fees; and Motor Vehicle Registration Fees.

# WYOMING DEPARTMENT OF TRANSPORTATION



**Efficiencies, Saved Resources, and  
Reduced Expenditures**

*Updated June 2017*





## Introduction

The Wyoming Department of Transportation (WYDOT) is one of the largest state agencies with approximately 2,000 employees dispersed throughout the state. Employees are responsible for overseeing approximately 7,600 miles of federal-aid roadways, which includes some city and county roads, and more than 900 miles of national, interstate highways.

In addition to Highways, WYDOT responsibilities include: Wyoming Vehicle and Driver Services; Ports of Entry and the Wyoming Highway Patrol; Airports and Air Travel; Fuel Tax Administration; Transportation System Technology; and Emergency Communications. WYDOT maintains the widest variety of agency assignments of any state department of transportation in the United States, while being one of the smallest such agencies in the nation.

The Department's primary functions include the following:

**Aeronautics** - managing the state's airport capital improvement program, operating the state's aircraft, enhancing and negotiating commercial air service, and administering federal-aid funds related to aeronautics and airports.

**Financial Operations** - managing agency budget and disbursements, maintaining financial services, maintaining procurement services, collecting and distributing state fuel taxes, and financial auditing.

**Highways** - planning, designing, rehabilitating, and improving transportation infrastructure. This also includes regular maintenance, maintaining existing pavement assets (primarily highways and airport runways), and highway and roadside features (such as bridges, drainage, fences, guardrail, and rest areas) in the best possible condition and preserving the state's investment in roads, bridges, and other structures. This function includes snow control, litter removal, fence building, mowing, striping, maintaining drainage systems, and fleet and building management.

**Highway Patrol** - enforcing Wyoming's motor vehicle traffic laws, providing crash response and investigation, facilitating safety education, and collecting user fees from freight movement.

**Support Services** - issuing and regulating driver's licenses, regulating commercial vehicles, administering vehicle titles and registrations, deploying employee training, managing human resource functions, and maintaining agency administrative services.

**Technology** - managing WYDOT's enterprise technology platform, integrating geographic information systems, deploying intelligent transportation system technologies, and maintaining government telecommunications program.

The first WYDOT efficiency report was published in May 2013 and revised in May 2014. This summary report for 2017 improves on the previous reports. WYDOT continues to identify and implement efficiency through our employees, an extensive internal review processes, and a continuous improvement program deployed in all parts of our agency.



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## Aeronautics

### Aeronautics Project Management Database

The project management database is used to track and administer airport development projects and funding.

**Benefit:** The system ensures that all project-related information is readily available to allow project managers to make more timely and effective decisions.

**Project Status:** Implemented

### Aircraft Maintenance Cost-Leveling Program

The Cost-Leveling Program is a maintenance program geared to cover the cost of engine repair, mid-period hot section, and end-of-period overhaul. Money is contributed each month based on an industry-wide average historical cost for the engine type.

In 2016, we were required to overhaul all four engines. Had we not participated in this program, we would have had to come up with approximately \$8.4 million to fund this project. As it stands, our total contribution to this program has been less than \$4 million, which shows the benefit of participating. The other benefit of this program, other than a constant monthly cost, is that we receive a “volume” discount from the engine manufacturer, Pratt and Whitney, even though our four engines would not normally qualify.

**Benefit:** If aircraft maintenance costs exceed the average, then the manufacturer absorbs the additional costs. If there are excessive moneys left at the end of the period, then WYDOT receives a refund.

**Project Status:** Implemented

### Aircraft Parts Cost-Leveling Program

This is a cost-leveling program used to pay for repair parts. Money is paid into the fund each month and the cost of repair parts are taken out of the fund.

**Benefit:** If aircraft parts costs exceed the average, then the manufacturer absorbs the additional costs. If there are excessive moneys left at the end of the period, then WYDOT receives a refund.

**Project Status:** Implemented

### Air Fleet Fuel and Flight Profile Efficiency Initiatives

The Aeronautics Division (Flight Operations) has researched and analyzed flight profiles for efficiency and implemented guidelines to save fuel. By flying specific altitudes and airspeeds (power settings) and by practicing certain ground procedures, the Program reduced its fuel costs by approximately \$32,000 in FY16 and is on course to do the same in FY17.

**Benefit:** The enhanced procedures allow the Program to burn approximately 15% less fuel than the average figures published by the manufacturer and other industry data.



**Project Status:** Implemented

#### **Airport Design Standards Inventory**

This inventory is a physical survey of each airport to identify and track Federal Aviation Administration (FAA) airport safety standards deficiencies.

**Benefit:** The inventory is used to develop necessary projects to correct issues.

**Project Status:** Implemented

#### **Airports Inventory and Implementation Plan**

This provides an inventory and evaluation of the Wyoming Aviation System consisting of the 40 publicly-owned Wyoming airports and an implementation plan to meet the established goals and objectives. The role each airport serves within the local communities, as well as the state aviation system, was identified with specific measurements and target performance associated with each goal. In accordance with the 2012 Management Audit Committee's recommendation, this study is regularly updated and reported to the Aeronautics Commission and the Legislature.

**Benefit:** Performance is continuously monitored to assess the effectiveness of each airport within the system and throughout the overall state aviation system.

**Project Status:** Implemented

#### **Group Crack Seal Projects for Airports**

WYDOT continues to manage the annual state-wide group crack seal projects for airports, saving substantially on design, mobilization, and construction costs; providing the most value in the use of state funds.

**Benefit:** The program has been beneficial in ensuring that pavement is maintained adequately by airports, thereby extending the pavement life and ensuring that an asset funded with state funds is appropriately maintained.

**Project Status:** Implemented

#### **Group Non-federal Navigational Aids (NAVAID) Maintenance**

Airports with non-federal NAVAIDs must contract a regular maintenance schedule for each of those NAVAIDs.

**Benefit:** Group procurement was done to get a better price than if airports procured the service individually. Savings are realized using one vendor, which reduces manpower and travel expense passed on to the airport.

**Project Status:** Implemented

#### **Group Seal Coat and Marking Procurement for Airports**

Airports receiving Aeronautics Commission grants for seal coating and/or marking pavement participate in a group procurement to obtain a better price.



**Benefit:** The Department has experienced significant savings by procuring a group price for seal coat and marking projects at airports in the state.

**Project Status:** Implemented

#### **Increased Oversight and Improved Procedures on Engineering and Construction Projects**

Staff efficiency plans for each project are developed to establish how many site visits should be made by staff and for what purposes. Additionally, the improved guidance is being developed for specific milestones and documents that will be required for each project, along with more standardized procedures. These changes align with comments and recommendations that were made in the 2012 Management Audit Committee audit.

**Benefit:** The changes have improved efficiency and effectiveness of the Aeronautics Division.

**Project Status:** Implemented

#### **Pavement Management for Airports**

The Aeronautics Division provides pavement inspections at public airports every four years. The inspections and resulting pavement management analysis and reporting are provided by the Aeronautics Division to ensure consistency, effectiveness, and efficiency in achieving state-wide pavement management objectives.

**Benefit:** The pavement management system predicts the life of pavement, identifies needs, and plans for upcoming major rehabilitation and reconstruction projects to ensure optimal timing and adequate funding. This ultimately extends the pavement life and maximizes the use of state funds.

**Project Status:** Implemented

#### **Priority Rating Model for Airport Projects**

The Priority Rating Model for Airport Project Evaluation is a tool used to prioritize airport development funding requests. This tool ensures that state airport improvement funds are allocated according to state goals and objectives. The model is in the process of being updated for the first time since 2006 to incorporate changed conditions and circumstances in Wyoming aviation.

**Benefit:** The update is a direct result of the 2012 Management Audit Committee audit of the Aeronautics Commission, and will improve efficiency and effectiveness of the Aeronautics Division.

**Project Status:** The updated model has been used since 2014 to evaluate all airport improvement funding requests submitted to the Commission. In addition, a one-year follow-up review was completed in August 2015. The Aeronautics Commission plans to review and revise the model again in late 2017.

#### **Wyoming Aviation Capital Improvement Plan**

This is a priority based state grant funding allocation system that includes integration with a state-wide capital program. This process has replaced a system consisting of individual funding requests presented to the Aeronautics Commission on a semi-annual basis.





**Benefit:** The current process ensures that the appropriate level of development, timed to best serve the aviation system as a whole, is promoted and results in the most efficient use of state resources.

**Project Status:** Implemented

## Financial Operations

### Asphalt Supply and Pricing Risk Management

As the supply and the price of asphalt has greatly fluctuated, WYDOT contracted with a consultant to provide a review of the asphalt market.

**Benefit:** The assessment provided information about market trends and possible options to better predict and potentially lessen WYDOT's market risk and cost for asphalt.

**Project Status:** Implemented

### Auction Vehicles

WYDOT has discovered that there is a high demand for used vehicles and equipment, particularly patrol cars. WYDOT now sells its vehicles and equipment through an auction website to capitalize on this opportunity.

**Benefit:** The Department makes about three times more per item by selling online than it does through traditional dealership trade-ins.

**Project Status:** Implemented

### City/County Purchasing Benefits via WYDOT

WYDOT is reaching out to local governments to allow them to take advantage of its bulk purchasing ability. The Department will also provide its specifications and bid documents to local governments if they choose to bid the items through their own processes. WYDOT has also provides buyback information to local governments for their use in negotiating their own equipment agreements with dealers. (See Buyback Program in Roads and Bridges below.)

**Benefit:** Contracts now extend WYDOT pricing for materials and fleet equipment to local governments who wish to purchase the same items.

**Project Status:** Implemented

### Efficient Project Financial Obligation Processes

WYDOT created an interactive budget process that provides better use of funding and more information with focus on the transparency of all WYDOT budget activities. Information is better shared with the Joint Appropriations and Joint Transportation, Highways & Military Affairs Committee on an annual basis.

WYDOT continues to be a leader in the nation with active obligations, keeping available funding working on projects. As a result, \$25 million of Highway Funds were made available to additional projects.



**Benefit:** Actively putting funds to work on projects improves Wyoming's economy and supports its workforce. WYDOT welcomes the opportunity to share this information in an effort to remain transparent in all of its endeavors.

**Project Status:** Implemented

### **Master Service Agreements**

WYDOT has deployed master service agreements for consultant and contractor work needed on an inconsistent basis. Often these are services needed quickly and without prior warning.

**Benefit:** These agreements allow for quick assignment and delivery of repetitive services as needed preventing project delays. The agreements are limited to a maximum period of five years so new firms have an opportunity to compete.

**Project Status:** Implemented

### **Wholesale Fuel Purchase for Flight Operations**

WYDOT has purchased its jet fuel through wholesale resources and maintained a facility to self-serve its aircraft since 2008. This has allowed a reduced cost for acquisition and a ready supply.

**Benefit:** WYDOT's use of the bulk/wholesale fuel purchase program accounts for roughly 80-85% of the fuel consumed by the Flight Operations Program. Overall savings in FY16 was \$135,800. The average difference the price of one gallon of wholesale fuel versus retail fuel was \$1.80. A greater savings is expected in FY17 as the price difference between wholesale and retail has increased to \$2.74 a gallon.

**Project Status:** Implemented

## **Roads and Bridges**

### **Accelerated Emergency Repair Contracts**

WYDOT is exploring opportunities to streamline the design, advertising, and award of emergency repair contracts. Slide and flood repair is highly variable and often involves specialized contracting methods.

**Benefit:** Accelerating contracts to repair damages due to landslides and flooding will ensure routes and facilities are reopened in a timely manner minimizing the impacts and costs to the traveling public.

**Project Status:** Implemented

### **Asset Management System**

WYDOT implemented an integrated asset management system. This system now includes a Bridge Management System, Pavement Management System, and Safety Management System. Linking asset management to a variety of possible funding scenarios allows WYDOT to make appropriate investment decisions. As annual data is added to the system, its predictive power improves. These management systems are being updated and refined to ensure that WYDOT constructs those projects having the greatest value.



The district offices of WYDOT have realized value from the pavement management system, bridge management system, and safety management system by selecting and prioritizing highway improvement projects. The safety management system was used to identify high-crash curves, which resulted in successful projects at those curve locations. The districts are now using the safety management system to identify project priorities.

Based on the additional revenues, WYDOT has updated the predictive models used in its pavement and bridge management systems. The annual pavement and bridge rehabilitation strategies are monitored in the development of the State Transportation Improvement Program (STIP) to ensure that goals are met.

**Benefit:** To maintain the roadways in their current condition, the management system favors extending the life of existing pavements and other highway infrastructure assets, and recommends fewer major reconstruction projects. Data from all three management systems is becoming valuable information that the districts can use efficiently. The management systems have facilitated better and timelier discussions about transportation safety issues between WYDOT and local governments.

**Project Status:** Implemented

#### **Automated Drilling Log Entry**

WYDOT has developed standard templates for its various types of drilling operations. These templates have streamlined data entry and plotting of the soil information into the electronic drill log software.

**Benefit:** WYDOT spends about 30% less time entering drill log information, which is now electronically stored and easily retrieved in a digital format.

**Project Status:** Implemented

#### **Bridge Inspection**

Working with the Federal Highway Administration (FHWA), WYDOT is exploring opportunities to complete bridge inspections on a risk-based approach.

Inspection procedures are being revised due to changes in national bridge inspection practices. Inspection software has been updated and consultants are being used to complete some of the bridge inspections.

**Benefit:** This will result in a more effective and consistent evaluation of the structural condition and provide for better inputs into and recommendations from the Bridge Management System.

**Project Status:** Ongoing

#### **Bridge Inspection Software**

WYDOT modernized its bridge inspection software. The new software is web-based and customized for WYDOT. The software incorporates new national inspection elements that are required by the FHWA.



**Benefit:** The software provides a more effective means of transferring data, better reporting tools, and built-in quality control and quality assurance functions to help ensure quality data for the bridge management system.

**Project Status:** Implemented

#### **Budget and Overtime Electronic Management Tools**

WYDOT executive staff and program managers use an electronic management tool that quickly provides timely budget and labor/overtime reports. Management can review information in different formats with the click of an icon, and they can sort information by division or crew level details.

**Benefit:** This process offers timely and proactive budget and cost tracking reviews.

**Project Status:** Implemented

#### **Buyback Program – Heavy Equipment**

WYDOT partnered with its equipment vendors to institute a guaranteed buyback option for certain heavy equipment bids. This option allows the Department to acquire new equipment at a greatly reduced cost over the buyback period. At the end of the buyback period, the used equipment is returned to the vendor with no additional obligation to the state.

**Benefit:** Significantly reduced ownership cost for the buyback period. Overall, this program has proven to be very successful. The most recent buyback bid resulted in the low bidder buying back the equipment for more than what WYDOT initially paid for the equipment. Due to the success in heavy equipment, WYDOT has expanded the program to more types of equipment where possible.

**Project Status:** Implemented and expanding

#### **Contracting Road Operations**

WYDOT is currently contracting some services, such as plowing snow on low volume roads, maintenance of roadway lighting, painting, landscape maintenance, vehicle servicing, and minor repairs in areas such as guardrail and snow fence.

**Benefit:** WYDOT will continue to outsource contractual services when it is practical and/or it saves state funds.

**Project Status:** Implemented and expanding

#### **Contractors' Desk Application**

WYDOT simplified and streamlined its process by which highway contractors bid on WYDOT construction projects.

**Benefit:** The computer application has greatly reduced the time to submit bids and calculation errors have been virtually eliminated.

**Project Status:** Implemented



### **Corporate Sponsorship for Litter Control**

WYDOT'S Maintenance staff is outsourcing portions of litter pick up through corporate sponsorship to reduce litter control costs. The Department is currently researching support for and the applicability of the project in Wyoming.

**Benefit:** Sponsorship areas are maintained at no cost to the Department through funding by the private sector, reducing WYDOT's litter control costs.

**Project Status:** Implemented

### **County Road Design Guide**

In conjunction with the Wyoming County Commissioners Association, WYDOT reviewed, modified, and streamlined the County Road Design Guide. The new guide provides design requirements, including administrative guidelines for county, Industrial Road Program, state, and federally-funded projects. WYDOT also offers the new guide on its website.

**Benefit:** The new guide provides greater flexibility in design, based on program or project type and funding versus a one-size-fits-all approach.

**Project Status:** Implemented

### **Digital Survey Photography**

WYDOT converted from a film based photogrammetry to digital camera operations. This transition was the final piece of technology needed to make the Department's survey operations 100% digital.

**Benefit:** The need to buy, process, develop, and store large rolls of film is no longer necessary. The digital format allows for easier sharing of data and pictures both internally and to external customers.

**Project Status:** Implemented

### **Electronic Documentation System (EDS)**

The Construction staff implemented an EDS for administering construction projects. The staff continues to maintain and enhance this program.

**Benefit:** The EDS program further reduces handwritten paperwork while streamlining contractor input and feedback mechanisms, in addition to other time and cost saving features. Automation reduces the risk of errors.

All highway construction projects are now administered using EDS. Project documentation is readily accessible by field, district, and headquarters personnel. Monthly pay estimates are processed more efficiently.

**Project Status:** Implemented

### **Energy Efficiency Audit**

WYDOT utilized the Wyoming Energy Conservation Improvement Program (WYECIP) to initiate successful energy savings. Much of the energy efficiency upgrade project costs are paid for using future energy savings realized through the implementation of more efficient technologies. Phase 1 included:



lighting, plumbing, waste oil heaters, cooling tower and rooftop air handler units, paint booth upgrades, and new boilers for building heat. WYDOT investigated its buildings around the state and over 30 buildings received some sort of energy retrofit. Seventy-one percent of the savings is predicted to come from lighting upgrades. Phase 2 included facility improvements, parking lot lighting, statewide roadway lighting, highway tunnels at Green River and Cody, compressed natural gas (CNG) maintenance facilities, and an arc flash study of WYDOT buildings. WYDOT is the first state agency in the nation to implement such a program.

**Benefit:** Following the WYECIP, WYDOT will receive a total of \$14.58 million in energy efficiency upgrades and \$1.61 million in cash for capital improvements. All other project costs are paid for with future utility cost savings. Total partnership savings over the next 15 years is estimated at \$16.75 million.

**Project Status:** Implemented

#### **Environmental Mitigation and Commitment Database**

WYDOT implemented a program for tracking environmental commitments associated with highway projects. This initiative utilizes a database that aids in the post-construction monitoring of environmental mitigation projects.

**Benefit:** The purpose of this effort was to reduce the risk for WYDOT and FHWA of overlooking an environmental commitment that would impact an outside regulatory agency. This also assists in the transparency to individuals or groups that secure an agreement with WYDOT to perform specific mitigation of mitigation progress.

**Project Status:** Implemented

#### **Fleet and Equipment Maintenance**

WYDOT continues to work to reduce vehicle idling time. This includes changes to warning lights and how they are wired into the vehicles, as well as educating its operators about how the diesel exhaust fluid system works in conjunction with the particulate filters. Idling for long periods can plug the particulate filters on new trucks. Less vehicle idling can prevent this from happening, reducing costly engine damage and saving fuel costs.

Tractor transport trucks with removable dump boxes and sanders were purchased to add versatility. Some trucks are purchased with a 13-speed transmission to accommodate the commercial drivers' license testing for new WYDOT operators. These trucks can also be used for snow removal, which was not possible with the old transport trucks.

WYDOT continues to increase its use of direct application tanks to the fleet for improved storm response. Snow maintenance crews have had good success with the new equipment and methods.

WYDOT crews are encouraged to innovate. Our South Pass crew has equipped one truck with a spray bar that drills brine into the hard pack. Once a small area is melted, the snow and ice pack breaks up quickly.



WYDOT continues to work on writing new purchasing specifications to ensure that it is getting the correct sized vehicle for the job. For example, the specifications for the rural striping tender truck have been revised to support an entire day of striping without returning to a station to refill with paint and beads to increase efficiency of striping operations.

**Benefit:** All of these changes increase the overall efficiency of WYDOT's equipment operations.

**Project Status:** Ongoing

#### **Field Operations Documents and Reusing Computers**

Computers that would normally have gone to Surplus Property are being used by field construction crews to electronically document project support activities, such as project diaries, materials testing, and other non-pay items.

**Benefit:** WYDOT computers are typically traded in five-year intervals. This program extends laptop use even further without having to purchase new computers for field tasks.

**Project Status:** Implemented

#### **FHWA Risk Assessment Review**

The FHWA and WYDOT conduct an annual comprehensive assessment of various programs, including the design, construction, right-of-way, materials, bridge, environmental, and local government coordination functions.

**Benefit:** The annual assessment process identifies cost and regulatory risks, and helps us formulate performance improvement tasks within WYDOT programs.

**Project Status:** Ongoing

#### **Fuel Stations**

WYDOT has implemented a controlled use fuel system allowing other state agencies access to our statewide fuel systems.

**Benefit:** Fuel consumption is more closely accounted for and lost fuel has been minimized.

**Project Status:** Implemented

#### **Integrated Highway Project Management**

WYDOT has implemented project management oversight to coordinate and direct communications and efforts across all programs involved in the design and development of highway projects.

**Benefit:** Project activities and processes are monitored resulting in fewer delays and more rapid resolutions to disruptions. Since creating the Highway Project Delivery Program, there has been a 60% reduction in significantly at-risk projects. Increased participation and buy-in to the project management process is paving the way for continued success in the efficient delivery of highway projects.

**Project Status:** Implemented



### **Improved Project Schedule Review**

Highway design project schedules are the basis for scheduling and coordinating project design work activities. Scheduled activity durations and relationships are being reviewed to ensure an efficient project delivery process and reduce the overall time needed to complete the design of transportation projects.

**Benefit:** Efficient and realistic design schedules will result in more efficient resource utilization and project planning.

**Project Status:** Implemented 2018

### **Highway Project “Shelf” Development**

Programs and districts are working toward a goal of having one year’s worth of projects “on the shelf.” These are projects that have been designed and are ready for contract letting, or could be made ready very rapidly.

**Benefit:** WYDOT will experience increased agility as a result of this initiative. If more money becomes available, or an unforeseen disruption occurs that prevents a project from being let to contract as scheduled, additional projects will be readily available so that impacts can be minimized and all highway funds can be spent as they become available.

**Project Status:** Implemented and Ongoing

### **Historic Project Analysis**

WYDOT has hired an historic analyst to lead the federal 106 process on projects where there is an adverse effect on a historic bridge or property. Bridges and other structures become eligible for historic designation when, among other things, they reach 50 years of age. Many bridges have reached the 50-year age requirement and many urban areas where WYDOT has construction projects exceed that age. The skills and time needed for the federal 106 process had become very onerous and as a result, projects were delayed.

**Benefit:** The historic analyst will coordinate these activities with other state agencies and help keep the project costs contained and project design on schedule.

**Project Status:** Implemented

### **Innovative Snow Fence Contracting**

WYDOT continues to explore innovative contracting methods to enhance the delivery of services throughout the state. For example, WYDOT has entered into long-term contracts that utilize a private contractor to maintain, repair, replace, and construct snow fence throughout the state. The contractor salvages and markets the recycled weathered wood internationally.

**Benefit:** In this instance, snow fence repair and replacement is being completed timely and at little or no cost to the agency. The recycled weathered lumber minimizes waste and contributes to the overall state economy. Additionally, WYDOT personnel spend less time maintaining snow fences, allowing staff to perform other essential maintenance functions.

**Project Status:** Implemented





### **Light Duty Vehicle Mileage/Replacement Review**

WYDOT has increased its minimum mileage requirements for replacing light duty vehicles, including patrol vehicles, sedans, and light-duty pickup trucks, as a result of an improved preventive maintenance program. Mileage for trade-in was increased by 20,000 miles for each vehicle classification. Patrol vehicles will now be traded at 120,000 miles and all other light duty fleet will be evaluated for trade-in at 160,000 miles. Diesel pickups will be traded at 200,000 miles.

**Benefit:** WYDOT estimates it has saved over \$1 million per year. Evaluation will continue to optimize the balance between maintenance costs, trade-in values, and mileage for trading its light duty vehicles.

**Project Status:** Implemented

### **Long-Range Fleet and Equipment Planning**

Long-range plans to determine fleet and equipment needs are developed. The plans help WYDOT to determine the most cost-effective method for meeting operational needs in the future. Work activities and the required equipment are being evaluated to compare costs to contract activities. The plan also sets forth guidelines for the best method for obtaining equipment; buyback, leasing, or renting; and/or rebuilding existing equipment. Equipment fleet costs and usage are also being evaluated.

**Benefit:** Cost savings and optimization of equipment usage.

**Project Status:** Ongoing

### **Managing Risks in Project Selection**

With uncertainties in funding sources and inflation rates, WYDOT studied a mix of projects by type and dollar value to assure an efficient project design flow. Larger jobs, primarily reconstruction, continue to be a focus to let to contract at the scheduled time.

**Benefit:** This minimized design costs, delays in project delivery, and maximized the efficient use of resources.

**Project Status:** Implemented and complete.

### **Off-System Bridge Widths**

The Off-System Bridge Replacement Program (BROS) helps fund the timely replacement of bridges owned by cities, towns, and counties. The local entity is required to match approximately 10% of project costs. WYDOT has decreased the minimum bridge roadway widths for BROS projects, increasing the use and efficiency of the program.

**Benefit:** The more narrow bridge widths will reduce project costs. Applying the new widths to the bridges that have been constructed using BROS funds over the past 10 years yields a possible average savings of \$70,000 to \$80,000 per structure on future structural projects.

**Project Status:** Implemented



### **Pavement Rehabilitation Solutions**

WYDOT is utilizing innovative pavement rehabilitation solutions. Full depth reclamation (FDR) is a cost-effective pavement rehabilitation strategy. The existing pavement is recycled and rejuvenated in-place utilizing an environmentally friendly construction process. FDR and other recycling opportunities, such as cold and hot in-place recycling of the asphalt pavements, will continue to be utilized.

**Benefit:** In most cases, the construction duration is reduced and impacts to the traveling public are minimized.

**Project Status:** Implemented

### **Programmatic Biological Opinion**

WYDOT, working with various regulatory agencies, has established a programmatic biological opinion which enables WYDOT to streamline the process of Section 7 of the Endangered Species Act and more efficiently deliver projects. These opinions must be renewed periodically. The current programmatic agreement and process were created six years ago, and the agreement was renewed in 2017.

**Benefit:** This action ensures a timely delivery of projects in the STIP. Over the last six years the process has minimized project delivery, application, and review delays for WYDOT and other regulatory agencies.

**Project Status:** Implemented

### **Project Scope and Costs**

WYDOT is using its asset management systems to identify and weigh project purposes and needs while optimizing the costs and overall program of projects to meet performance goals.

**Benefit:** The anticipated outcome is a better defined project scope, resulting in a reduction in scope growth, more accurate construction cost estimates, an appropriate mix of project types, a better representation of the investment, and a more stable STIP.

**Project Status:** Ongoing

### **Review of Design Functions**

WYDOT uses consultants to provide a review of project design documents for conformance with national and state design requirements. Work includes developing a peer review process and a quality-scoring system to evaluate plans and specifications. This work includes not only internally generated designs but also consultant designs and plans. WYDOT's design process and procedures are also evaluated.

**Benefit:** WYDOT expects to implement a more efficient design process based on the outcome of the study. Enhancing documentation, reducing duplicate processes, eliminating redundant reports and reviews, and making better use of technology will ensure a more efficient use of resources.

**Project Status:** Implemented



### **Right-of-Way Document Management System**

WYDOT enhanced its right-of-way document management system which stores the data and generates the necessary reports and letters needed for right-of-way acquisition and disposal, and right-of-way leases.

**Benefit:** Ensure consistency for better internal tracking of federal government parcels by their reference numbers, promote the generation of more efficient appraisal reports, and reduce data entry time. Also, the conversion of all templates freed up space on the network server.

**Project Status:** Implemented

### **Road Maintenance and Operation**

Road maintenance crews are encouraged to innovate. They have streamlined processes to make their work more efficient. This includes, but is not limited to:

- Combining maintenance crews to be more flexible in responding to customer needs. Resulted in improved response rates and more flexible capacity utilization (Implemented);
- Contracting rest area maintenance and moving the former maintenance position to a higher-priority job assignment in the field. Allowed for more time to work on other maintenance projects (Implemented);
- Reduced fleet purchases and time by combining chip seal equipment, motor graders, auger lift trucks, etc., into multiple equipment use setups (Implemented);
- Flexible budgeting of road work and assignment of man hours to address the highest priority work to achieve minimum maintenance quality control standards (Implemented);
- Replaced some median barrier warning devices with a flexible type of device to reduce the frequency of replacement (Implemented);
- Districts are cross-training construction and maintenance personnel to better utilize personnel during peak workloads (Implemented);
- Use of culvert cameras to determine the physical integrity inside of a culvert structure, improve the timely maintenance of culverts, and aid designers in determining whether a culvert repair and replacement is necessary (Implemented); and
- Developed standard agreements so that local ranchers and farmers can appropriately forage hay from the highway right-of-ways. The benefit is that WYDOT does not have to use its own workforce and equipment to cut the vegetation from the right-of-way (Implemented).

### **Rolling Letting Schedules**

Historically, WYDOT published an annual letting schedule identifying the monthly projects that would be let during the current fiscal year (October through September). The schedule is now updated monthly to identify projects that will be let within the next 12 months. This provides the contracting community a continuous, full-year look ahead for upcoming projects.

**Benefit:** Contractors are able to more effectively plan their work activities and schedule resources in anticipation of projects in the coming construction year.



**Project Status:** Implemented

### **Salt/Sand Storage Environmental Risk Reviews**

WYDOT is reviewing its current building designs and placement options for salt/sand storage buildings. Environmental regulations require WYDOT to prevent groundwater contamination from its salt/sand stockpiles. The Department has engaged in a program over the last several years to contain and prevent runoff of water at these sites.

**Benefit:** The program was suspended to review efficiencies in design, building types, and other state departments of transportation practices to maintain a “best practice” plan for Wyoming.

**Project Status:** Implemented

### **Shared Services and Resources**

WYDOT is sharing personnel and equipment across district boundaries to more efficiently and effectively address localized short-term needs. This past winter, several rotary plows and operators were repositioned to assist in clearing record snowfall in the western part of the state. Similarly, several crews assisted others in removing snow from roadways and responding to flood events. Other opportunities are being considered.

**Benefit:** The Department will be more nimble and can address needs in a more timely and efficient manner.

**Project Status:** Implemented

### **Sign Installation Outsourcing**

Recent legislation and updates to the specific service signing rules and regulations provide the necessary funding for WYDOT to outsource installation of certain signs on the interstate highway system.

**Benefit:** The reduced traffic sign crew workload expedited upgrading the specific service signs to meet Manual on Uniform Traffic Control criteria and provides an appropriate level of sign quality. These changes also benefit the traveling public.

**Project Status:** Implemented

### **Snow Control Techniques**

Road maintenance crews are encouraged to innovate. They have streamlined processes to make their work more efficient. This includes, but is not limited to:

- Implemented use of blade technology to improve snow removal efficiencies, increase safety, reduce fuel use, and reduce additional snow cleanup and snow “booming” operations (Implemented);
- Changing plow driver schedules to split shifts at several locations to improve snow removal coverage (Implemented);
- Utilizing new chemicals in snow removal efforts such as magnesium chloride, beet juice, etc. and pre-storm treatment of known problem locations with liquid chemicals to reduce ice and snow build up (Implemented);



- Installation of salt brine storage tanks and mixing stations at remote locations to improve response time and reduce travel time (Implemented);
- Implemented direct-brine application tanks to increase WYDOT's flexibility in handling different types of storm events. WYDOT can pull low-boys and water tanks and, in the future, belly dumps to improve efficiency in operations without sacrificing sanders or liquid tank dispensers for snow removal operations (Implemented);
- Conversion of large tanker trailers to direct application tanks allows for brine treatment to be applied to the roadway, while keeping the trucks on the road for longer periods of time before having to return and refill treatment materials (Implemented);
- Modified snow removal fleet to increase the number of larger 10-yard trucks versus 4-yard trucks (Implemented);
- Purchased new trucks equipped with more advanced plow controls and equipment to pre-mix deicer with the sand before it is applied to the road surface (Implemented);
- Contract out snow removal at rest areas to free up more workforce hours for necessary work on the highway. This allows more of WYDOT's crews and snowplows to focus on snow and ice maintenance on the highway routes (Implemented);
- Developed snow removal performance measures to track current performance and to help cultivate snow and ice removal efficiencies (Implemented); and
- Implemented the use of tow plows state-wide for snow maintenance. The plows attach to existing snow plow trucks and are capable of plowing more than one lane of highway in one pass while utilizing only one plow truck (Implemented).

### **Structural Analysis Software**

The Bridge Program uses a structural analysis software program called BRASS. BRASS is a suite of design and analysis programs that was developed by WYDOT more than 30 years ago. This software is maintained by a consultant, and marketed and sold to other government entities and consulting groups.

**Benefit:** License fees are used for updating and enhancing the software based on changes to the design specification. This has been, and continues to be, a primary design tool for the design and rating of bridges. Enhancements to the software continue to improve design efficiencies, reduce design time and minimize errors in calculations.

**Project Status:** Implemented

### **State-wide Liaison with Federal Agencies**

WYDOT continues to partner with the U.S. Forest Service to support a liaison position to promote and facilitate the effective delivery of projects affecting the national forests in Wyoming. The liaison anticipates the needs and opportunities associated with projects and assists in the resolution of challenges.

**Benefit:** Since this program was implemented, no WYDOT projects have been delayed due to conflicts with the U.S. Forest Service. Project planning and development, NEPA document preparation, and reviews and permitting have been streamlined. Through this relationship, communication has greatly improved and projects stay on schedule.

**Project Status:** Implemented



### **Streamlined Right-of-Way System**

WYDOT implemented a new right-of-way management system to produce and track property acquisition documents and manage the acquisition process more efficiently.

**Benefit:** The acquisition process is a sizable undertaking for the Department, and results from the last three years indicate that the average number of days needed to acquire a property has been reduced by up to 20 percent. This is the result of the new software and reorganization of teams resulting in the ability to work on several different processes concurrently.

**Project Status:** Implemented

### **Public Transit Database**

WYDOT oversees the distribution of federal funds for transit activities, and is responsible for reporting transactions to the Federal Transit Administration (FTA). Over 40 Wyoming transit providers receive federal funding. All reporting of their core data, such as vehicle use and ridership, has to be manipulated or re-entered in several different formats. A single website is being constructed to allow for the providers to enter their required data for the grants and allows WYDOT to use the data in decision-making processes.

**Benefit:** This project reduced the man-hours needed to enter, manipulate, and put the data into a format that is useable for decision makers. Decisions, such as the allocation of limited funds, became more transparent to the public and customers.

**Project Status:** Implemented

### **Value Engineering Studies**

Value engineering studies are being conducted on WYDOT road design projects.

**Benefit:** Recommendations are reviewed and evaluated for possible implementation to address the efficiencies or inefficiencies of each project.

**Project Status:** Implemented

### **Variable Speed Limits**

Electronic variable speed limit (VSL) signs have been deployed in several locations throughout the state. Actual vehicle speeds, roadway conditions, and weather conditions are monitored.

**Benefit:** Studies have indicated that there has been a reduction in vehicle crashes. Speed limits are remotely adjusted to ensure drivers are traveling at a speed commensurate with the actual conditions.

**Project Status:** Implemented

### **Vehicle Repair**

Light duty vehicle repair is being outsourced to allow our heavy duty vehicle mechanics more time to work on the heavy diesel equipment fleet.

**Benefit:** This ensures timely maintenance and minimizes down time of the entire vehicle fleet.



**Project Status:** Implemented

### **Warm Mix Asphalt**

Warm plant mix asphalt is a technology that allows lower mixing and compaction temperatures compared to that of traditional hot plant mix asphalt pavements.

**Benefit:** This technology reduces greenhouse gases, reduces worker exposure to asphalt fumes, and extends paving seasons. Burner fuel consumption is reduced and construction cost savings should be realized.

**Project Status:** Implemented

### **WYDOT Design Guides**

WYDOT design guides and associated policies have been updated to reflect the minimum nationally recognized design standards. The FHWA and the Transportation Commission approved the new WYDOT Design Guide in February 2014 and project reviews and design standards were implemented in March 2014. Savings realized as a result of these changes resulted in several additional miles of highway improvements being constructed annually.

**Benefit:** This allows for greater options in design and provides significant cost savings, shorter design timelines, and greater opportunity to meet the public's project delivery expectations.

**Project Status:** Implemented

## **Support Services**

### **Compliance and Investigation Efficiencies**

WYDOT Evaluated memberships and subscriptions and discontinued memberships to non-essential trade organizations or publications.

The Compliance and Investigation Program repurposed locking cabinets that would have been discarded by another program to maintain evidence and confidential information in the Douglas and Thermopolis offices.

The program also purchased multi-function printers for Douglas and Thermopolis offices to reduce postage and increase efficiency in providing case reports and correspondence to the main office for record keeping.

**Benefit:** All of the above items will save WYDOT significant time and money in the future.

**Project Status:** Implemented

### **Compliance and Investigation Vehicle Training Modules**

WYDOT has prepared educational training modules respective to elected officials, law enforcement agencies, and WYDOT-regulated businesses concerning many types of vehicle identification, sale, titling, and registration circumstances. These training modules are available upon request in an electronic format for entities to use at their convenience.



**Benefit:** The state has significantly reduced the use of resources for an investigator to travel for training and compliance issues.

**Project Status:** Implemented

#### **Driver Services-National Registry II Pilot Project**

WYDOT is developing an electronic transfer system for DOT Medical Certificate information between the Medical Examiner and the state. This project will facilitate communication between the states regarding commercial driver qualifications.

**Benefit:** Reduction in manual data entry for the CDL Helpdesk regarding DOT Medical Certificates for Wyoming commercial drivers. Commercial driver license holders will also benefit by not having to visit offices to update their medical cards in person.

**Project Status:** Ongoing

#### **Driver Services-Online Driving Record Inquiry System**

WYDOT has implemented an online web-based driving record inquiry process. This system allows an insurance agent to verify the driving history of an applicant before issuing a policy. Previously, an insurance company would issue a policy and wait for the requested paper copy of a driving record to be sent from the Driver Services Program.

**Benefit:** The insurance industry is now able to make real-time, informed decisions when issuing policies.

**Project Status:** Implemented

#### **Drug and Alcohol Training**

WYDOT provides drug and alcohol training for all WYDOT commercial driver license holders. District offices have multiple DVDs and the training was added to the WYDOT intranet site for easy online access by employees.

**Benefit:** This training saves employee down time and travel expenses as they do not need to attend a class away from their duty station.

**Project Status:** Implemented

#### **Human Resources-Electronic Document Management**

Human Resources reduced the time for processing new employees by implementing an electronic new hire employment packet. In addition, the Human Resource program is working to create electronic personnel files for current and new employees.

**Benefit:** Decrease in the amount of time and resources to complete processes allowing for additional focus on customer service.

**Project Status:** Implemented





### **International Fuel Tax Agreement and Registration Plan System**

WYDOT is implementing an online web-based system for customers to report their quarterly taxes, order new license plates and provide registration paperwork for commercial customers subject to the International Fuel Tax Agreement and International Registration Plan.

**Benefit:** Better utilization of WYDOT resources for quality control and to provide better customer service to commercial motor carriers.

**Project Status:** Ongoing

### **Mass Certified Mailings**

Districts now use e-receipts for certified mail through the U.S. Postal Service. This saves the agency \$1.35 for each certified letter. As an example, WYDOT must prove it has contacted 51% of landowners when dealing with projects on the Wind River Reservation, which can equate to 2,500 letters per mailing.

**Benefit:** Using the example above, the savings is \$3,375 for one mailing.

**Project Status:** Implemented

### **Motor Vehicle Services-Online Temporary Vehicle Tag System**

WYDOT is implementing an online web-based system for temporary vehicle registrations for sale or transfer of vehicles. Currently, dealerships are required to mail a portion of the registration to Motor Vehicle Services for record keeping purposes. Additionally, if a vehicle is stopped by law enforcement with a temporary registration outside business hours, it can be difficult for law enforcement to determine ownership.

**Benefit:** More efficient use of WYDOT resources for both record keeping and audit purposes. Enables law enforcement to better identify the ownership of vehicles that have a temporary registration.

**Project Status:** Ongoing

### **WYDOT Staff Development and Training**

WYDOT has implemented several unique training opportunities, such technical training, leadership training, and personal enhancement training, allowing our employees to learn new skills and techniques to make them more productive and efficient in their daily activities. Many of these courses are developed and shared on a national level and employees participate via the internet. Training is also being accomplished throughout the state rather than sending many employees to Cheyenne for training, where the WYDOT training center is located, and district personnel carpool to meetings, if necessary, to minimize travel expenses.

**Benefit:** Potential cost savings, improved efficiency, and staff retention.

**Project Status:** Implemented and Ongoing



## Technology

### **Automated “Call Before You Dig” System**

WYDOT developed an email and voice response system that can automatically let excavators know if they are cleared of WYDOT utilities. When people call for utility locates, they can provide their email address. If they choose to do so and there are no WYDOT utilities in the project area, the system will automatically send them a message. If they do not provide an email address or the email address is not valid, an automated phone system will call them to provide the information. The system asks for confirmation, so if the call fails, WYDOT personnel will be alerted to follow up manually.

**Benefit:** WYDOT reviews and clears approximately 20,000 “Call Before You Dig” requests annually. In the past, routine clearance calls took approximately six hours per day during peak construction months. The system now is completely automated and will email or call excavators with information.

**Project Status:** Implemented

### **Automated Overweight/Oversize Vehicle Bridge Analysis**

An upgraded application has been developed to replace an older graphical information systems program that can no longer be updated or maintained. In the future, the application may be used by port-of-entry personnel and possibly the trucking industry, to efficiently analyze and verify that the load can safely travel along a proposed route.

**Benefit:** The new system allows users to more efficiently input a route for an overweight load that is traveling through Wyoming. All bridges that the vehicle drives over are automatically checked to ensure that it can pass without causing damage to the bridge. The software saves time in the analysis of overweight vehicles, provides better reporting tools, and allows WYDOT to track how many loads are being placed on the state’s bridges.

**Project Status:** Implemented

### **Automated Road Condition Reporting**

The Road Condition Reporting System (RCRS) is an Android-based application that allows snow plow operators to update road conditions from a tablet mounted in snow plows. The application can communicate via the statewide WyoLink radio network or at state-owned Wi-Fi hotspots. The RCRS also improves situational awareness of plow operators by providing them weather radar, information about what is posted on electronic message boards, real-time information from environmental sensors and more. Development of the tablet was paid for through a Federal Highway Administration Weather Responsive Traffic Management grant, and additional equipment was purchased through State Transportation Innovation Council Incentive Funds.

**Benefit:** The project required an independent evaluation that showed use of the application with a 75% adoption rate could save the equivalent of one full-time TMC operator per year. In addition, operators who used the application provided twice as many road condition reports as those who did not have access to it and three times as many variable speed limit recommendations, thereby making roads safer for the traveling public.



**Project Status:** Implemented and Ongoing

### **Citrix Upgrade**

WYDOT upgraded and updated the Citrix Application and Virtual Desktop Deployment environment.

**Benefit:** This system brought WYDOT up-to-date in version, support and ability to deploy systems quicker using the virtual environment.

**Project Status:** Implemented

### **Cloud Based Proxy Server**

WYDOT implemented a cloud based proxy server to improve information management efficiencies

**Benefit:** The cloud based proxy server makes better use of the limited network bandwidth by routing Internet traffic across a shorter path.

**Project Status:** Implemented

### **Commercial Vehicle Operator Portal**

WYDOT developed a website specifically designed to provide commercial vehicle operators the information they need to make travel decision when inclement weather is predicted. The password-protected website provides road condition forecast in 12-hour increments up to 72 hours in advance for the areas that are most affected by truck traffic: visibility, road surface condition, and wind. The website provides an easy-to-read color coded map and text-based information to help commercial vehicle operators decide whether to adjust their travel plans due to storms.

**Benefit:** Commercial vehicle operators are better able to make informed travel decisions. Users are also able to provide feedback which allows TMC to make useful enhancements to the website.

**Project Status:** Implemented

### **Computer Lending Library**

WYDOT IT purchased a number of different small form factor (SFF) computers to allow personnel to then borrow for evaluation. This saves the state time and effort in evaluating new hardware/software.

**Benefit:** The pilot program allowed employees to evaluate various types of SFF computers and select the platform that best fit their needs. It helps the state make quicker and practical decisions about technology.

**Project Status:** Implemented

### **Cyber Audits**

WYDOT conducts cyber security audits of its systems more frequently and in more detail than other audit systems.

**Benefit:** This allows WYDOT to have a third party evaluate its security posture and to make recommendations to improve security across WYDOT. By reducing security threats, there is a reduction in the risk of mitigation costs that could come with a breach in security. This is



also beneficial to the other state agencies in reducing the risk to their systems coming from WYDOT.

**Project Status:** Implemented

### **Enterprise Resource Project**

WYDOT solicited requests for proposals for ERP hosting services and was able to obtain new hosting with minimal increased cost.

**Benefit:** The new environment provides a virtual infrastructure and eliminates the need to purchase and replace hardware. The new environment also provides an improved disaster recovery environment with respect to recovery times and recovery points.

**Project Status:** Implemented

### **Falcon Document Management System (DMS)**

The Falcon DMS is a searchable document management database that saves time and promotes better agency-wide decision making by allowing information to be more readily available. The system makes it easier to store and share files internally among all programs and with external customers as well. Most WYDOT reports and plan sets are scanned and distributed using this system.

**Benefit:** The system is also available on WYDOT's website for external customers (consultants, local governments, other federal agencies). Users can access documents directly rather than requesting them from WYDOT. The ability to share files electronically has reduced agency paper consumption, mailing costs and time needed to file and retrieve files. For example, bridge inspection reports are now shared with local governments electronically rather than sending paper copies of these reports.

**Project Status:** Implemented and Ongoing

### **Firewall Upgrade**

WYDOT worked with Enterprise Technology Services to upgrade its network firewall. Typically these systems are implemented and used until they reach end-of-life. The upgrade was anticipated and planned for as part of WYDOT's normal technology replacement cycle.

**Benefit:** The new firewall improves WYDOT's cyber security posture, reduces risks associated with potential system failures, and has improved the performance of the network.

**Project Status:** Implemented

### **Fuel Tax System**

WYDOT IT rewrote the mainframe fuel tax system to run as a bolt-on application within existing software used by WYDOT.

**Benefit:** Removing the old system from the mainframe and placing it within an existing software program saves time and money. The rewrite also improves productivity, as it will allow system users to write and run their own reports. The system is also easier to modify and maintain.



**Project Status:** Implemented

### **Global Position System (GPS) Survey Equipment**

GPS has made it possible for one person to measure stockpiles, guardrail, fence, set grade stakes, and to accomplish other tasks that, in the past, required three-person crews using rod and level or total station survey equipment.

**Benefit:** One person can do the job that a three-person crew used to do, which resulted in a significant savings to WYDOT. Districts can now use GPS survey equipment to document project quantities for making payments to contractors in much less time.

**Project Status:** Implemented

### **Highway Advisory Radio**

WYDOT has developed a highway advisory radio using a powerful, yet inexpensive, computer called "Raspberry Pi."

**Benefit:** The Raspberry Pi-based highway advisory radio is very versatile and inexpensive. The system can automate road condition updates, thereby improving the efficiency of the TMC, while reducing the cost of a highway advisory radio controller from about \$10,000 to about \$50.

**Project Status:** Implemented and Ongoing

### **Highway Safety Quality Assurance System**

WYDOT developed a new system for quality assurance within the highway safety program.

**Benefit:** This system reduced the amount of time needed to process reports from two weeks to two hours.

**Project Status:** Implemented

### **Monitoring System – State Facilities**

WYDOT currently monitors access and the mechanical systems of the State's critical facilities. This includes systems such as HVAC, lighting, fire, smoke and moisture detection, power, etc. which was previously done by the Department of Administration and Information. The after-hours monitoring of these facilities has now been transferred to WYDOT and the number of temporary personnel that were previously needed for coverage has been reduced.

**Benefit:** Future general fund expenditures will not be necessary, resulting in an overall anticipated general fund budget reduction of \$184,000 annually and the reduction of three positions.

**Project Status:** Implemented

### **Port of Entry Payment Processing Change**

WYDOT eliminated mainframe processing of the Port of Entry receipts interface files, transferring them directly from WYDOT Oracle to the ERP Oracle database by file transfer.

**Benefit:** This eliminated several steps in daily processing of payments, saving time and money.



**Project Status:** Implemented

### **Public Traffic Information**

WYDOT now monitors and broadcasts traffic developments in real time, 24/7. Using technological advances, the Department has reduced the number of temporary personnel that were previously needed for coverage.

**Benefit:** Services have increased, and the public interest and usage continues to increase. Online features and text messaging have saved considerable costs and received widespread public approval.

**Project Status:** Implemented

### **Reporting Tool for Information Management**

WYDOT worked to implement a new reporting tool for the WYDOT enterprise. This end-user reporting tool will allow the enterprise to have a central location for reporting needs. It also adds the ability to embed the reports in other software and applications.

**Benefit:** The new system reduces annual maintenance costs. Anticipated cost reductions from reporting are approximately 50%.

**Project Status:** Expected to be deployed by December 2017.

### **Specialty Plate Renewals System**

WYDOT developed and implemented a new functionality allowing constituents to renew their specialty license plates online.

**Benefit:** This system reduced the amount of time needed to process specialty license plate renewals from one week to two hours.

**Project Status:** Implemented

### **Vehicle Inspection Reporting System**

A web-based vehicle inspection report system will allow users of the WYDOT fleet to conduct pre-trip and post-trip equipment inspections and to automatically escalate them to a repair request, if needed.

**Benefit:** In the past, WYDOT has relied on a manual inspection of equipment, before and after each use of the equipment. A separate repair request form was then used to create a work order for items found to be defective. This process was entirely manual and could take significant time to complete. The new Vehicle Inspection Reporting process allows a user to electronically track pre- and post-trip inspections. If a defect is identified, the system will automatically escalate tickets to mechanics and notify them via email. The system allows multiple mechanics to work on individual problems and it keeps an electronic record of the trouble tickets so patterns of problems can be searched and identified

**Project Status:** In final testing stage.



### **Wake-on-Local Area Networks (LAN)**

WYDOT implemented “Wake-on-Lan” effort to increase efficiency by allowing IT to turn on and update computers after normal business hours.

**Benefit:** Performing updates after normal business hours increases user productivity because updates do not impact computer performance while end users are using their computers during peak working hours.

**Project Status:** Implemented

### **Web Based Meetings**

WYDOT frequently utilizes web based applications such as the Transportation Learning Network, teleconference calls and Google Hangout. WebEx (an online teleconferencing company) is being used to view and share documents.

**Benefit:** Travel time and related costs are drastically reduced, and in some case are eliminated. Staff can attend from their desks and readily share and view documents being discussed.

**Project Status:** Implemented

### **Web Service Data Share**

WYDOT worked to instantly send travel data from the WHP dispatch center to the Transportation Management Center (TMC) dispatch center.

**Benefit:** This system allows specific data affecting travel to be sent to the TMC dispatch center where it can be communicated to the public.

**Project Status:** Implemented

### **WYDOT Authorized Travel**

WYDOT Authorized Travel is a web-based tool that allows travelers to apply for permission to travel on otherwise closed roadways under certain circumstances. This might happen if a road is closed due to a crash yet the road is safe to travel past a closure gate and approaching the crash location.

**Benefit:** The WYDOT Authorized Travel program improves mobility of citizens because it allows people who need to tend to livestock, attend medical appointments, or travel to or from work to pass a closure point if the road is safe to do so. The Department benefits because the work necessary to deliver travel authorizations is automated and the sign-up process takes place during periods when WHP personnel have time to devote to the task. Previously, WHP Dispatchers attempted to provide authorizations in a manual fashion that took hours to administer for each closure.

**Project Status:** Implemented

### **WYDOT Website Upgrades**

The largest and most utilized website in the state, WYDOT is working to upgrade and update the infrastructure and front-facing components of its website.



**Benefit:** This freshening of the WYDOT website allows constituents to more easily and quickly find information they need. This will also reduce the hours and cost associated with maintaining the website.

**Project Status:** Expected to be deployed by August 2017

#### **Wyoming Aviation Geographic Information System (GIS)**

The Aeronautics Division's GIS information management system is being developed and will be built on base maps of each airport. In addition to the base maps, specific information is geo-referenced to provide efficient access to large amounts of information. This information is especially needed for Aeronautics Division staff to identify and evaluate airport project needs and to develop recommendations for the Aeronautics Commission.

**Benefit:** GIS provides a method of centrally locating and making information available to internal and external users, which saves time and allows for more efficient communication.

**Project Status:** Ongoing

#### **Wyoming Highway Patrol-USB Backups**

WYDOT worked with the WHP to implement a USB backup approach for the in-car systems.

**Benefit:** In the event of hardware failure, IT is now able to recover a WHP trooper's files to put on another tablet and get the trooper back on the road quicker.

**Project Status:** Implemented

#### **Wyoming Travel Information Map**

WYDOT updated its traveler information map. This map is available on WYDOT's website and provides information to the public about road conditions, traffic incidents, and other travel information.

**Benefit:** The new travel information map uses technology that is already in use at WYDOT for other purposes and removes the dependency on a second vendor's license. As a result, there is about a \$50,000 cost savings each year. The new development platform uses a rapid development template which allows for more enhancements to be made, including the addition of National Weather Service watches and warnings and weather radar. The map development also included a design for those who are color-blind.

**Project Status:** Implemented

## **Wyoming Highway Patrol**

#### **Citizen Services and Safety Information**

Deploy highway safety initiatives such as variable speed limits (VSL), dynamic message signs (DMS), WYDOT authorized travel (WAT), and hundreds of electronic notifications to authorize restricted travel during specific road closures, weigh-in-motion (WIM) sensors for specific roadways over mountain passes, and specific road closure plans.





Complete changes to the WYDOT Rules and Regulations, Motor Carrier Section, Chapter 5, Size and Weight Limitations of Vehicles. The “Gold Book” (truck size, weight, and permit book), which is currently being updated, provides useful guidance to the trucking industry.

**Benefit:** The projects will improve highway safety.

**Project Status:** Implemented and Ongoing

### **Efficient Interdiction and Compliance**

To reach Federal Motor Carrier Safety Alliance compliance by the end of 2019: foster relationships with industry, local, state and federal partners; deploy a High Intensity Drug Trafficking Program; and participate in the Rocky Mountain High Intensity Drug Trafficking Areas group.

**Benefit:** Fostering relationships at all levels will benefit public safety and criminal interdiction efforts. The WHP ultimately strives for virtual weigh stations and electronic permitting and routing.

**Project Status:** Implemented and Ongoing

### **Internal Efficiency Initiatives**

The WHP strategic plan works through a three-year planning cycle and provides a defined set of operational goals. More significantly, it allows each WHP district and division to customize their own approach to address specific issues through the BSC process. They review and adjust their BSC every three years. Information received from customers is also considered and included in the strategic plan and the BSCs. Some of the significant goals are to reduce highway fatalities, reduce alcohol and drug related injury crashes, enhance customer service, maximize educational and support efforts, and to develop and care for our employees.

The WHP implemented new schedules to address critical issues in the Highway Patrol Dispatch Center, Ports of Entry and with Troopers, concerning overtime, burnout, morale, and other matters within the workplace.

The WHP focuses on quality customer service by: soliciting public input after the public is contacted by a state trooper, communications officer or a port-of-entry employee; provide comment cards; and add an online customer satisfaction portal are made available to provide suggestions and/or positive or negative comments.

The WHP will continue to standardize its vehicle fleet to reduce agency costs.

**Benefit:** The WHP’s strategic plan has resulted in an identified focus on public safety initiatives, employee satisfaction and good stewardship of resources with positive results. By continually reviewing internal initiatives and processes, the WHP constantly strives to be more efficient.

**Project Status:** Implemented



### **Modernize Record Management System (RMS), Computer Aided Dispatch (CAD) System and E-Citation System**

The WHP is modernizing the current in-car computers (mobile data terminals) to access a records management system (RMS), issue E-citations, and to complete applicable forms.

**Benefit:** The project will increase communication, effectiveness, and efficiency within the WHP and with the courts, statewide.

**Project Status:** Estimated completion date is fall 2019.

### **Uniformity and Consistency - Ports of Entry**

The WHP developed a uniform training program, updated policies and procedures, and reorganized the leadership structure to maintain consistency within ports-of-entry statewide.

**Benefit:** To ensure uniformity in commercial vehicle compliance, education, and enforcement.

**Project Status:** Implemented

### **Using Data Envelopment Analysis and Data Driven Approaches to Crime and Traffic Safety**

Data driven analysis is designed to identify best practices. The Wyoming Highway Patrol (WHP) is currently building a business case and technology review to modernize WHP records and computer aided dispatch (CAD) systems, including e-citations, with analytical analysis tools.

**Benefit:** Available resources and existing personnel will positively address public safety problem areas.