

WYOMING
Department of Transportation

Statewide
LONG-RANGE
TRANSPORTATION
PLAN

August 2005



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Statewide LONG-RANGE TRANSPORTATION PLAN

PREFACE

The history of transportation development in Wyoming has its simple beginnings etched in the trails of the early fur trappers and carved in the wheel ruts of the wagon trains of the mid-19th century.

In the 1840s, thousands of settlers traversed Wyoming Territory on their journey to Oregon. Their route paralleled the North Platte River and utilized South Pass to cross the Continental Divide. Later, the same route was used by the stream of settlers headed West to make their fortune during the height of the California gold rush, by the Mormon handcart migration in the 1850s and again by the Pony Express. Together with stage coach routes, such as the Cheyenne-Deadwood Stage Road, the Overland Stage Route and the Black Hills Wagon Road, these historical trails represent the beginnings of an organized transportation network within the territory.

The Wyoming State Highway Department was created by an act of the Wyoming Legislature in 1917. In 1991, the State Highway Department became the Wyoming Department of Transportation (WYDOT). Since that time, the focus of the Department has broadened to include all modes of transportation.

The Wyoming Transportation Department recognizes the importance of long-range transportation planning as a tool or process to be utilized in the development of a responsive multi-modal transportation system to provide for the safe and efficient movement of people and goods. From its inception, WYDOT's primary goal has been to plan, develop, construct, operate and maintain a highway network connecting Wyoming communities. The highway network is now provided on the basis of travel demand, safety, energy conservation, and protection and preservation of the environment. A properly managed state highway network can be instrumental in facilitating the growth and development of Wyoming's communities and support commercial, industrial and recreational growth. Proper management of the state highway network is accomplished through principles of sound highway planning, programming and involvement of the public.

WYDOT's MISSION

To provide a safe, high quality, and efficient transportation system.

WYDOT has expanded its public information and outreach efforts. TransPlan, the Department's public involvement process, was developed to gather input from the public. Statewide planning and public involvement have been emphasized in the past two federal highway funding bills. WYDOT has continued to refine and enhance the TransPlan process to improve public participation in its planning and programing activities.

This update of WYDOT's Statewide Long-Range Plan was developed through a comprehensive public involvement process that included numerous meetings with transportation stakeholder groups and consultation with local officials. This policy plan is intended to guide WYDOT's activities over at least the next five years.

The Department is in a period of some uncertainty as Congress prepares the next federal funding authorization bill. It is understood that adjustments may have to be made in priorities and programs in response to provisions in the new federal law.

It is hoped that this publication also will be an aid to the citizens of Wyoming and enhance their comprehension of transportation construction, maintenance and planning activities needed to provide a safe and efficient transportation system. WYDOT welcomes and solicits comments as we move forward in the 21st century.

In order to achieve the goals of this mission, the Wyoming Department of Transportation has created a detailed planning process that includes the continual updating of this document, the Statewide Long-Range Transportation Plan.

Transportation Planning, as is true of planning for any public expenditure, must be related to the goals of the geographical or political area concerned. It must be based on the existing and anticipated economic structure of the area and it must be realistic in light of the resources available to meet the desired goals. Effective statewide planning must recognize other governmental entities

and their respective responsibilities. WYDOT works with local officials to provide effective communication and coordination through its planning efforts.

GOALS

This Long-Range plan will outline the priorities and actions necessary to accomplish WYDOT's primary goals:

- ***Pursue adequate funding to accomplish the Department's mission.***
- ***Enhance safety on the transportation system.***
- ***Preserve the quality of the existing transportation system.***
- ***Provide for the efficient transportation of people and goods in Wyoming.***
- ***Provide transportation mode choices to the people of Wyoming.***
- ***Fairly and equitably fulfill our regulatory and revenue generating responsibilities.***

PURPOSE

The primary purpose of the Statewide Long-Range Transportation Plan is to provide direction to WYDOT in the pursuit of its mission over a 20-year horizon. In an ever changing world, the Department must anticipate and respond to the transportation needs of those traveling in Wyoming. The Department's 2005 Statewide Long-Range Plan update process included several phases of work. The Systems Planning Unit reviewed a number of other states' plans to aid in the process of identifying current practices, challenges, trends and national/regional issues. In order to be useful, the plan necessarily involved communication with the public and stakeholders to identify key transportation issues affecting WYDOT's customers. Finally, those issues and concerns were evaluated to determine how WYDOT should respond in order to effectively fulfill its mission and achieve its goals.

PUBLIC INVOLVEMENT

The public involvement process for the update began with a number of stakeholder group meetings across the state. Stakeholder groups included the Wyoming Trucking Association, the Aeronautics Commission, the

Board of Agriculture, bicyclists, the Wyoming Lodging Association, Wyoming SafeKids, the Wyoming Association of County Engineers and Road Superintendents (WACERS) and other interested groups. Also, in 2002 and 2004, the Department contracted with the University of Wyoming to conduct customer satisfaction surveys. The public involvement process will be completed when the Long-Range Plan is presented to the public through WYDOT's TransPlan process.

Input from the public and the stakeholders has been used to produce a broad-based Statewide Long-Range Plan to guide transportation planning and programming in the direction desired by WYDOT's customers. The plan recognizes trends in factors affecting the transportation system, such as shifting demographics, land use, commuting patterns, freight volumes, and changes in technology. Fortunately, congestion and air quality are not critical issues for WYDOT at this time. WYDOT is concerned about safety, corridor preservation, funding issues, environmental stewardship and streamlining of the environmental review process.

Providing an efficient multi-modal transportation system to facilitate economic growth and development continues to be a priority for many stakeholders.

The plan attempts to provide direction for a balanced transportation system. In addition to the road and highway network, other modes provide for the movement of people and goods in Wyoming. Aviation, rail and pipelines are critical components of the transportation system. The planning process has evaluated the contributions of these and additional modes of transportation, such as transit, bicycling and walking.

The recommendations in the plan reflect the policy direction that WYDOT should pursue over the next 20 years. In many areas, the plan recommends that current activities be continued. However, in some areas, new directions are called for to prepare for emerging challenges. An update of the Long-Range Plan will be completed on approximately a five-year cycle. Important issues identified in the plan may be revisited more frequently with update summaries provided by the Planning Program.

Statewide LONG-RANGE TRANSPORTATION PLAN

EXECUTIVE SUMMARY

The Statewide Long-Range Transportation Plan provides policy guidance to the Department in fulfilling its mission and the allocation of resources. The Long-Range Plan is the product of a comprehensive public involvement process. For the next 20 years, WYDOT will focus on: improving the safety of the transportation system, maintaining the quality of the existing transportation system, and bringing the State Highway System up to current design standards. Another key focus area will be to improve the modal choices available to the people of Wyoming. A summary of key elements and issues from the 2005 Long-Range Plan is provided below.

WYDOT's MISSION

To provide a safe, high quality, and efficient transportation system.

Department Goals

- Pursue adequate funding to accomplish the Department's mission.
- Enhance the safety of the transportation system.
- Preserve the quality of the existing transportation system.
- Provide for the efficient transportation of people and goods in Wyoming.
- Provide transportation mode choices to the people of Wyoming.
- Fairly and equitably fulfill our regulatory and revenue generating responsibilities.

WYDOT is concerned about the rising cost of transportation construction and maintenance. In 1991 a study of Wyoming's road system was completed by DeLeuw, Cather and Company for the Wyoming

Legislature. The study found a very significant gap between roadway needs and available funding. The State Legislature has not adequately addressed the need for additional funding. Federal-aid funding has not increased enough to close the gap. As a result, WYDOT is facing a serious situation with insufficient revenues to maintain the State Highway System in its present condition. The Department must either seek additional funding or explore ways to reduce the cost of maintaining the system. Options include, transferring roads from the State System, reducing tolerable pavement quality levels, reducing design standards, reducing the target 20-year level of service expected from roadway improvement projects and reducing (or eliminating) local government assistance programs.

Department Priorities

Safety will continue to be WYDOT's highest priority. The Department will continue to seek an appropriate staffing level for the Highway Patrol to effectively enforce traffic laws, commercial vehicle regulations and respond to highway emergencies. WYDOT will pursue improvements in air service and facilities for non-motorized transportation. The Department has proposed construction of additional multi-lane highways to improve traveler safety and achieve other benefits. WYDOT will continue to pursue more stringent seat belt and open container laws to reduce fatal crashes and improve safety.

Other modes such as transit and non-motorized transportation are expected to become more important components of the transportation system over the next twenty years. WYDOT will continue to evaluate the appropriate role for public transportation in urban and rural areas. Also, Wyoming residents have an interest in maintaining intercity bus service as a transportation alternative.

Public Involvement Goals

- *Continue to refine and improve the TransPlan public information and involvement process.*
- *Specifically integrate consultation with local officials into WYDOT's planning and programming processes.*
- *Continue to improve coordination with other governmental agencies.*
- *Continue to improve compliance with the National Environmental Policy Act (NEPA) through appropriate public involvement activities.*

WYDOT is committed to involving the citizens of Wyoming in its decisions. In 2002, the new Operating Policy on Public Involvement was adopted. In 2003, WYDOT published its new Public Involvement Handbook and Resource Guide. Both of these documents provide guidance to Department employees for more effective public involvement. In addition, in 2004, WYDOT adopted a new policy on consultation with local elected officials for long-range planning and development of the Statewide Transportation Improvement Plan. The Department expects to improve both the opportunities for, and quality of public input and involvement over the next 20 years.

Funding Goals

- *Identify the critical level of funding needed to maintain the quality of the existing highway system.*
- *Pursue state funding to maintain state highways that are not eligible for Federal-aid funding.*
- *Seek a higher contribution of state funding from dedicated user taxes and fees.*
- *Work in cooperation with cities and counties to secure sufficient funding for all levels of government for construction, operations, and maintenance of transportation facilities.*

Highway travel is expected to continue to be the most important mode of transportation for Wyoming residents. Wyoming communities rely on highway transportation to receive the goods they need to prosper. The people of the State also rely on highways to access jobs and recreation areas. Enhancing safety and preservation of the existing highway system will be WYDOT's highest priorities for the next twenty years.

Highway System Goals

- *Improve safety of the State Highway System.*
- *Improve cost efficiency of highway construction and maintenance.*
- *Maintain mobility and highway capacity on arterial routes.*
- *Maintain, upgrade and improve the existing highway system.*
- *Maximize transportation system effectiveness and economic efficiency by coordinating with other levels of government in transportation planning.*
- *Improve linkages between existing multi-lane highway facilities to ensure a comprehensive and responsive state highway system.*

Freight and Highway Capacity

Accommodating increased demand for freight transportation will be a major issue for WYDOT over the next 20 years. Federal Highway Administration (FHWA) freight forecasts predict an increase of more than 100 percent in the tonnage of freight hauled on Wyoming highways from 1998 to 2020. The volume of freight on I-80 is expected to increase from 65 million tons in 1998 to 135 million tons in 2020. Based on the FHWA freight forecasts, the average daily volume of semi-trucks on I-80 would increase to about 11,400 in 2020. An increase of this magnitude will strain the capacity of this important freight route. WYDOT Planning will prepare its own freight analysis and forecasts. WYDOT will evaluate level of service and volume to capacity ratios for I-80 and other key freight routes on the State Highway System. From this analysis, specific improvement projects will be identified and prioritized.

Another high priority for the Department will be maintaining capacity on arterial highways. Over the last ten years, changing land use patterns and the proliferation of associated access points on Wyoming highways has affected both safety and capacity. In 2005, WYDOT adopted a new operating policy and rules and regulations for access management in order to arrest the decline in safety and capacity on arterial highways. A number of other key focus areas for the transportation system are listed below.

Highway System Focus Areas

- *Identify security concerns or potential bottlenecks in the transportation system.*
- *Evaluate the need for transportation system safety improvements specifically related to each mode of transportation.*
- *Identify any new routes needed to complete the State Highway System.*

Statewide Long-Range Transportation Plan

- *Work with community emergency management personnel to minimize adverse effects of road closures on major highways.*
- *Continue implementation of Intelligent Transportation Systems on major freight corridors to alert drivers of winter weather conditions and improve operations.*
- *Evaluate the need for capacity improvements on freight corridors to maintain a high level of mobility and acceptable level of service.*
- *Evaluate possible opportunities for intermodal freight facilities.*
- *Identify and evaluate the need for added capacity on sections of the State Highway System to improve safety and connectivity and to reduce congestion.*
- *Design structures to accommodate anticipated 25 to 30 year traffic volumes and to provide clearance for future widening of highways or underlying roadways.*
- *Prepare for multi-lane improvements with advanced right-of-way acquisition.*
- *Continue to improve and upgrade the older rest areas throughout the State.*
- *Coordinate improvements on highways connecting Wyoming with other states.*
- *Streamline the State Highway System by transferring routes that do not provide substantial system benefits to other jurisdictions.*
- *Institutionalize consideration of the unique needs of bicyclists and pedestrians in project planning, design, construction and maintenance.*
- *Increase the use of bicycling and walking for transportation in Wyoming.*

Rail Transportation Goals

- *Continue grade crossing improvement program to improve safety for Wyoming highway travelers.*
- *Make accurate rail information available to WYDOT customers.*
- *Require any new rail crossings of State Highways to be grade-separated.*
- *Participate in Colorado Front Range light rail planning activities that might benefit southeast Wyoming.*
- *Evaluate opportunities for intermodal transfer of containers or trailers on flat cars (TOFC) in Wyoming.*
- *Support Rails to Trails actions that will preserve railroad rights of way for transportation purposes.*

Through the process of updating the Long-Range Plan and through general planning activities, a number of important issues that are expected to impact transportation in Wyoming were identified. Goals related to some of these issues are listed below:

Aeronautics Goals

- *Improve the safety and efficiency of the aviation system.*
- *Effectively administer the Air Service Enhancement Program to develop and improve commercial air service in the state.*
- *Continue to build strong relationships between local communities, the State of Wyoming and the Federal Aviation Administration.*
- *Provide effective facility maintenance programs that properly time investments and prevent unnecessary costs.*
- *Promote educational activities for the aviation community and for the general public.*

Non-Motorized Transportation Goals

- *Improve safety for those utilizing non-motorized transportation through improved education of bicyclists and motorists and enforcement of vehicle code violations.*
- *Improve accommodation of bicyclists and pedestrians within the existing transportation system.*

Other Transportation Goals

- *Appropriately respond to State and Federal regulatory obligations.*
- *Continue the Wyoming Scenic Byway Program as a tool for local or regional tourism promotion.*
- *Continue to be involved in regional transportation issues and developments.*
- *Continue to provide transportation planning assistance to municipalities and counties.*
- *Identify and prepare for the transportation needs of Wyoming's aging population.*
- *Maintain adequate capacity on transportation facilities connecting urban areas to regional transportation networks.*
- *Use TransPlan public outreach and involvement to educate the public about important transportation issues.*
- *Use WYDOT's Web site to educate the public regarding construction projects and what WYDOT does and why.*

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Highway Patrol Goals

- *Reduce drunk driving and alcohol-related crashes.*
- *Increase the use of seatbelts on Wyoming highways.*
- *Increase commercial vehicle inspection activities by troopers to enforce size, weight, and safety regulations.*
- *Expand presence of troopers on Wyoming highways.*
- *Improve trooper retention.*

Public Transit Goals

- *Maintain transit mobility for the transportation disadvantaged.*
- *Evaluate the proper role for WYDOT in intercity transit.*
- *Serve as a source of information for transit providers.*
- *Evaluate opportunities to expand transit services.*
- *Communicate the economic development benefits of public transit.*

Local Assistance Program Goals

The Department should continue to provide an appropriate level of assistance to local governments. A number of existing WYDOT programs provide transportation funding assistance to local governments.

- *Continue the Wyoming Industrial Road Program to enable counties to respond to road-building needs, especially access to new economic development sites.*

- *Continue to fund the Commission Road Improvement Program at an appropriate level.*
- *Continue to operate and fund the WYDOT Urban Systems Program at an appropriate level.*
- *Continue to provide local facilities through the TEAL Program.*
- *Continue to provide training and mentoring opportunities to through assigned representatives of the Wind River Indian Reservation's Joint Business Council.*

CONCLUSION

Wyoming is currently the most dependent of the fifty states on Federal-aid transportation funding. WYDOT is facing an impending funding crisis for rural low-volume highways. Federal-aid funds are currently insufficient to improve and maintain the most important state highways. This leaves no funding for the less traveled secondary highways. Some of these highways are not eligible for Federal-aid funding. In order to maintain the quality of the existing highway system it will be necessary for the State to contribute additional funding to maintain the transportation system.

CHAPTER 1 Public Involvement

WYDOT believes that well-designed public involvement activities will benefit its planning and policy efforts and ultimately lead to better decisions and better projects. Effective public involvement will increase public acceptance and support of transportation improvement activities. The Department should consider all identified interests on transportation projects in order to make decisions that reflect the full range of community values. An improved decision-making process fostered by public involvement will reduce costly project plan revisions and project change orders. Finally, increased involvement with the public and local officials will enhance understanding, communication, and agency credibility.

WYDOT Operating Policy 17-8, updated in October 2002 begins with a statement of purpose: *The goal of the Wyoming Department of Transportation is to proactively involve the public in addressing transportation issues. The Department will communicate the agency's mission and goals to as wide an audience as possible and consider feedback received from outside organizations and the general public.*

WYDOT's PUBLIC INVOLVEMENT GOALS

- *Continue to refine and improve the TransPlan public information and involvement process.*
- *Specifically integrate consultation with local officials into WYDOT's planning and programming processes.*
- *Continue to improve coordination with other governmental agencies.*
- *Continue to improve compliance with the National Environmental Policy Act (NEPA) through appropriate public involvement activities.*

2005 LONG-RANGE PLAN UPDATE PROCESS

WYDOT's Planning Program completed the public involvement process for the update of the Statewide Long-Range Transportation Plan. The first step was to

meet with stakeholder groups. These groups were identified to gather input from a diverse representation of various transportation interests. The meetings were effective at gathering information from a variety of residents with different interests. These stakeholder groups identified key issues and concerns that WYDOT will need to address in the next 20 years.

Individuals from the following groups and organizations were invited to meet with WYDOT staff at specific locations in the state to discuss their concerns and interests in transportation-related issues:

- Aeronautics Commission
- Board of Agriculture
- Laramie BikeNet
- Bureau of Land Management (BLM)
- Wyoming Outdoor Council
- U.S. Department of Agriculture, Forest Service
- Casper and Cheyenne Metropolitan Planning Organizations
- National Park Service
- Wyoming State Trails Program
- Union Pacific Railroad
- SafeKids
- Wyoming Association of County Engineers and Road Superintendents (WACERS)
- Wyoming Association of Municipalities (WAM)
- Wyoming Lodging Association
- Wyoming Trucking Association
- Wyoming Public Transit Association (WYTRANS)

Throughout the stakeholder group meetings, certain transportation issues were clearly a concern to many residents. However, there was not universal agreement on many of the issues. Future WYDOT long-range transportation planning should include consideration of the following issues identified during the stakeholder group process. The issues are in no specific order and are as follows: highway maintenance, construction, safety issues, education and awareness, new multi-lane highways, non-motorized transportation, communication and coordination with partners, rest areas and road closures.

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Many groups agreed that WYDOT should receive high marks for highway maintenance. Many agreed that Wyoming highways are “the best in the nation.” However, numerous comments were made that snow plowing does not take place “fast enough” after a storm hits. According to several groups, the coordination between counties and WYDOT snow plowing is minimal. On the other hand, numerous groups did mention that snow plowing is sufficient.

Construction issues also were discussed during many of the stakeholder groups. Positive comments were received that WYDOT has high standards for construction, that roads are well built and maintained and repairs are completed well. However, there were a number of complaints mentioned concerning construction. Individuals suggested that projects should be completed during evening hours and in off-tourist seasons. Comments also were received about removing cones when construction is not taking place. One stakeholder group also mentioned the need to use less “overbuilding” when WYDOT constructs roads. This group would like WYDOT to consider what is needed with context sensitive design and what the safety concerns are, instead of just building to national standards. The group does not want a “sea of pavement” throughout the State.

Safety issues were discussed in a majority of the stakeholder groups. A number of groups were concerned about impaired drivers, seat belt use and open container laws. A few of the stakeholder groups were interested in more speed limit enforcement. Many of the stakeholders viewed the multi-lane initiative as a way to improve traveler safety on Wyoming highways. The agricultural stakeholder group was concerned about safety related to farm equipment on the roads. The group suggested a reduction in speed limits in areas with significant farm traffic. This group also commented on the need for improved intersection markings and signage along routes used by farm equipment.

Education and awareness campaigns were emphasized during several stakeholder group meetings. Concerns arose that WYDOT needs to do more to reach the public. Areas of concern were bicycle and pedestrian safety issues, child restraints, seat belt usage, DUI laws, road closures, what WYDOT has available for the public, motorist safety and improved driver education. Several of the groups thought it would be a good idea for

WYDOT to produce a brochure to inform the public of services and data available.

The multi-lane proposal was a topic discussed with all of the groups. Positive comments were received from many groups, especially in those concerned about economic development and improved connectivity for some communities in the state. Others thought multi-lane highways would be a good idea to reduce travel time. However, several individuals questioned the need and cost of the proposal. Those individuals encouraged WYDOT to undertake detailed research and planning studies to determine where to construct new multi-lane highways. Comments also were received from those opposed to the proposal. Those individuals and groups did not want to see any more unnecessary road building in the state. Also, questions from those opposed to the proposal centered around the need for such costly construction.

Improved accommodation of non-motorized transportation was mentioned in many of the stakeholder meetings. Many individuals thought that WYDOT should more seriously consider the safety needs of bicyclists and pedestrians. Many said that shoulders on the roadways are not wide enough and suggested more bike lanes and pathways. Also, a number of negative comments were received about rumble strips. People were upset with several rumble strip installations in the state. Some stakeholders requested more sweeping of shoulders. They remarked that highway shoulders are not free of debris, increasing the hazards of riding. Many suggested that WYDOT add more questions concerning interaction with bicyclists and pedestrians to the drivers license test. On the other hand, some individuals did mention that WYDOT is doing more to accommodate non-motorized transportation modes. The majority commented that WYDOT should do more to better accommodate non-motorized transportation.

Many of the stakeholder groups voiced the need for opportunities for coordination with WYDOT. Railroads, counties, WYTRANS, Safekids, the Board of Agriculture, environmental groups, the Forest Service, BLM, bicycle and pedestrian stakeholder groups, the Cheyenne and Casper MPOs and WACERS all commented that information, data and support can be shared with WYDOT. Virtually all of the stakeholder groups mentioned that there are common goals to be reached and that coordination with WYDOT can be improved.

WYDOT does during bad weather to protect motorists, however, many suggested more up-to-date messaging and more advanced warning to motorists on highway closures.

Another step in the public involvement process for the Statewide Long-Range Transportation Plan, was to conduct a statewide telephone survey. This customer satisfaction survey was conducted to provide feedback to WYDOT in a number of different areas of operations. Results of the survey will be used to improve customer service and assist WYDOT in planning for the future.

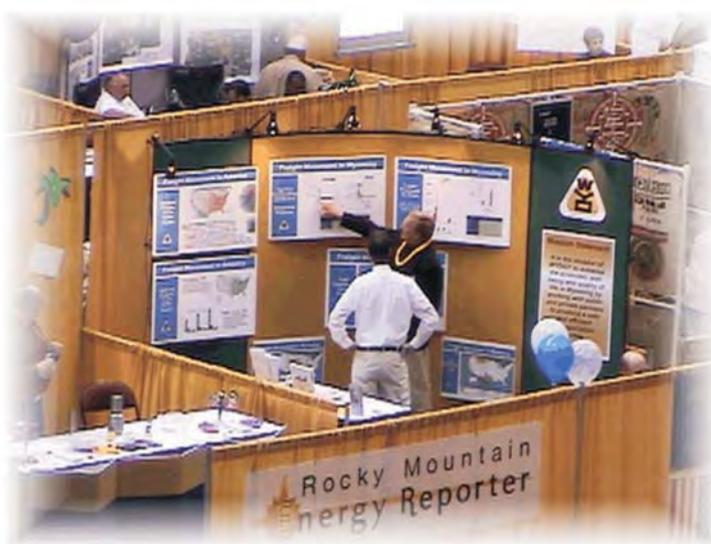
The survey results indicate that Wyoming citizens had a positive response to almost all of the satisfaction questions asked of them regarding the work of WYDOT. For example, of those who responded, 91 percent reported being satisfied with improvements in a highway after a construction project was completed and 73 percent agreed that state highways had improved during the past five years.

The survey found that services of WYDOT's Highway Patrol and Driver License programs were held in particularly high regard. More than 80 percent agreed that Patrol troopers were sufficiently courteous, while about 90 percent reported being satisfied with the staff at drivers license examination stations.

For only two questions (out of 34 asked) did approval ratings fall below the 50 percent mark. Only 37 percent of survey respondents were satisfied with the number of rest areas along state highways. Just 19 percent of respondents thought WYDOT was accurate in communicating to the public how long construction projects will take to complete.

PUBLIC PARTICIPATION

WYDOT has implemented a public involvement process that informs and involves citizens, affected public agencies, employee representatives of transportation agencies, private providers of transportation and other interested parties. The overall public involvement process includes TransPlan, consultation with local officials, the State Transportation Improvement Program (STIP) development process and project-level activities. WYDOT intends to provide the public a reasonable opportunity to comment on transportation plans and studies, the STIP and specific transportation improvement projects during their development.



The need for improved communication was raised by several groups. Some stakeholder groups encouraged better communication between WYDOT headquarters and the districts. Inconsistencies among districts cause confusion and frustration for customers. Other groups mentioned the need for improved communication between WYDOT and other agencies, such as counties and federal land management agencies. Communicating with the public also was identified as a strength by some groups. Improved communication was requested specifically in reference to road construction and closures, safety information and distribution of other relevant information.

Rest areas were discussed with the majority of the stakeholder groups. Many positive comments were received about WYDOT's existing rest areas. A few comments were made concerning the need to modernize some of the older rest areas. Also, a number of stakeholders requested construction of new rest areas in certain areas of the state where other facilities are not available.

Stakeholders were impressed with the improvements to the Wyoming Road Report system and Web site. A few groups suggested that more highway construction information could be provided on WYDOT's Web site. A few individuals requested more specific information when the description "slick to slick in spots" is used. Also, comments were received that during the summer months, the Web site could be used as a locator for construction projects along routes. Several comments from stakeholder groups concerned road closures during inclement weather. Most stakeholders appreciated what

TransPlan

TransPlan is WYDOT's public involvement process for statewide planning. Planning documents are published with reasonable notification of their availability or otherwise made readily available for public review and comment. The TransPlan public participation process includes attending meetings of local officials through the Wyoming Association of Municipalities, and the Wyoming Association of County Officials and a Wyoming county fair. Department staff use these meetings as opportunities to discuss transportation issues with elected officials, conduct surveys and provide access to planning documents. Citizen participants at these meetings are given comment cards, surveys, access to planning documents, informational brochures and flyers.

The process for TransPlan is continually improving and evolving. WYDOT strives to improve its effectiveness at meeting the transportation needs of the public through improvement of its outreach process. A diverse sample of comments are collected each year during the TransPlan process. In addition to comments received at the meetings, numerous letters are received by planning staff throughout the year. Surveys are conducted during each TransPlan meeting to increase public participation and awareness concerning the latest transportation projects, laws and programs.

New Operating Policy on Public Involvement

In recent years, WYDOT has substantially increased its commitment to public involvement. Former Director Sleeter C. Dover went on record in 2000 with his intention that the agency would review its policies and procedures on public involvement. The biggest step forward occurred during 2001 with the establishment of a WYDOT task force to evaluate the Department's public involvement processes. The group's stated purpose at the outset was to develop an action plan to improve communications between WYDOT and the public. Members of the task force were drawn from the planning, design, environmental, right-of-way and public affairs programs, as well as local government coordination. Legal and regulatory requirements for

public involvement stemming from NEPA, Intermodal Surface Transportation Enhancement Act (ISTEA) and Transportation Enhancement Act of the 21st Century (TEA-21) also were reviewed, as were past and current WYDOT public involvement efforts including TransPlan.

In 2002, a new position was approved in each operations district to undertake public involvement activities in each district. In discussing the need for new personnel, task force members favored a de-centralized approach with specialists located in the field districts. The new positions would have direct coordination with district administration and staff, while adding the value of being a local resource. The work of the task force resulted in a new operating policy on public involvement aimed at improving the Department's dealings with the public.

The consensus of task force members was that WYDOT should institute a more comprehensive, systematic and carefully documented approach to public involvement. The approach should require more formalized procedures and closer coordination of the various public involvement activities within the agency. The task force envisioned WYDOT public involvement efforts starting earlier, during long-range planning, with particular focus on identifying potentially affected audiences and stakeholder groups.

The task force recognized an increased need for better communication about what the Department does and what it provides. Many agency customers now rank the provision of transportation-related information as a key WYDOT function, on par with the physical condition of roadways. It is important to convey to customers that WYDOT employees not only have the skills to do the job right, but are also actively listening and giving consideration to varying and sometimes competing viewpoints. The task force understood that being more open to external opinion did not mean the Department would relinquish any of its ultimate decision-making authority.

National Environmental Policy Act

The WYDOT Environmental Services Program is the division that is responsible for undertaking, complying, and documenting activities related to NEPA. Specific public involvement activities relating to

highway projects using federal money are described in 23 CFR 771. These federal regulations provide for early and continual opportunities for the public to participate in identifying social, economic and environmental impacts associated with transportation improvement projects.

Coordination with Other Government Entities

- *Improve Communication and Coordination with Local Transportation Planners and Elected Officials .*

Local Consultation

Consultation with local officials is facilitated in a number of ways, through the annual TransPlan process, Metropolitan Planning Organizations (MPOs) and WYDOT's urban transportation planning committees. The TransPlan process for Metropolitan Planning Organization is used for urban areas with a population of 50,000 or more. The TransPlan process for urban systems advisory committees (USAC) is used for urban areas with a population of 5,000, but less than 50,000. Transportation planning and programming information is made available to local officials through these means, as well as seeking to involve elected officials that attend the Wyoming Association of Municipalities and the Wyoming Association of County Officials Meetings.

Another important method of consultation with local officials will be regional meetings held in each district prior to adoption of the STIP by the Commission. WYDOT Planning and Programming documents are available in libraries and other public offices across the state. These documents and their updates are made available in a timely manner after publication. The STIP includes six years of scheduled improvement projects. Updated issues of the program are available every October. Updates to the Long-Range Plan are added to or replace the existing documents as they are made available.

Another means of providing information that will be used more in the future is WYDOT's Web site. Currently, information on public meetings is available on the Web site. WYDOT press releases, publications and manuals are available for planners, elected officials

and the public. In the future, Web site use will increase as public information and the input on projects, planning, and programming will be posted.

WYDOT is in the process of developing a separate and discrete consultation process for local officials to comply with new federal regulations. Information on WYDOT's process for consultation with local officials is available in WYDOT's 2004 Local Consultation Plan.

- *Continue Positive Working Relationship with the Federal Highway Administration.*

WYDOT and the Wyoming Division of the FHWA have developed a positive working relationship over the years. Federal review and approval are necessary for projects utilizing federal funds. WYDOT will seek to improve communication and coordination with FHWA on all federal-aid funded planning and construction projects.

- *Continue Coordination and Cooperation activities with representatives of the Wind River Indian Reservation's Joint Business Council (JBC).*

WYDOT has committed to improving communication and coordination with the tribes of the Wind River Indian Reservation. The appointment of a



Department tribal liaison has improved communication. Coordination and cooperation activities should continue with regular meetings among agencies, involving county and federal agencies as appropriate. The JBC should be included in the consultation process for the State Transportation Improvement Plan.

The Wind River Indian Reservation (WRIR) is the third largest Indian reservation in the United States. The Reservation is governed by a Joint Tribal Council. Approximately 60 percent (6,544) of the state's Native Americans reside on WRIR.

A primary area of concern and coordination on WRIR involves management of the Indian Reservation Road (IRR) system. Any public road within or near the perimeter of the reservation that serves the residents of the reservation is considered part of the IRR system. This definition also is inclusive for bridge structures. IRRs are owned and maintained by WYDOT, Fremont County, Hot Springs County, the Bureau of Indian Affairs (BIA), or the Reservation. This ownership is somewhat evenly distributed between agencies.

Planning and zoning on the WRIR are primarily controlled by the tribal authorities contained within the reservation and by the BIA. WYDOT has improved its coordination and consultation with the Shoshone and Arapaho tribes on the WRIR by appointing a tribal liaison and meeting regularly with tribal representatives.

The planning outreach activities serve as a mechanism to introduce and stimulate interest in the various planning-related transportation issues. WYDOT will continue to explicitly consider the concerns of the tribal government on the WRIR. In addition, WYDOT will provide the opportunity for the tribal government to participate in its planning and programming processes. This will include evaluation of alternative modes of transportation; presentation of the STIP to tribal officials; and coordination of state transportation planning with relevant transportation activities carried out by the tribal government. WYDOT will continue to include consideration of transportation needs on the WRIR in preparing applications for discretionary funding under the Federal Lands Highways Program.

- *Continue to improve coordination with Federal Land Management agencies.*

The Department has taken proactive steps to improve coordination with the US Forest Service through the funding of two liaison positions. WYDOT also hosted meetings with staff from the Forest Service to improve communication and understanding of the different missions and cultures of the two agencies. WYDOT will be involved in updating management plans for the federal lands in Wyoming.

CHAPTER 2 Transportation & Socio-Economics

DEMOGRAPHICS

Wyoming has the smallest population and one of the lowest population densities with only 5 persons per square mile. Thirty percent (30) of the state's population lives in two defined metropolitan areas, as compared to eighty percent for the entire United States. Thirty-five percent (35) of the population lives outside of designated urban areas, compared to only 21 percent for the entire US. As a result, the population of Wyoming is widely separated. The balance of the state's population, residing in smaller cities or rural areas, represents 35 percent of the population and are typically isolated by long distances and separated by geographic barriers that often impede travel.

The lack of transportation alternatives, such as scheduled air service in much of the state, is another primary reason for the population's dependence on highway transportation. Most areas of the state also lack intercity bus service. The state's reliance on the automobile is further demonstrated by its high number of automobiles per household and number of miles driven.

Even within urban areas of Wyoming, people rely on the automobile. Most public transportation programs are designed to serve elderly or handicapped citizens and there are few fixed route public transportation systems operating in the state. For Wyoming citizens, the highway network is essential to access jobs, health care, education and necessary goods and services.

The age distribution of the Wyoming population has an important impact on transportation demand. People aged 25 to 44 tend to use the transportation system the most. The population in this age group decreased 7.1 percent from 1990 to 2000. However, the elderly population (age 60 and above) places a greater demand on public transportation services than other age groups. This age group increased by about 20 percent. Over the same period, the elderly population over age 85 increased by 48 percent. This trend is consistent with the

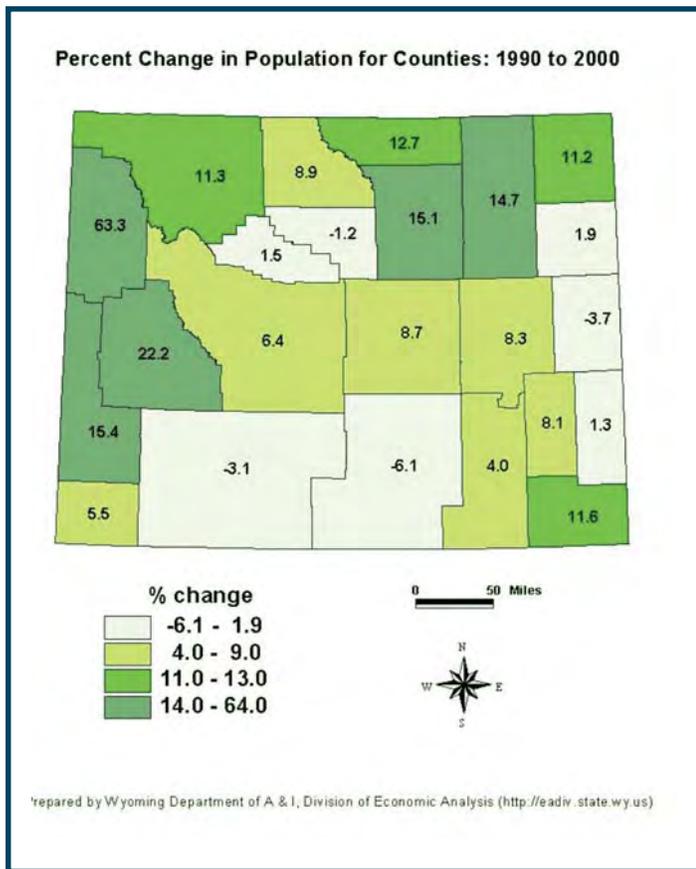
rest of the nation and is expected to continue. This shift in the population structure will strain the capacity of existing public transportation systems.

The poverty rate in Wyoming peaked concurrently with the mining industry employment recession of 1986. Since then, the rate has been relatively stable between 10 and 11 percent, or 2 percentage points below the national rate. This implies a significant but stable portion of the population that may have a greater need for public transportation. Although Wyoming's homeless population is considerably smaller than many other states, this segment of the population has a higher need for public transportation services.

County Demographics

From 1990 to 2000, only four Wyoming counties experienced a decline in population (Washakie, Sweetwater, Niobrara, and Carbon). In addition, population increased less than 2 percent in Weston, Hot Springs, and Goshen counties. These counties are experiencing the national trend of rural economies with aging population and declining birth rates. The trend is expected to continue unless something significant changes in these counties.

Over the same time period, nine counties experienced more than a 10 percent increase in population (Teton, Sublette, Lincoln, Johnson, Campbell, Sheridan, Laramie, Park and Crook). Many of the growing counties are becoming popular as retirement destinations. These areas include Jackson, Cody, Sheridan and Buffalo. Rapid growth is not expected to continue in Teton County due to a shortage of developable land. Lincoln and Sublette counties will likely continue to experience substantial spillover growth from Teton County. The bedroom communities in these counties provide more affordable housing for those working in the retail and service sectors in Jackson.



Population growth in Campbell County can be attributed to the recent coal-bed methane boom. Mineral development also can explain some of the growth in Sublette and Sheridan counties. Laramie County’s growth during the 1990s can be explained partially by its connection to the Colorado Front Range economy. Residential construction continues to grow at a rapid pace in Laramie County.

From 1990 to 2000, the demographic group with the highest migration out of Wyoming was the 16 to 25 age group. Since 1990, the 45 to 64 age group has grown rapidly in Wyoming. The state has followed the national trend of increasing average age. The post World War II baby boomers are a key component of this national trend. The Wyoming Division of Economic Analysis expects rapid growth in the 45 to 64 and the 65 and over age groups to continue.

As more retirees move to Wyoming in coming years, access to health care will be a critical issue. An aging population will need transportation access to specialized medical care that is not available in many smaller communities. Also, the demand for pedestrian facilities and transit services will increase as the retired population increases in many Wyoming communities.

Commuting Patterns

The Planning Program evaluated census data from 1990 and 2000 on commuting patterns to identify counties with significant numbers of inter-county or inter-state commuters. Laramie County had the highest number of workers commuting to another state in both 1990 and 2000 (711 and 1932, respectively). The number of inter-state commuters in Laramie County increased 1,221 or 171.7 percent from 1990 to 2000. Detailed journey to work data from the 1990 Census indicate that most of the inter-state commuters from Laramie County travel to work in Larimer and Weld counties in Colorado. The largest number of intra-state commuters from Laramie County travel to work in Albany County. Analysis of this data indicates that U.S. 85, I-25 and I-80 are important commuting routes for residents of Laramie County. The large increase in the number of inter-state commuters in the 2000 Census indicates that the link between Laramie County (particularly Cheyenne) and the Colorado Front Range is growing stronger.

Ten Wyoming counties had more than 250 inter-state commuters in the 2000 Census. [Table 1](#) provides a summary of information on inter-state commuters in these counties. Each of the border counties are relatively close to employment opportunities in another state. The exception is Natrona County with no clear tie to any particular out-of-state economy. The highways most impacted by inter-state commuters from each of these Wyoming counties is indicated in the Table.

Intra-state commuting patterns also have changed significantly from 1990 to 2000. Three counties experienced more than a 100 percent increase in intra-state commuters over the ten year period: Lincoln (203.6 percent), Crook (151.1 percent) and Platte (115.4 percent). The largest number of Lincoln County intra-state commuters travel to work in Teton County. The extremely high cost of housing in Teton County, Wyoming, has forced many people employed in Jackson, Wyoming, to move their households to nearby Lincoln and Sublette counties in Wyoming and Teton County, Idaho. As a result, WYO 22 and US 89 have become an important commuter links. [Table 2](#) provides a summary of commuting information for the Wyoming counties with more than 500 intra-state commuters.

Analysis of this commuting information indicates that trips to work are having an increasing impact on the State Highway System (SHS). Wyoming drivers

Table 1 - Inter-state Commuting Summary

| County | Interstate Commuters | Percentage of Employed | Logical Destination | Impacted Highways |
|------------|----------------------|------------------------|---------------------|---------------------------|
| Albany | 387 | 2.30% | Fort Collins, CO | US 287, I-80, I-25 |
| Goshen | 779 | 13.90% | Scottsbluff, NE | US 26, WYO 92 |
| Laramie | 1932 | 4.90% | Colorado, Nebraska | I-25, US 85 |
| Lincoln | 264 | 4.10% | Idaho, Utah | US 89, 30, 26, 189 WYO 89 |
| Natrona | 522 | 1.60% | Various | n/a |
| Park | 291 | 2.40% | Montana | US 310, WYO 120, 294 |
| Sheridan | 640 | 4.90% | Montana | I-90, WYO 345 |
| Sweetwater | 333 | 1.80% | Utah, Colorado | I-80, US 191 |
| Teton | 328 | 2.90% | Idaho | WYO 22, US 26 |
| Uinta | 453 | 4.90% | Utah | I-80 |

Source: 2000 Census

Table 2 - Intra-state Commuting Summary

| County | 2000 Intra-state Commuters | Percentage Change 1900-2000 | Logical Destination | Impacted Highways |
|----------|----------------------------|-----------------------------|---------------------------|------------------------|
| Albany | 690 | 49.9% | Cheyenne | I-80 |
| Big Horn | 544 | 55.0% | Cody, Powell, Worland | US 20, 16, 14, 14A |
| Converse | 1,295 | 82.6% | Casper, Campbell County | I-25, US 20/26, WYO 59 |
| Crook | 568 | 151.1% | Campbell County | I-90, WYO 59 |
| Fremont | 532 | 25.2% | Sweetwater, etc. | WYO 28, US 191 |
| Lincoln | 1,087 | 203.6% | Jackson | US 89, 26, 191 |
| Natrona | 1,076 | 3.8% | Converse, Carbon Counties | I-25, WYO 220 |
| Park | 509 | 47.2% | Big Horn County | US 20, 16, 14, 14A |
| Uinta | 1,081 | -3.1% | Sweetwater County | I-80 |

Source: 2000 Census

typically favor the single-occupant vehicle for most trips in order to minimize coordination and maximize convenience. The number of commuters between Lincoln County and Teton County has a substantial impact on peak hour traffic and level of service. The same can be said for the number of trips to work between Laramie County and Colorado. Planning will continue to identify the impact of commuter traffic on the SHS.

Land Use

Changing land use is affecting the level of service on Wyoming highways. Dispersed residential development

(sprawl) is taking place at an accelerated pace around many Wyoming communities in rural unincorporated areas. Ranchette developments on 5 to 35 acre lots are attractive to many residents and those migrating into Wyoming from larger urban areas. One of the problems associated with this type of development is its impact on the transportation system. These rural developments are dependent on the automobile and require more and longer trips. The increased traffic associated with dispersed residential development compared to low-intensity agriculture causes maintenance expenses to increase. Also, when these developments are not

Wyoming Department of Transportation

properly planned the number access points required will adversely affect capacity of the impacted highways.

The population and traffic associated with these rural residential developments impacts the transportation systems of nearby cities and towns as well. Even though the people living in these developments are usually located outside the urbanized areas, they place a significant demand on public services provided by the municipalities. As populations become more widely dispersed, the impact on the transportation system increases. WYDOT must be willing to provide planning assistance to local governments to help them manage these impacts and minimize impacts to the State Highway System.

Economic Base

The geographic and natural resource endowments of Wyoming have largely determined the character of the state's economy. The importance of the mining sector in Wyoming's economy can hardly be overstated. Coal, trona, coal-bed methane, crude oil, and natural gas are the most significant components of the state's mining sector. The competitiveness of the Wyoming mining sector depends on a number of factors, such as the transportation system, environmental regulation, and state mineral taxes.

Wyoming is the nation's leading producer of coal. In 2003, more than 300 millions tons of coal was shipped primarily through private rail systems to customers throughout the U.S. A very limited quantity was transported over the highway system. Trona is shipped over private rail lines as well as through an intermodal system, which includes highways. Natural gas and crude

oil are shipped through pipelines, although drilling and extraction equipment can significantly impact the highway system. Some refined products are shipped over the State's highway system.

The short growing season and semi-arid climate of most of the state have limited the agricultural sector of the

economy. Irrigation in many mountain valleys has improved hay and crop production, but the most identifiable element of the state's agriculture sector remains livestock grazing. The agricultural sector relies heavily on the highway system to ship and receive products. Hay, grain, sugar beets, lumber, and livestock all use highways as part of their intermodal freight shipping system. A high quality highway system is crucial to the competitiveness of the state's agricultural sector.

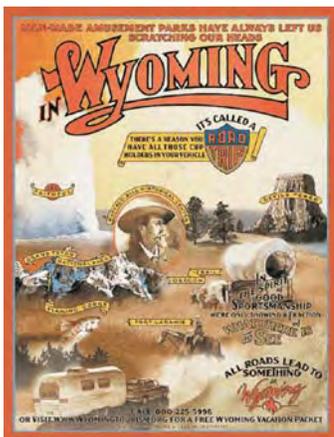
Another important economic sector in Wyoming is tourism. The full impact of this industry is difficult to ascertain due to the uncertainty of which expenditures should be included for a comprehensive and accurate assessment. Tourism is the movement of people into an area for a brief period of time and their expenditures on goods and services in that area. Tourists spend money on meals, hotels, admissions, retail products, medical services, hunting and fishing licenses, and other services. The broad range of expenditures and the fact that tourist spending is only a portion of total spending in these categories challenge those estimating the economic impact of tourism.

The primary travel mode for tourists visiting Wyoming is the highway network. A quality system of highways is essential to maintenance and growth of the state tourism and recreation industry. The safety of the highway transportation system has a significant impact on tourism growth as well. In the Jackson area current levels of tourist traffic are straining the capacity of the highway system. The quality and capacity of the highway system will determine to a large extent the potential for tourism growth.

SOCIO-ECONOMIC FORECASTS

Population

Over the years, the population of Wyoming has experienced periods of rapid growth, stability, and decline. In the 1960s, the state's population was quite stable. The decade of the 1970s, however, was a different story. From the 1970 census to the 1980 census, the Wyoming population grew from 332,416 to 469,557 (41 percent). The tremendous growth in population can be explained, in retrospect, as a result of the OPEC oil price increases of the 1970s. In the following decade, the state's population actually decreased by 3.4 percent as a



result of the fall of OPEC and the corresponding decline in the domestic oil industry.

The remarkable population increases of the 1970s put great pressure on the public and private infrastructure of the state. In some areas, the capacity of the State Highway System was strained. Public schools became overcrowded and could not meet the needs of the increased population. Existing housing stocks were insufficient to meet the needs of the new migrant population. The response of governments to the population surge was to invest in additional infrastructure.

It would have been very difficult (if not impossible) in 1970 to forecast what would eventually occur in the decade to follow. In the same way, the decline in population of the 1980s was unforeseen. The Wyoming Division of Economic Analysis states that Wyoming grew faster during the 1990s than their forecasts estimated.

Forecasting the Wyoming population for the next 10 to 20 years is a difficult endeavor. The population and economic forecasts provided by the Wyoming Division of Economic Analysis (DEA) are based on very cautious assumptions, forecasting a population increase of only about 7.5 percent from 2000 to 2020. Based on this growth rate the State's population is expected to reach only 533,534 by 2020. This population level is only 4.5 percent higher than the estimated 1983 population of 510,361. WYDOT considers these forecasts to be very conservative. A growth rate of 1 percent per year from 2000 to 2020 would result in a population of 603,500. The actual 2020 population will very likely fall between these two figures.

While population growth of this magnitude may not seem significant, substantial intercounty shifts in the state's population are expected to occur. Most of these shifts will be the result of changes in employment opportunities or in-migration of retirees. Small towns with agriculture-based economies will continue to struggle following a trend of the national economy.

The primary focus of demographics in long-range transportation planning relates to how population changes will affect the transportation system in the next 20 years. Certain segments of the population tend to impact the transportation system more than other groups. The population aged 25 to 44 tend to drive and

use air transportation more than other groups. Alternatively, those over age 59 tend to utilize the state's public transportation system more than other groups.

The Wyoming population aged 25 to 44 increased from 78,422 in 1970, to 148,497 in 1990, then declined to 138,619 in 2000 for a total increase of 77 percent over 30 years. Over the same time, vehicle miles traveled in the state increased by nearly 40 percent. Since 1970, the elderly population increased from 43,730 to 57,693, an increase of 32 percent. WYDOT has responded to this increase by providing public transportation services in every county. Due to its relatively large proportion of the baby-boomer generation (born between 1946 and 1962), Wyoming's population is aging rapidly. In 2000, the median age of 36.2 in the state passed the national average of 35.3. It will be particularly intensified in about ten years as a large number of residents reach retirement age. This situation is expected to increase demand for health care, social services and public transportation.

The DEA county population forecasts for 2020 indicate some measurable shifts in the state's population. The largest percentage increases in county population are expected in Teton (31.6 percent), Sublette (27.2 percent), Campbell (24.4 percent) and Johnson (23.1 percent). The largest projected number increases in population are Campbell (10,897), Teton (8,420), Laramie (7,661) and Natrona (5,618). The forecasted population increases in the counties identified above will impact existing transportation facilities. This could be especially true in Teton and Campbell counties where two of the most congested State Highways are located (US 89 through Jackson and WYO 59 through Gillette). The type of additional transportation facilities needed in communities in these areas will be driven by the type of residential development that is allowed to occur as population increases take place. Niobrara, Sweetwater, Carbon, Hot Springs, and Washakie counties are expected to experience losses in population ranging from 27.2 to 10.5 percent.

Another trend to anticipate is the current population influx of people from large metropolitan areas throughout the country moving their families to Wyoming. Many of these people are tele-commuting or commuting weekly to their jobs in those metropolitan areas by air. Continuation of this

migration will depend on the quality of airports and highways and overall quality of life in Wyoming. Another trend not explicitly included in the forecast involves retirees moving into many areas of Wyoming to escape the large metropolitan areas. The migration of retirees into the state is likely to increase demand for local public transportation services and health care services and facilities. The trend of younger workers migrating out of Wyoming in search of better job markets is expected to continue.

Increases in population also place pressure on the government sector to maintain adequate levels of public services. The economy of the state has changed dramatically over the past three decades while the tax structure has remained static. For this reason, as the population increases, state and local governments become increasingly strained in their attempts to provide services for the increased population. The primary reason for this situation is the fact that personal taxes pay only a very small portion of the cost of government in Wyoming. This creates a structural deficit where general fund spending exceeds general fund revenues. Without some mechanism for the increased population to pay for the cost of the additional government services demanded, this situation is likely to continue.

Economic Growth

Most of the following information is based on the Division of Economic Analysis' 10-year Wyoming economic forecast for 2003 to 2012. Since the brief recession in 2001, the real Gross Domestic Product (GDP) in the U.S. is growing, but at a slow pace. Debt and equity markets are strengthening and consumer confidence is rebounding. The national economy is gradually picking up speed and should start to reach long-term average growth by 2006.

Wyoming's economy has been growing steadily since 1987, hardly affected by the national recessions in the early 1990s and 2000s. Due to the nature of the State's economy such as high mineral production, low

manufacturing and small and sparsely distributed population, the above phenomenon is not surprising. Through the 1990s, Wyoming's economy added 34,000 jobs, for an annual growth rate of 1.8 percent, slightly higher than the national average of 1.6 percent.

The non-farm wage and salary employment is expected to average just 1.0 percent growth over the forecast horizon to a level at 272,050 jobs. As a natural gas and coal-producing state with substantial mineral reserves, Wyoming is well positioned to benefit economically and financially from coal's rebirth and higher natural gas prices. However, total mining jobs are expected to decrease slightly from the recent peak in 2001 and hold between 18,000 and 19,000 over the forecasting years due to continuing improvement in productivity. Construction is projected to be the strongest goods-producing industry expanding more than 1.0 percent per year.

Largely driven by the mining industry, the increase of personal income in the state was one of the fastest in the nation during the past two years. Wyoming's Per Capita Income (PCI) reached \$30,753, close to the nation's \$31,030, in 2002. Total personal income in Wyoming is forecasted to grow 4.6 annually, slightly trailing the national rate of 4.8 percent.

Future economic growth will require a quality highway system for the movement of people and goods to all areas of the State. Maintaining the quality of the highway system will be a high priority for WYDOT. The Department has proposed expansion of several two lane highways to multiple lanes in order to improve safety and accommodate future economic growth. These expansions are currently on hold pending availability of funding.

Action Items for 2005 - 2025

- *Update urban area socio-economic forecasts with 2010 census data.*
- *Continue to monitor long-distance commuter routes.*

CHAPTER 3 Funding

State and the federal governments rely on highway user taxation as the principal source of highway funds. The concept of highway user taxation was developed on the premise that the users of highways, as the prime beneficiaries, should be responsible for the majority of the cost of constructing and maintaining them. Highway user taxation first surfaced in the form of motor vehicle registration fees. Later it was expanded to include taxes on motor fuel; motor vehicle tires; parts and accessories; axle weights; driver licensing fees; parking fees; etc.

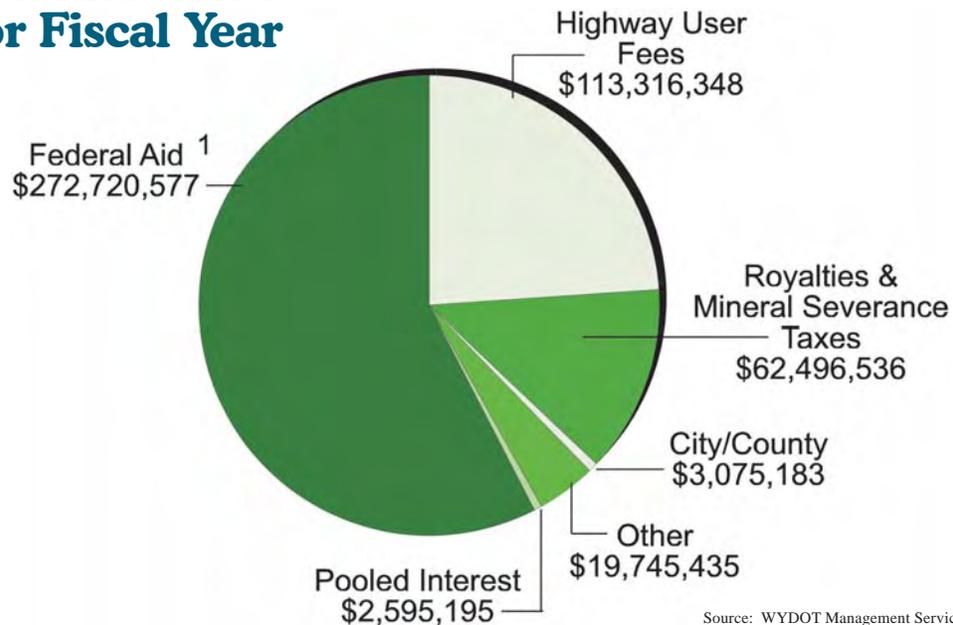
The largest source of revenue for WYDOT in FY2002 was Federal-Aid payments. This source of funding has been subject to significant fluctuation over the years. The level of future Federal-Aid remains uncertain as we wait for Congress to enact reauthorization legislation. Most of this funding is available as reimbursement for payments to contractors on transportation construction projects.

The State Highway Fund receives revenues from

state motor fuel taxes, license and registration fees, mineral royalties, and severance taxes. State fuel taxes contribute the most to the State Highway Fund. Registration and license fees for trucks and cars generate the second largest source of revenue for the Highway Fund. Mineral severance taxes and mineral royalties are the third most significant source of revenue for the State Highway Fund. Fuel taxes and registration and license fees tend to be relatively stable sources of revenue.

The instability of Federal-Aid, State severance taxes and Federal Mineral Royalties makes long range planning for transportation construction and maintenance a difficult endeavor. Federal-Aid funding is affected by federal budget priorities and revenues. Federal mineral royalties and state severance taxes are subject to fluctuating market prices for oil, gas, and coal. WYDOT receives a relatively small percentage of its funding from State sources. The share of State funding for the Highway Account fell from 66 percent in 1990 to 52 percent in 2000.

Sample of Total Revenue for Fiscal Year



Source: WYDOT Management Services

STATE TRANSPORTATION REVENUE SOURCES

The Map below illustrates relative gas tax rates for Wyoming and the surrounding states. The state fuel tax is the most stable source of revenue for Wyoming highways and this source is constitutionally dedicated to fund public roads and highways. Wyoming's gas tax rate is 14 cents per gallon. The State Highway fund receives 7.5 cents per gallon. Counties receive approximately 3.5 cents for road construction and maintenance. The Department of Environmental Quality (DEQ) receives 1 cent per gallon for the Leaking Underground Storage Tank (LUST) Program. The remaining 2 cents are distributed to Wyoming municipalities.

The Wyoming tax rate on diesel fuel is also 14 cents per gallon. The State Highway Fund receives about 9.75 cents per gallon of diesel fuel. Counties receive about 2.6 cents per gallon and cities and towns receive about 0.65 cents per gallon of diesel. The DEQ receives 1 cent per gallon for the LUST Program.

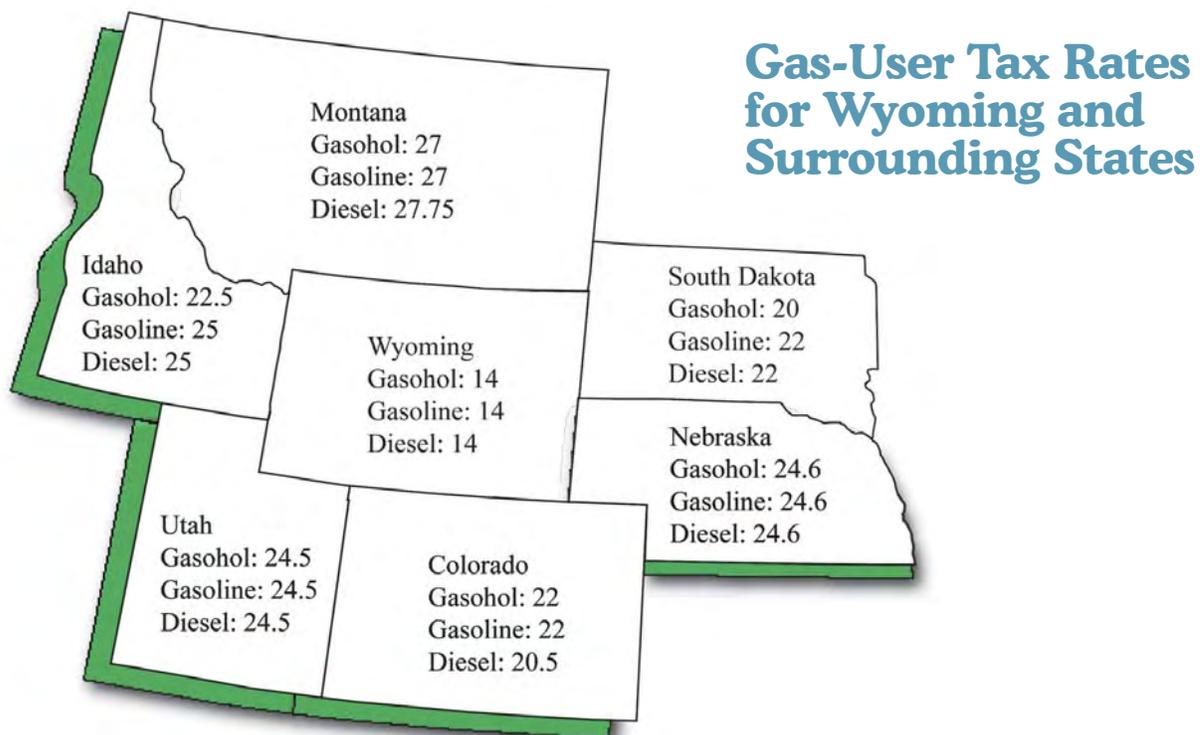
The current level of State funds are absolutely necessary for matching Federal-Aid funds available to WYDOT. They are also critically important for funding

of highway maintenance activities. State funds must be used for most maintenance expenditures. They also provide more flexibility to the Department for activities including construction projects on lower functionally classified highways.

Comparison of Fuel Tax Rates

WYDOT spent almost \$474 million in FY2002 fulfilling all of its statutory mission. Of that amount, \$310.25 million was spent on highway construction and \$87.27 million on maintenance. The FY2002 budget also included \$30.17 million for aeronautics, \$22.8 million for law enforcement, \$14 million for administration and \$9.5 million for other spending categories.

Substantial inflation in construction and maintenance has affected WYDOT's budget since passage of TEA-21 in 1998. Annual construction and maintenance spending for WYDOT has increased significantly during the period covered by TEA-21. In FY1998, WYDOT spent \$258 million on highway construction and maintenance. In FY2002, the amount spent on highway construction and maintenance had grown to approximately \$398



Source: WYDOT Management Services

million. Unfortunately, much of that increase has gone to inflation in construction and maintenance costs.

Stable highway user-financed revenue sources are much lower in Wyoming than surrounding states. In 2001, Wyoming's highway user revenues were the 3rd lowest among the 50 states. Wyoming currently relies on federal mineral royalties and state severance taxes to fill the funding gap left by its low fuel user-tax contribution. WYDOT's reliance on mineral tax revenues raises two primary concerns. The first concern is the instability of mineral-based revenue sources. Mineral prices and production levels have caused a number of boom-bust cycles in the Wyoming economy, resulting in unpredictable highway funding. The second concern is that legislators often look to mineral tax revenues as a means of balancing the State Budget in difficult economic times.

State Funded Programs

- *Continue to operate and fund the WYDOT Urban Systems Program at an appropriate level.*

WYDOT's Urban Systems Program provides assistance to the larger Wyoming cities in transportation planning and facility construction. Metropolitan areas are defined by Federal law as those communities having populations of 50,000 or more. Urban areas are those

communities with population of at least 5,000. Wyoming's two metropolitan areas, Casper and Cheyenne, have Metropolitan Planning Organizations (MPOs) that are responsible for overall transportation planning and improvements. The two MPOs receive Federal Planning (PL) funds in addition to the construction funds. These funds support the transportation planning process within urban and metropolitan boundaries.

The urban areas, Cody, Douglas, Evanston, Gillette, Green River, Lander, Laramie, Powell, Rawlins, Riverton, Rock Springs, Sheridan, Torrington and Worland participate in WYDOT's Urban Program. After the 2000 Census, the Town of Jackson qualified for the program but has not yet decided to participate. The urban and metropolitan communities receive a share of the \$5 million set aside by the Transportation Commission each year for the program based on population. These funds are available for transportation planning or construction of transportation facilities on functionally classified roadways.

Although TEA-21 and ISTEA did not mandate or provide specific funding for an urban transportation improvement program, the Wyoming Transportation Commission has opted to continue funding the program as in the past, utilizing Surface Transportation Program (STP) funds. This Program is one way WYDOT provides direct assistance to Wyoming cities.

WYDOT should continue to assist the urban communities with transportation planning through a

WYDOT's Urban System Program

- ▲ Metropolitan Planning Organizations
- Urban Communities
- * Does not participate in the Urban Program



local committee process. Each urban community is given the opportunity to design its own planning process within relatively broad program guidelines. Planners from the Systems Planning group and WYDOT District Staff provide technical assistance to local planners and engineers in order to improve local transportation systems. Continuation of the Urban Systems Program is viewed as a viable way to ensure a high quality transportation system within the urban areas. It also provides an organized means of promoting cooperation between WYDOT and Wyoming cities.

- ***Continue to fund the Commission Road Improvement Program at an appropriate level.***

The Commission Road Improvement Program (CRIP) was established by WYDOT to provide financial assistance to counties for roadway improvements. WYDOT should continue to fund this program and continue to use it as an incentive for counties to take over responsibility for highways that should be deleted from the State Highway System. The program is funded with \$5 million in STP funds each year. County commissioners must make a request to the Transportation Commission to be eligible for funding under this program.

- ***Continue to provide training and mentoring representatives of the Wind River Indian Reservation's Joint Business Council (JBC).***

This can be accomplished by continuing WYDOT's Tribal Training Program with Title 23 Section 140 funds as current legislation permits. The Department should encourage mentoring projects in phases of design and construction for roadway and bridge projects on the Wind River Indian Reservation. Archeological training could also be provided for assigned representatives of the Wind River Indian Reservation's Joint Business Council (JBC).

FEDERAL-AID FUNDING PROGRAMS

In 1996, TEA-21 provided a substantial increase (approximately 40 percent) in federal-aid funding for the

nation's surface transportation system. It also linked funding for transportation to highway user-revenues from the Highway Trust Fund. The legislation also included "incentives" for states to adopt federal safety laws, such as the 0.08 blood alcohol level for drunk driving and prohibition of open alcoholic beverage containers in motor vehicles.

The largest federal-aid funding program for WYDOT is the National Highway System (NHS). This federal program provides funding for improvements of the interstate system and other urban and rural principal arterial roadways. However, states may use a portion of their allocation of NHS funding as if it were Surface Transportation Program (STP) funding.

The second largest federal-aid funding program for WYDOT is the Interstate Maintenance Program (IM). This program is intended to provide funding for the continued maintenance and upgrade of the 46,000 mile Dwight D. Eisenhower National System of Interstate and Defense Highways. TEA-21 allowed IM funds to be used for interstate highway reconstruction. IM funds may not be used for maintenance of non-interstate highways.

The Surface Transportation Program (STP) provides funding for any roads not classified as local or rural minor collector, including those on the NHS. These roads make up the classification of federal-aid highways. A new provision in TEA-21 allows a portion of STP funds reserved for rural areas to be spent on rural minor collectors. Of these funds, 10 percent must be used for safety, which includes rail highway crossings and hazard elimination. An additional 10 percent must be set aside for transportation enhancement activities.

The Wyoming Transportation Commission has continued to set aside \$10 million in STP funds for local programs. The WYDOT urban program is funded with \$5 million per year and the Commissioners Road Improvement Program (CRIP) is funded with \$5 million per year. In FY2002, these set-asides exhausted approximately 25 percent of WYDOT's STP allocation.

WYDOT's Aeronautics Division receives a substantial amount of funding from the Federal Aviation Administration (FAA). These funds must be matched at a rate of 90 percent federal and 10 percent state or local funds. FAA funds are used for aeronautics planning and airport improvements throughout the state. In FY2002,

the Aeronautics Division received \$20.1 million from the FAA for improvements to 38 Wyoming public airports.

Much of Wyoming's public transportation funding is provided by the Federal Transit Administration (FTA). WYDOT provides state matching funds for a number of separate programs. These include the FTA Section 5307 program (urban mass public transportation grants), FTA Section 5311 program (public transportation grants for rural public transportation), state-funded rural public transit program, FTA Section 5309 program (mass public transportation capital grants), FTA Section 5310 program (elderly and handicapped public transportation) and the FTA.

Transit planning is funded with planning grants through the Federal Transit Administration (FTA) Section 5303 and 5313(b) Programs. These Programs require a state or local match of 20 percent to 50 percent to qualify for the federal funds. In FY2002, federal transit grants totaling approximately \$1.9 million were received by WYDOT and Wyoming communities. The State Legislature provided \$1.5 million from the State Highway Fund for rural public transportation programs.

If the level of Federal-Aid funding is substantially increased over existing levels, it would be difficult for WYDOT to cover the state match required for Federal-Aid funds without increased state revenues. The alternatives would be to reduce state-funded construction and maintenance activities or to possibly forfeit Federal-Aid funds. Either of these options would adversely affect the state transportation system. Another unappealing option would be for WYDOT to eliminate some of the funding programs outlined below. WYDOT would prefer to maintain these programs.

FUTURE FUNDING

- *Pursue adequate funding to accomplish the Department's mission.*
- *Pursue state funding to maintain state highways that are not eligible for Federal-aid.*
- *Work in cooperation with cities and counties to secure sufficient funding for all levels of government for construction and maintenance of transportation facilities.*

The 1991 DeLeuw, Cather and Company Wyoming Road System Study indicated that \$282 million was needed annually to maintain the existing State Highway System and its infrastructure needs. The study estimated that the state was deferring more than \$40 million yearly in resurfacing needs. This would result in an estimated \$160 to \$320 million in future annual reconstruction needs. The study further estimated that more than \$6 million in low priority annual needs were either left to deteriorate or given minimal stop gap maintenance.

WYDOT has long recognized these shortages and is pursuing ways and means to mitigate them. Methodologies currently being explored include implementation of management systems, review of design and tolerable standards, utilization of comprehensive and coordinated transportation planning and review of revenue sources. WYDOT has been striving to maximize its cost efficiency and productivity. However, financial needs are beginning to severely limit the Department's ability to maintain the existing highway system. It will become increasingly important for the public to become aware of WYDOT's needs.

- *Seek a higher proportion of state funding from dedicated user taxes and fees.*

The American public appears willing to pay for maintenance and construction of transportation infrastructure. A national poll conducted by Zogby International (Better Roads, April 2003) found that 64 percent of those surveyed would support an annual 2 cent per gallon increase in the federal gas tax if the revenue was used exclusively for roads, bridges and mass transit. WYDOT plans to survey its customers to determine their willingness to contribute more state tax revenue toward transportation. Currently, the contribution of state funding in Wyoming to transportation is among the lowest in the nation.

Mineral revenues received by WYDOT can be quite unstable due to price and production fluctuations. This makes programming transportation construction and maintenance spending more difficult. User taxes and fees follow the benefit principle of public finance wherein those who benefit more from the provision of highways pay more for the privilege. In addition, fuel tax

and other user taxes and fees tend to be more stable sources of revenue.

- *Identify the critical level of funding needed to maintain the quality of the existing highway system.*

Current revenues from all sources are insufficient to maintain the existing highway system at the present level of service. Over time, as overlays and other maintenance activities are deferred, future spending levels required to maintain pavement quality increase significantly. Inflation is another major contributing factor to increased maintenance costs. Unless sufficient funding for maintenance is provided soon the citizens of Wyoming will have to answer the question, “Do we want to maintain the high quality highway system that we are accustomed to or are we ready to settle for less?”

WYDOT is currently operating under forecasts that assume the current level of Federal-Aid funding will remain the same for the next six years. Forecasts beyond the current fiscal year are relatively futile because of the high degree of uncertainty regarding when Congress will pass a transportation reauthorization bill and what it will eventually contain.

Reauthorization

The amount of federal-aid funding Wyoming will receive under the next transportation funding bill is highly uncertain. As of this date, the states are operating under a temporary extension of the provisions of TEA-21. President Bush is threatening to veto the separate bills passed by the Senate and the House of Representatives. WYDOT will have to wait and see what comes out of the conference committee.

The larger population states that receive less in federal-aid than is contributed within their borders to the Highway Trust Fund have pushed for a larger minimum guarantee under the new legislation. It is very likely that these donor states will receive a larger share of funding under the new reauthorization bill.

A change in the minimum guarantee will reduce the amount of federal-aid received by Wyoming unless the total amount of funding available increases substantially.

Wyoming and other donee states receive more federal-aid funds than they contribute to Highway Trust Fund. Most of the donee states are geographically large with smaller populations and substantial parcels of federal lands. Many of these states, like Wyoming, are bridge states that would have a difficult time maintaining their NHS routes without substantial federal-aid assistance. Increasing the minimum guarantee for donor states could threaten WYDOT’s ability to maintain the existing State Highway System.

Potential Revenue Sources and Operational Savings

The Department completed a Highway Cost Allocation Study in 1999. The study was based on data from 1995-1997. This was the first such study undertaken by the Department since 1981. The user revenue structure in the state and many other important factors had changed significantly since the 1981 study. Also, the 1981 study was focused on system needs and whether existing user revenues would be sufficient to fund needed improvements. The focus of the 1999 study was on the allocation of State Highway System costs and user revenues. WYDOT is not entirely confident in the accuracy of the results of the study given the unproven software and some of the data limitations encountered.

The results of the 1999 study revealed that pickup truck and single unit truck vehicle classes were responsible for a larger percentage share of state user revenues than highway costs. The bus vehicle class contributed nearly an equivalent proportion of state user revenues and allocated costs. The automobile and combination truck vehicle classes contributed a smaller percentage of state user revenues than their percentage of allocated costs. An update of the study is planned for completion in 2009.

If user taxes and fees were set at an appropriate level, additional state funding of transportation from other sources should not be necessary. The exception might be for revenues collected by the state for distribution to cities and counties.

The Legislature may consider repeal of the limitation on county property taxes. This might enable counties to fund maintenance of their own roads. It also may allow

the state to abandon state highways that cannot be justified to remain on the state system.

The limitation on city property taxes may be lifted as well to allow cities to fund the maintenance of their own roads. Urban areas should be encouraged to perform adequate planning for their road systems. Another potential source of local transportation revenue that may be considered would be user fees such as special fuel taxes.

Potential Revenue Losses

Declining Funding From Gas Tax

Currently, WYDOT depends heavily on federal transportation funding for highway construction and maintenance. In FY2002, roughly 52 percent of the Department's funding was received from Federal-Aid. State user fees provided 27.5 percent of WYDOT's funding. Mineral tax revenues provide 14 percent of WYDOT's funds. State and federal user fee revenues provide about 80 percent of the Department's funds. The remainder of WYDOT's funding comes from other non-user sources.

WYDOT must attempt to anticipate potential future problems including declining sources of revenue. It is quite possible that fuel use, particularly gasoline, could decline in the near future as a result of increasing fleet fuel efficiency or development of viable alternatives to internal combustion automobiles. Alternate fuel vehicles using CNG, dual fuel, electricity and hydrogen fuel cells may not be commercially competitive at this time, but were hardly available 10 years ago. If any of these alternate fuel vehicles become commercially

competitive, alternatives sources of funding for highway construction and maintenance will have to be found. Sources of additional user funding could include increasing the state fuel tax rate, increasing vehicle license fees or taxes on alternate fuels (e.g. CNG). Another source of funds could be increased funding from non-user sources such as mineral tax revenues.

Cost-Reduction Alternatives

WYDOT will continue to improve its safety, pavement and bridge management systems to improve the efficiency of its operations. WYDOT should implement a more data-driven process for selection of transportation improvement projects. By channeling WYDOT's limited funds to those projects identified as having highest benefit/cost ratios, the efficiency of the transportation system in the state can be maximized. A more analytical approach to project programming should improve system efficiency. Such a process would require that some needed projects will have to be delayed because their priorities are lower.

Another rather unpopular means of decreasing the level of funding necessary for maintenance of the transportation system would be to reduce the tolerable level of pavement quality before maintenance activities. The Programming needs analysis process compares existing highway conditions against tolerable standards to determine physical needs. These needs are prioritized by physical characteristics. Wyoming currently has many hundreds of miles on the State Highway System that do not meet existing tolerable standards. Reducing tolerable standards would mean that road surfaces would be allowed to deteriorate to a lower quality before money would be spent to improve their condition.

Another means of reducing the cost of the transportation system would be to eliminate some of the "frills" we now enjoy. WYDOT could eliminate construction and maintenance funding for rest areas. Funding for the Enhancement Program could be channeled back to the highway and air transportation systems (with federal approval). These and other changes could reduce the total amount of funding needed to maintain the existing transportation system.



Finally, WYDOT could alter its design standards by reducing the level of service. This modification would reduce safety and potentially increase congestion in some areas of the state. However, lowering the design standards for construction of highways would reduce the cost of constructing or reconstructing roads. Secondary effects of this policy should be carefully examined before its implementation.

With limited funding for maintenance, only those projects with the highest cost-benefit ratios should be included in the STIP. Net present value should be used in these calculations to find the projects with the greatest return. In this manner, the efficiency of the system will be maintained as much as possible over time.

State Highway System

To provide an efficient and effective system of highways, the State of Wyoming assumes complete responsibility for roads of statewide importance. Current management of the state highway system includes the study of functional classification, needs analysis and programming.

The functional classification of a road reflects the

type of service it is expected to provide. When correctly classified, a system of roads exhibits a hierarchy of function. This eliminates duplication of service, thereby increasing efficiency. The counties periodically verify the functional classification of highways within their borders.

Current practice limits the state highway system to highways that are functionally classified as arterials, major collectors and urban collectors. Due to past commitments, however, several highways of lower functional class remain on the state highway system. Each of these should be returned to local jurisdiction when the opportunity arises, such as in trade for highways added to the state highway system. Special studies will be performed to determine the validity of any proposed future additions.

Action Items for 2005 - 2025

- *Update Wyoming transportation needs study to include State, city and county needs.*
- *Forecast the impact of improved fuel economy and alternate fuels on fuel tax revenues.*

CHAPTER 4 Highway System

INTRODUCTION

The results of the 2004 Customer Satisfaction Survey indicate considerable satisfaction with the construction and maintenance of Wyoming highways. Almost 68 percent of the respondents indicated that they are very satisfied or somewhat satisfied with the condition of the state's highways. Only 9 percent of the responses revealed dissatisfaction. The remaining 23 percent of responses were neutral.

Wyoming's small and dispersed population, relatively large land area and limited availability of commercial air service contribute to a heavy reliance on the state's highway system. The highway transportation system in Wyoming provides vital links to markets for many smaller communities that are not served by other modes. An efficient highway system is an essential prerequisite for economic growth and development in the 21st Century.



Highway System Goals:

- *Improve safety of the State Highway System.*
- *Improve cost efficiency of highway construction and maintenance.*
- *Maintain mobility and highway capacity on arterial routes.*
- *Provide and improve linkages between existing highway facilities to ensure a comprehensive and responsive state highway system.*
- *Maximize transportation system effectiveness and economic efficiency by coordinating with other levels of government in transportation planning.*
- *Improve linkages between existing multi-lane highway facilities to ensure a comprehensive and responsive State Highway System.*

From its inception, the purpose of the Department has been to plan, construct, operate and maintain a highway network to connect Wyoming's communities. Over the years the State Highway System has grown to become the core of Wyoming's transportation system, providing regional and statewide mobility. The highway network provides all-weather mobility and land access to property, goods and services. Highways can be instrumental in shaping the growth and development of Wyoming's communities and support commercial, industrial and recreational expansion. Efficient management of the highway network over the next 20 years will require improved decision-making regarding distribution of funding, programming of projects and project design.

The basic function of highway planning is to determine where, when and what highway facilities are required to meet the demands of travelers and shippers.

Wyoming Department of Transportation

Billions of dollars have been invested in the State's highways. Limited funding will force WYDOT to allocate resources more efficiently in order to preserve the quality of the State Highway System over the next 20 years. Properly timed investment in highway facilities will extend the life of highway facilities and prevent the excessive cost of premature reconstruction.

The people of Wyoming demand an integrated highway transportation network that will serve present and future travel demands in a safe, efficient and economical manner. Efforts will be taken to identify locations with safety hazards and to reduce crash rates and fatalities on the State Highway System. The Department will continue to support economic growth and development through appropriate transportation infrastructure improvements.

Highway System Description

Wyoming has more than 27,000 miles of public roadways. The roadways include everything from multilane Interstate highways to local service roads. Of this total, 6,850 miles are on the State Highway System (SHS) and are administered by WYDOT.

Wyoming ranks 42nd in public road mileage and 8th in land area. The state's low population density creates challenges for air, rail and transit, making the population very dependent on highway transportation. Wyoming has been described as a small town with very long streets. The highways in the State connect our communities and provide access to land, goods and services. Unlike other states in which many communities are served by several roads or highways, Wyoming communities are seldom served by more than one or two. These connections are usually state highways. The lack of redundant routes requires the State Highway System to serve not only inter-state and intra-state functions but also intra-county and land access functions. This dependence on state highways for land access has begun to create safety and capacity problems as traffic volumes have increased on a number of principal arterial routes.

Jurisdictional authority over Wyoming's total public road mileage is: 25 percent state, 53 percent county, 8 percent city, 12 percent federal and 2 percent local. The vast majority of this mileage, 91 percent (24,979 miles), is located in rural areas while the remaining 9 percent of

the mileage (2,504 miles) is urban (located in communities with a population of at least 5,000).

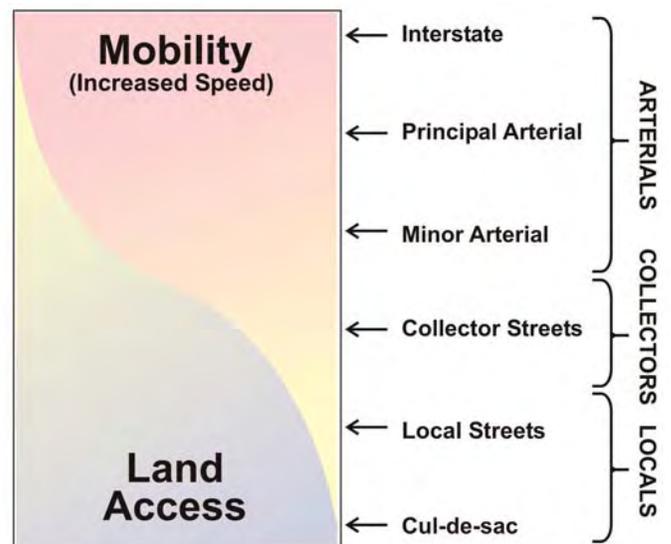
Approximately 43 percent of the urban mileage is located in the urbanized areas of Casper and Cheyenne. Approximately eighty percent of Wyoming's total Daily Vehicle Miles of Travel (DVMT) is rural.

Highway Functional Classification

Not all of the public roadways are of equal importance to the traveling public in Wyoming. Some highways serve primarily long distance, interstate travel. Others serve local traffic almost exclusively. In order to provide a framework for efficient highway system planning, development and maintenance highways are typically categorized according to their primary function. This procedure of categorizing highways according to use is known as highway functional classification.

Functional classification is a planning tool which groups highways into classes according to the most important type of service they are expected to provide. Most highways provide a combination of traffic mobility and access to adjoining land. However, the relative importance of these two functions in the operation of a highway determines its functional classification.

Highways are functionally classified as arterials, collectors or local roads. Separate functional classes are used for rural and urban roadways. The figure illustrates the relationship of the various functional classes to land



Safety

access and traffic mobility. For example, freeways (under the arterial classification) provide the highest degree of mobility, with access permitted only at interchanges. This type of design preserves the high-speed, high-volume characteristics of the roadway and eliminates the hazardous conditions that would result if unrestricted access was allowed for slower moving vehicles at any point along the highway. Conversely, the primary function of local roads is to provide access to adjacent land areas. Local roads typically comprise the majority of public road mileage. Between these two extremes are those highways (collectors) that provide both mobility and land access.

In mature and ideal highway systems, the Freeway (Interstate) and Principal Arterial classifications comprise more than 6 percent of the public road mileage. Since Wyoming's State Highway System is limited in comparison to the state land area that it serves, the percentage of Principal Arterial mileage is greater than would normally be expected (45.6%). The SHS is the backbone of the state's public road system, since it includes nearly all of the arterial highways and a relatively high percentage of the collector roadway network. The vast majority of county roads are minor collectors and below.

Wyoming highways, with the exception of Interstate highways, carry relatively low volumes of traffic, especially when compared to national averages. However, traffic on Interstate 80 through Wyoming is rather unique. The volume of truck traffic using I-80 to cross the Rocky Mountains is impressive. As a connecting link between Chicago and San Francisco, I-80 is a critical link in the national movement of freight. The rate of traffic growth on this corridor is nearly twice the state average. Semi-trucks comprise more than half the traffic volume and contribute significantly to the maintenance and physical requirements of the highway. Truck climbing lanes have been constructed to improve traffic flow on key sections of I-80 including Telephone Canyon between Laramie and Cheyenne and the Three Sisters near Evanston. In addition, the volume of heavy trucks utilizing the I-80 corridor causes severe wearing of the pavement surface and requires the commitment of significant construction and maintenance resources. This is a challenge that WYDOT will undoubtedly face long into the future, especially in light of the FHWA freight volume forecasts for the highway.

WYDOT's concern for transportation safety is included in virtually all aspects of highway planning, design, construction and maintenance. Typical reconstruction projects include wider paved shoulders and many projects have also included shoulder recovery zones. Other safety advances include intelligent transportation systems, shoulder rumble strips and the placement of reflective beads in paint.

With increases in traffic volumes and vehicle miles of travel, one would expect an increase in the relative number of crashes. However, that has not been the case. The crash rate per million vehicle miles traveled has dropped from about 2.18 in 1990 to 1.83 in 2002. There are several reasons for this. First, modern highways are constructed with wider traffic lanes and bridges, flatter curves and slopes, clear zone areas along the highway devoid of dangerous obstacles, and improved traffic control devices. Secondly, there have been improvement in vehicle safety design. Third, WYDOT has embarked on an aggressive highway safety campaign to promote the use of seat belts and child restraints. The Department has also placed a higher priority on drunk driving enforcement. As a result, the percentage of fatal crashes with alcohol involved dropped from 49.5% in 1992 to 35% in 2002.

WYDOT has always been committed to the construction of safe highways and the development of a safe highway system. To help achieve this goal, WYDOT maintains an extensive database of crash information and routinely monitors and evaluates crash locations to identify high crash locations. If appropriate, safety improvement projects are then programmed for construction. This process has resulted in improved safety for travelers on the State Highway System.

In 2003, WYDOT conducted a comprehensive safety inventory. This internal study found that the vast majority of WYDOT's operations and spending are directly related to improving traveler safety. According to the study, "It would be difficult to discern which activities provide for the safety of Wyoming's transportation system as all activities contribute, in one way or another, in achieving WYDOT's mission of providing a safe and efficient transportation system."

Federal-Aid Highway Program

In the past, the federal-aid highway program funds were devoted to the construction and improvement of specific roadway systems (Interstate, Primary, Secondary and Urban). In 1991 the Primary, Secondary and Urban Programs were replaced by the National Highway System (NHS) and Surface Transportation Programs (STP). The routes included in the NHS have been approved by the FHWA and Congress. Funding under this program is distributed to the states according to mileage and vehicle miles on principal arterial highways. The NHS system in Wyoming contains 2,951 miles. Funds from the STP block grant program can be used for construction or improvement of rural highways classified as rural major collector and above or for urban highways classified as collector and higher.

Other federal-aid funding programs include: the Congestion Mitigation and Air Quality (CMAQ) Program for projects in air quality non-attainment areas (out of compliance) for carbon monoxide and ozone emissions. Wyoming may utilize these funds as normal STP funds since all areas of the state meet federal air quality standards for ozone and carbon monoxide. The Bridge Replacement and Rehabilitation Program provides funding for bridges on public roads. The Public Lands Highway Program provides funding for Indian Reservation Roads, Forest Highways and National Park Roads.

Federal-Aid funds provided under ISTEA and TEA-21 were intended to provide for an intermodal national transportation system. Unlike previous acts, they provided funding for all modes of transportation, including bicycle and pedestrian facilities. Recent federal policy places a higher priority on public involvement, environmental and cultural considerations. These federal laws also have provided for more flexibility in the use of federal-aid funds. New federal rules and policies require WYDOT to be more responsive to the desires of the public.

Observed Trends

Highways have played an instrumental role in the development patterns of the state. There is no reason to expect a decline in the importance of the highway system in the next 20 years. The economic prosperity of the state

relies heavily on the maintenance of a quality highway network. The State's economic base is primarily comprised of mining, tourism and agriculture. Highways provide the access and mobility vital to the tourist economy and the production and distribution of mineral resources, agricultural products and industrial goods. Recreation and tourism are extremely dependent upon access to public lands, national parks, historic sites and scenic attractions. Wyoming residents depend on the highway network to access necessary goods and services. In addition, access to public services, such as police and fire protection, mail delivery, medical health facilities and public education, are provided by the highway network.

No single mode of transportation can be expected to service all of the State's transportation needs. All transportation facilities are subject to inherent strengths and weaknesses. However, the highway system operates as the most readily accessible and independent transportation mode within the state. Both the rail and air modes are dependent upon the highway network to complete trips that have origins or destinations beyond the physical boundaries of their facilities. Highways are and will continue to be the foundation on which all other transportation modes build and expand.

The last sections of State Highway System were paved within the past 10 years. Over the next 20 years, a few new sections of highway may be constructed. However, the Department's primary emphasis will be preservation of the existing system. Resurfacing,



rehabilitation and reconstruction projects will be the rule in an attempt to extend the useful life of existing highways. Needs analysis and Pavement Management Systems will continue to provide valuable information to the project selection process in order to get the most out of available funds.

HIGHWAY SYSTEM FOCUS AREAS

- *Streamline the State Highway System by transferring routes that do not provide substantial system benefits to other jurisdictions.*
- *Identify any new routes needed to complete the State Highway System.*



More than 94 percent of the almost 7,000 miles of the State Highway System are rural. These highways provide for interstate and intrastate movement of people and goods. The purpose of the SHS is to provide a system of highways connecting Wyoming communities. The SHS must also provide continuous connections to highways and destinations in other states. Routes on the SHS should provide access to incorporated municipalities, state parks, popular recreation areas or state institutions. Certain routes on the SHS provide benefits to only a few local residents. WYDOT Planning will review the status

of these routes, functionally classified as local roads or minor collectors. Those routes not fitting the SHS criteria will be recommended for deletion from the SHS. WYDOT should continue to use the CRIP to provide incentives for counties to take over responsibility for some of these routes.

Access Control

- *Strengthen WYDOT's access management operating policy and rules and regulations to maintain mobility on higher order routes.*
- *Partner with cities and counties to limit access to higher order roadways in order to maintain system mobility on connecting county roads and city streets.*

Authorities at the state, county and local levels are authorized to design highways and streets and to regulate, restrict or prohibit access to those highways. Access to state highways must conform to standards set by WYDOT. The Department's enforcement of its existing regulations regarding highway access has been ineffective on many routes. This had led to a degradation of highway capacity on a number of highways. WYDOT should be especially vigilant on arterial routes in the vicinity of cities and towns where dispersed residential development can create demand for a significant number of access points.

The degrees of control vary from full access control on systems such as the interstate, to very limited control, on such systems as local roads and streets. The functional hierarchy of roads and road usage runs from arterial, with the highest level of mobility and the lowest degree of land access, to local roads with the lowest level of mobility and the highest degree of land access.

Access management balances the competing needs of providing access to land while preserving a safe and efficient flow of traffic on the roadway. If executed properly, access control generates the following benefits:

- *Improved safety due to less frequent and severe crashes and fewer pedestrian conflicts.*
- *Reduced travel delays.*
- *Increased and preserved roadway capacities.*
- *Reduced fuel consumption.*
- *More aesthetically pleasing roadways.*



Wyoming Department of Transportation

It is the policy of WYDOT to restrict land access to roadways with high mobility because the main purpose of these roads is to maintain the efficient mobility of people and goods. Adding land access points degrades the safety and efficiency of roadways. WYDOT currently maintains the Rules and Regulations for Access Driveways to Wyoming State Highways, dated 1982, as the access control guide for the state. This booklet outlines the state's basic access control policy, maximum allowable approaches under ideal conditions, regulations and information for obtaining driveway access permits, design requirements for accesses, typical residential and commercial access layouts and the application for a permit to construct an access driveway.

The ineffectiveness of the current Access Management Policy to limit accesses and protect mobility has become evident. WYDOT is updating its access management policy to better protect mobility on the SHS as traffic continues to grow. The public input process for updating this policy is expected to be completed during calendar year 2005. Issues addressed in the new policy include: medians, auxiliary lanes, signal spacing, driveway location and design, driveway spacing, corner clearance, reverse frontage or backage roads and internal circulation and connectivity of individual businesses.

Improve Efficiency of Road Closures

- *Use Intelligent Transportation Systems (ITS) to alert drivers of winter weather conditions and help prevent crashes and improve system operation.*
- *Work with community emergency management personnel to minimize adverse effects of road closures on major highways.*

Minimizing the impacts of weather-related highway closures is a constant test to the Department, especially along I-80 where traffic volumes have increased substantially in recent years. Today, closures of more than a couple of hours can clog interstate shoulders and ramps and even travel lanes. Stranded travelers also can quickly overwhelm all but the largest towns along the route.



The Department has taken a number of measures to reduce closure-related problems along the interstate for both travelers and communities. WYDOT meets with local emergency response personnel to coordinate closure plans. WYDOT has implemented a procedure to supervise safe parking of cars and trucks at the closure site or, in some circumstances, sending vehicles back to nearby communities. WYDOT will continue to construct additional parking areas for trucks along interstate highways as part of programmed improvement projects.

The Department's road report telephone system was recently upgraded to handle the ever-growing volume of calls. Finally, the Department plans to utilize ITS to warn travelers about upcoming adverse conditions far enough in advance to adjust their route. The intent is to alert drivers of dangerous conditions so that they can avoid crashes, thus helping to decrease closures. Additionally, ITS can be used to alert drivers of closures enough in advance for them to stop in communities with traveler services. The Department will continue to apply new technology as it becomes available in the ongoing challenge of keeping Wyoming's highways safely passable in winter weather and minimizing problems when roads must be closed.

Intelligent Transportation Systems

- *Continue implementation of intelligent transportation systems on major freight corridors*

Some of the most exciting developments in transportation are occurring in Intelligent Transportation Systems (ITS). These systems use technology to



alleviate congestion and safety problems, improve operating efficiency for transit and commercial vehicles and reduce the environmental impact of growing travel demand. Application of ITS on major freight corridors can improve safety where a substantial mix of vehicle types exist. Applications of this technology can be used to warn drivers in advance of hazardous driving conditions or road closures. Advanced warning can reduce the impact on smaller communities when major freight corridors are closed.

To initiate intelligent transportation systems development in Wyoming, WYDOT unveiled an ITS Strategic Plan during the fall of 2001. Through implementation of the strategic plan, the Department will concentrate ITS application on the I-80 corridor. Other ITS goals include: prioritizing and scheduling highway and other transportation projects, managing and informing the public of highway emergencies and providing other traveler information, improving traveler safety and security and regulating commercial motor vehicle operations.

Evaluating, deploying and refining ITS solutions to address the areas of need identified by the strategic plan will be an ongoing challenge for WYDOT during the 2002 to 2006 plan period. The WYDOT Geographic Information System (GIS) and ITS programs, Traffic Program, Telecom Program and a number of consultants are working together on this endeavor.

WYDOT's ITS components include the pre-trip information systems and roadside devices. Pre-trip information systems are intended to inform the public of conditions before drivers leave home. Roadside devices, such as dynamic message signs, are intended to inform drivers of conditions during their travels.

Deployment of roadside devices enable the system to be effective. In order for ITS to be effective, safety and efficiency issues need to be identified, such as high crash locations and critical corridors for the movement of goods. The ITS devices should be deployed in high priority locations. The final deployment stage is to evaluate effectiveness with follow-up analysis.

WYDOT will evaluate the following instruments to improve the ITS throughout Wyoming. The instruments include road and weather information systems, highway advisory radios, dynamic message signs, web cameras, PTZ cameras, animal detection systems, ice detection systems and auto road closure gates. Currently, several locations throughout the state are being tested for future use of these instruments.

Accommodate Freight Movement

- *Evaluate the need for capacity improvements related to freight movement on the State Highway System.*
- *Evaluate the need for safety improvements specifically related to freight transportation.*
- *Identify security concerns or potential bottlenecks in the transportation system.*

FHWA estimates that in 1998, 80 percent of the estimated nine trillion dollars worth of annual freight was transported by truck. They estimate that more than 11 billion of the 15 billion tons of freight was transported by truck. Economic growth and the North American Free Trade Agreement (NAFTA) have led to increased freight transport on many highway corridors. The tonnage of trade between the United States, Canada and Mexico increased by about 90 percent from 1994 to 2000.

Although the impacts of NAFTA have not been as great in the Mountain Region of the United States, increased truck movements through Wyoming as a bridge state are evident. Truck traffic on I-80 in Wyoming increased by more than 56 percent from 1994 to 2000. This trend is expected to continue. Other highway segments are experiencing high truck volumes, some of which were not anticipated at the time they were designed and constructed. These segments will be identified and the need for improvements analyzed.



The ability of the U.S. transportation system to move goods and services in an effective and cost-efficient manner is critical to the maintenance of America's high standard of living. The U.S. economy is evolving into a structure requiring greater reliability of freight transport. Just-in-time inventory delivery models require the freight logistics system to be much more efficient. Information technologies and electronic commerce have placed greater demand for efficiency of freight transport and places more goods in the distribution pipeline for minimal amounts of time. This process has reduced the need for warehouses and reduced idle time of goods in many production processes. Trucks have become fleets of rolling warehouses. The highway system plays a vital role in freight movement, in that the vast majority of goods are transported on this component of the transportation system.

The I-80 corridor in particular is becoming more congested with truck traffic. Steep grades exacerbate levels of congestion due to slow moving trucks. Even with WYDOT's 24-hour snow plowing activity, the harsh and unpredictable Wyoming winters necessitate periodic roadway closures due to blizzard conditions or associated crashes. In addition, high winds frequently cause tractor-trailer blowovers along Wyoming's interstates and occasionally lead to highway closures. With few viable east/west alternatives for the freight industry, these conditions will continue to present a major inconvenience to the trucking industry. With truck delays costing an estimated \$1 per minute per vehicle, these delays add up to hundreds of thousands of dollars annually. WYDOT has begun evaluating the need for a continuous third lane along the I-80 corridor. Climbing

lanes have relieved congestion and improved level of service in certain locations. WYDOT is in the process of implementing ITS improvements on the I-80 corridor as well.

Safety effects of the interaction between passenger vehicles and large combination trucks have become another substantial concern on the route. An analysis of crash data on I-80 for the period from 1992 to 2002 indicates that almost two-thirds of the crashes involving more than one vehicle involved a large truck. About 39 percent of all crashes involved large trucks over the period. On the average, 41.5 percent of the traffic on the route for the same 10-year period was large trucks.

A Pre-Pass weigh-in-motion system has been implemented at several of Wyoming's port-of-entry locations. The system allows truckers from participating companies to enter the state without stopping. This saves trucking delay time and eliminates traffic safety issues associated with deceleration and acceleration of trucks into and out of ports-of-entry. Trucking companies pay for each use of the Pre-Pass System, so the program is user-funded. Approximately 25 to 30 percent of Wyoming's truckers currently utilize the Pre-Pass system. Also, a joint port-of-entry for Wyoming and Montana is under design for the Sheridan area that will share facilities and database information.

WYDOT also is actively pursuing advance warning systems for crash and weather-related highway closures and conditions along the interstate corridors. Monitoring systems include remote weather sensors, cameras, etc. Spreading the word of a closure far enough in advance for truck drivers to take action is a primary concern. WYDOT is working with the neighboring states of Nebraska, Colorado and Utah to coordinate efforts to warn drivers of closures they may approach far enough in advance to alleviate severe congestion at closure points.

A dynamic messaging system will soon be implemented on I-80 between Cheyenne and Laramie in an effort to improve safety in an area known for high crash rates and adverse weather conditions. The strategy is to reduce interstate closures by influencing driver behavior with speed monitoring devices, dynamic safe-speed message signs, etc. Web cameras and dynamic message signs have been upgraded in the Green River area on I-80 to assist in diverting traffic for maintenance or other conditions within the tunnels.

WYDOT is implementing ITS on other NHS routes as well. A high-crash area on Alt. US-14A between Burgess Junction and Lovell measures and calculates vehicle speed and length to trigger a dynamic sign warning drivers to slow down. A runaway truck ramp attenuator system outside of Buffalo on US 16 not only notifies the Buffalo Maintenance Yard if the attenuator is activated, but also triggers a dynamic sign along the corridor notifying other truckers that the runaway ramp is out of service. Similarly, a dynamic warning system notifies WYDOT and approaching vehicles in the Nugget Canyon area on US 30 if the Nugget Canyon bridge is iced over. WYDOT will continue to explore other ITS solutions in an effort to improve safety and reduce costly delays and highway closures on the NHS system.

- *Ensure freight corridors retain a high level of mobility and acceptable level of service.*
-

WYDOT will continue to evaluate and forecast freight trends along I-80 and other major freight corridors to ensure that improvements scheduled in the State Transportation Improvement Program are designed to safely and efficiently handle projected truck volumes. The FHWA Office of Freight Management and Operations has released its forecasts for highway freight through the year 2020. The forecasts predict an increase in the tonnage of freight shipments to, from and within Wyoming of more than 100 percent in 2020 compared to the base year of 1998. The projected tonnage of freight in 2010 is 101 million tons and in 2020 it increases to 135 million tons. An increase of this magnitude in freight volume over the 1998 level of 65 million tons will be difficult to accommodate without some increases in highway capacity. WYDOT will evaluate the need for a continuous third lane and/or redundant routes along the I-80 corridor. Also, the Department is evaluating the economics of separate facilities for large trucks and passenger vehicles as an alternative to a continuous third lane on I-80.

- *Evaluate possible opportunities for intermodal freight facilities.*
-

The forecasted increases in highway and rail freight movement for Wyoming are very significant. It may be

difficult for the trucking industry alone to accommodate the forecasted increase in tonnage. In anticipation, WYDOT is in the process of evaluating the potential for intermodal facilities in Wyoming to better integrate truck and rail freight movement.

Congestion and Capacity Expansion

- *Continue to identify and evaluate the need for added capacity on sections of the State Highway System to improve connectivity and safety and to reduce congestion.*
 - *Design structures to accommodate anticipated 25 to 30 year traffic volumes and to provide clearance for future widening of highways or underlying roadways.*
 - *Prepare for multi-lane improvement with advanced right-of-way acquisition.*
-

WYDOT's Multi-lane Initiative evolved from public requests for such facilities along the State Highway System. Residents have requested new multi-lane highways in the name of local or regional economic development, highway safety and traffic congestion. The potential need to expand the state's system of multi-lane facilities was discussed in the 1995 Statewide Long-Range Plan. Highway freight forecasts from the FHWA indicate a need for added capacity on major freight routes. The Transportation Commission has moved the issue forward by proposing legislation to fund expansion of the multi-lane system.

Fortunately, traffic congestion is not yet a major problem for Wyoming's urban communities. However, increasing truck volumes on I-80 are beginning to adversely impact Level of Service (LOS) on the highway. In order to address the issues of maintaining LOS and improving safety, WYDOT is in the process of evaluating the need for additional lanes on the entire length of the I-80. Planning studies will be undertaken to determine if or when improvement to six lanes may be feasible. If additional lanes are determined to be feasible, the studies should set priorities for where those added lanes should be constructed. If the need for added capacity is identified, then improvements to any structures should be designed to accommodate future highway widening.

The need for added capacity in and around urban areas will be evaluated. Certain locations where traffic congestion has been identified as a potential problem include WYO 59 in Gillette, US 14A between Cody and Powell and US 89 in Jackson. Planning studies should be conducted to identify other locations where capacity improvements may be needed over the next 20 years.

Additional structure clearance over underlying roadways should be considered when those roadways may be widened for added capacity in the next 20 to 40 years. The emphasis of this consideration should be on I-80 and the highways included in the multi-lane initiative.

Economic Benefits

Investment in expanding the multi-lane highway system in Wyoming is difficult to justify purely on the basis of relieving traffic congestion. However, other anticipated benefits of highway investment are less obvious. Better highways can improve access to communities and enable them to compete for economic development opportunities. In addition, the direct economic benefits of highway construction are substantial. FHWA is coordinating a Highways and the Economy Initiative to improve our understanding of highway-led employment and productivity growth.

Economic development is highly dependent on having a high quality transportation system. One of the most important considerations for virtually any business seeking a new location is the availability of a multi-lane highway in close proximity to a prospective site. According to economic development experts, the vast majority of businesses want to be within 2 miles or 10 minutes of a multi-lane highway so that they can efficiently receive necessary supplies and deliver their products to their markets.

In the last 15 years, many businesses have chosen to purchase more transportation in order to reduce other logistics costs such as warehouse space and inventories. Just-in-time delivery of products and manufacturing components have increased the productivity of the U.S. economy by utilizing the freight transportation system more efficiently. An expanded network of multi-lane highways would improve the efficiency and reliability of Wyoming's transportation system and improve its competitiveness with other areas in the country.

Employment generated by construction is one of the most tangible and immediate direct economic benefits produced by corridor expansion. According to the FHWA, the impact of \$10 million of highway investment is 447 full-time jobs. Additionally, providing better accessibility to markets provides for future business and job growth. The increase in mobility equates to a reduction in transportation costs for businesses and consumers by reducing time needed to transport materials and goods. Businesses reaping benefits of increased efficiency are then free to enhance future productivity through research, development or facilities expansion.

Expanding a highway for additional safety, efficiency and capacity does not necessarily equate to immediate economic development, but it does invite competitiveness with other regions of the Western United States. Accordingly, highway investment is used as a recruiting tool, enticing businesses with the prospect of cost reduction through efficiency. These cost reductions permit products to be sold at lower prices and lower prices can be expected to lead to business growth. An important empirical finding of the current research is that the higher total production costs associated with output expansion effect are sometimes 'financed' almost entirely by the cost saving productivity gains of highway capital investments. In other words, companies can develop to their fullest potential from cost savings resulting from operating with a more efficient transportation system.

Investment in highways has often been viewed as an effective economic development strategy, particularly for underdeveloped rural areas. Benefits include improved access to services and jobs for rural residents, better access to customers for businesses, reduced transportation costs, potential reductions in travel time, decreased vehicle operating costs and safety and environmental gains. Improved highway access can result in costs savings for local consumers with goods and services becoming more competitively priced.

Expansion of the State Highway System would serve more than just Wyoming residents. Wyoming acts as a bridge state by providing for through traffic and connectivity for interstate commerce. Wyoming must continue to provide connectivity and remain competitive with the expansion of alternate routes in adjoining states.

Residents of our State may not reap the benefits of through movements and business expansion or relocation along these corridors if our highway infrastructure does not provide multi-lane connections.

Right-of-Way

Many areas of the state, including Jackson, Star Valley and Sheridan are already experiencing unprecedented growth. The rapid expansion of the Rocky Mountain Front Range in Colorado is already having a significant impact on the Cheyenne area as well. As primary transportation routes approach capacity, collector routes will certainly be impacted as well.

Now is the time to consider expansion of key highway facilities, while right-of-way is available and before construction costs rise further. Right-of-way should be acquired on high priority routes in advance of specific improvement projects to preserve the corridor for capacity expansion projects. As Wyoming continues to grow, land development, right-of-way costs and access management issues will further complicate future construction endeavors.

Safety

A recent study by Forrest and Stewart claimed that crash reductions ranging from 40 to 60 percent may be achieved by conversion of problematic two-lane routes

to multi-lane facilities. Unfortunately, their analysis did not include intersections; the conclusions were based on, but not limited to, crash, inventory and traffic data extracted from FHWA’s Highway Safety Information System. However, the New Mexico Department of Transportation has determined that multi-lane highways in their state have resulted in a 40 percent decrease in serious injury and fatality crash rates compared to two-lane highways. In New Mexico, crash records indicate significantly fewer crashes on four-lane highways than on two-lane highways. A study conducted by their Traffic Safety Bureau determined that a 40 percent reduction in serious injury and fatal crashes can be expected on highways improved from a two-lane to four-lane facility.

Highway User Benefits

The benefits of WYDOT’s Multi-Lane Initiative would go beyond regional economic competitiveness and highway safety. The Wyoming highway user will benefit significantly from continuous passing lanes and resulting reductions in travel delay times. Higher Levels of Service (LOS), more uniform speeds, improved fuel efficiency and reductions in wear-and-tear on vehicles are some of the other benefits to local residents who will use these corridors. No highway user enjoys the constriction of heavy truck traffic on a two-lane facility in a state recognized for steep grades and adverse weather conditions. Redesigning Wyoming’s highways along select corridors can address these and other issues.

Proposed Routes

The following sections of the National Highway System in Wyoming were selected for potential upgrade to multi-lane on the basis of connectivity, highway safety, traffic congestion and economic development. Routes were evaluated for freight movements, volumes and percentage of trucks, traffic safety/operations, system

Table 3 - WYDOT Multi-Lane Initiative

| <u>Route</u> | <u>Description</u> | <u>Length</u> |
|-------------------|-----------------------------------|---------------|
| US 26 | Torrington to Nebraska State Line | 7.3 Miles |
| WYO 220 | Casper to Muddy Gap Junction | 61.6 Miles |
| US 287/WYO 789 | Rawlins to Muddy Gap Junction | 41.2 Miles |
| US 287 | Laramie to Colorado State Line | 21.2 Miles |
| WYO 59 | Gillette to Douglas | 113.0 Miles |
| US 30/WYO 89 | Border Junction to Kemmerer | 52.5 Miles |
| US 30 | Kemmerer to I-80 | 44.2 Miles |
| US 20/26 | Casper to Shoshoni | 87.5 Miles |
| US 16, 20/WYO 789 | Worland to Greybull | 35.9 Miles |
| US 16, 20/WYO 789 | Worland to Thermopolis | 25.9 Miles |

Source: WYDOT Planning

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analysis (transportation system links and relationships) and regional growth projections. Candidate sections were further investigated for completion of a functional system (missing link), environmental sensitivity, scheduling, opportunity urgency of preserving access control and ease of design and construction. All proposed sections of highway are rural principal arterials on the National Highway System. (This list is not prioritized.)

WYDOT's initiative to expand the state's network of multi-lane highways would not only provide an impetus for economic development but serve as a proactive step in preparing for future traffic volumes. Approximately 11 million vehicle miles are traveled annually on the 10 proposed multi-lane routes.

Rest Areas

Roadside rest areas along highways where travelers can stop, rest and become rejuvenated are essential for drivers to remain alert and to drive safely. In this capacity, rest areas are an important part of the state transportation system. Rest areas with parking for large trucks are especially important for freight corridors. However, rest areas are important to most travelers. Many public comments have recently identified additional rest areas as a needed improvement to the transportation system. WYDOT will continue to improve and upgrade older rest areas, update its rest area study to identify routes in the state where traveler services are separated by more than 50 miles and evaluate the need for new rest areas.

Interstate Coordination

- *Coordinate improvements on highways connecting Wyoming with other states.*

The Nebraska Department of Roads has no improvement plans in their STIP for US 20. Projects for resurfacing, repair and rehabilitation are planned for US 26 and Nebraska Highway 92 within the next five years.

The South Dakota Department of Transportation has no improvements in their STIP for US 18, US 16, US 85 or South Dakota highway 34. They have undertaken preliminary studies for future improvement of US 18.

The Montana Department of Transportation has no improvements in their STIP for US 310, Montana Highway 59 or Montana Highway 314. Reconstruction of Montana Highway 72 is planned for FY2006.

The Idaho Transportation Department has no improvements in their STIP for US 26 or Idaho Highway 34. Reconstruction of US 89 from milepost 30.0 to 31.1 is planned for 2005. Minor improvements are planned for US 30 from milepost 454.3 to 454.8 in 2006.

The Utah Department of Transportation has no improvements planned in their STIP for Utah Highway 16. Minor overlay work is planned for Utah Highway 150 in the next five years. Minor widening and culvert extensions are planned for Utah Highway 30 in the next five years. Major pavement rehabilitation is planned for I-80 in the next five years.

The Colorado Department of Transportation has no improvements planned in their STIP for US 85 or US 287. A minor widening project to add shoulders is planned for Colorado Highway 13 in the next five years. A system quality and safety project is planned for Colorado Highway 125 in the next five years.

ACTION ITEMS FOR 2005 to 2025

- *Update highway functional classification for the State Highway System.*
- *Truck traffic forecasts for major freight corridors.*
- *Evaluate the need for safety improvements and capacity improvements related to freight movement on the State Highway System.*
- *Evaluate possible opportunities for intermodal freight facilities.*
- *Identify security concerns or potential bottlenecks in the transportation system.*
- *Streamline the State Highway System by transferring routes that do not provide substantial system benefits to other jurisdictions.*
- *Identify any new rest area locations needed to complete the State Highway System.*
- *Prepare for multi-lane improvement with advanced right-of-way acquisition.*

CHAPTER 5 Aeronautics

EXISTING CONDITIONS

There are 120 landing areas (95 airports and 25 heliports) in Wyoming. Of these, 42 are public use airports, two of which are privately owned and the remaining 40 are publicly owned. Public use airports are divided into three Federal Aviation Administration (FAA) categories dependant upon the quantity and type of activity at each location: Primary, Commercial Service and General Aviation.

General Aviation airports do not support air carriers or large commercial aircraft operators. In Wyoming, the most commonly operated aircraft at General Aviation airports are those in the business aviation sector. These are generally smaller than the familiar mass passenger commuter or air carrier aircraft. Compared to the number of registered private aircraft in the state, there are a significant number of pilots who own and operate their own aircraft. However, a large percentage of air travel in Wyoming is associated with air passenger and cargo service at the Primary and Commercial Service airports.

Fixed Base Operators (FBOs) are usually the primary businesses located at the airports. They typically provide services in the forms of fuel, hangars, aircraft maintenance, and repair and flight instruction. Additionally, air taxi services, geological and animal surveys and aircraft rentals may be offered by FBOs.

Air ambulance operations are another function serviced or provided by many FBOs. Long distances and difficult terrain in Wyoming create an accentuated need for air ambulance service. An extensive system of airports makes effective air ambulance possible.

The Aeronautics Division realized many changes, challenges and accomplishments in 2003. After reconsideration by the Wyoming Legislature of whether to combine the Aeronautics Commission into the Transportation Commission, a new Aeronautics Commission was appointed by the Governor in the first half of 2003.

Currently, there are 10 communities in Wyoming with regularly scheduled commercial airline passenger service. Nine of these airports are Primary airports, meaning they record more than 10,000 enplanements



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annually: Jackson, Sheridan, Cody, Gillette, Riverton, Casper, Cheyenne, Rock Springs and Laramie. Jackson records the majority of the state's airline enplanements. Casper is the only international airport in the state. Worland is the only Commercial Service airport in the state because the airport accounts for less than 10,000 enplanements annually.

Desired Future Conditions

The Wyoming Aeronautics Division must plan for a safe, efficient and environmentally responsible aviation system. Air service is essential to tie local communities together and to link communities to regional, national and international transportation systems. Air transportation links are important for economic growth because they provide needed access for the import and export of goods and services, as well as facilitating the important tourism industry in Wyoming. The overall structure of the State aviation system and condition of each individual airport in that system provide for safe, reliable access to business and leisure travelers. Air service can also influence where future economic development is likely to occur. The quality of integration of airport facilities into local surroundings and connections to other modes of transportation are important factors for new and expanding business, industry and residential development.

Air Service Enhancement

- *Effectively administer the Air Service Enhancement Program to develop and improve commercial air service in the state.*
-

Perhaps the most visible challenge facing the Aeronautics Division is improving commercial air service in Wyoming. Recent state legislation earmarked \$3 million for air service improvement grants to communities throughout the state. The legislation was intended to increase enplanements, decrease ticket prices, improve reliability, create competition, and maintain and develop vital air transportation connections.

The Wyoming Business Council, with the assistance of the Wyoming Aeronautics Commission and the

Aeronautics Division, will review and approve applications from the communities on a competitive basis. This funding provides a considerable move toward establishing consistent, dependable and affordable commercial air transportation for travelers. The Aeronautics Division will continue to work to improve air service by working closely with state and local entities to develop an environment that is conducive for stability and growth for commercial air service.

External Agency Relationships

- *Continue to build strong relationships between local communities, the State of Wyoming and the Federal Aviation Administration.*
-

Another goal of the Aeronautics Division is to find new and better ways to serve and build stronger relationships with those involved in the state aviation system. In the recent past, the Division has reorganized some administration processes. In 2004, the Division developed a project programming procedure called the Wyoming Aviation Capital Improvement Program (WACIP) to improve the allocation of construction funding. The project granting and budgeting processes have been streamlined. Finally, the Priority Rating Model was updated. The update process utilized a task force with representation from different types of airports, the Aeronautics Division and the Aeronautics Commission.

The Priority Rating model is an important tool used to evaluate and rank airport projects for state funding. The improvements to the processes were customized toward all entities involved, including the Aeronautics Division and other state agencies. Thus far the reactions have been very positive. In the future, the Division will continue to adjust or create new processes as necessary to serve the needs of the aviation community.

Aviation Safety

- *Improve safety and efficiency of the aviation system.*
-

The Aeronautics Division will strive to improve the safety of aviation within the state. Throughout the long-

term future, improving airport safety will focus on stringent land use protection, prevention of Part 77 surface penetrations and regularly scheduled 5010 airport safety inspections. In addition, the Division will continue to support safety projects at airports and develop and implement new, technologically advanced weather systems and navigational aids.

Efficient Facility Maintenance

- *Provide effective facility maintenance programs that properly time investments and prevent unnecessary costs.*
-

Airports are much like highways in that maintenance must be performed at the appropriate time period to prevent unnecessary future costs and obtain the maximum use of the facility or pavement. The Division will continually review airport projects to ensure the maximum effectiveness of funds. Also, the Division will implement a Pavement Management Program to

improve the scheduling of pavement maintenance projects based on pavement condition and other data.

Aviation Education

- *Promote educational activities for the aviation community and for the general public.*
-

As an extension of the Aeronautics Commission, the Division promotes educational activities. The Division will continue to promote a national art competition for elementary students. Occasionally, the Division learns of a young person who is very enthusiastic about aviation and educates them about the opportunities in the aviation field. The Division will continue to educate airport personnel by promoting security measures such as the national hotline for general aviation security. The Division also plans to sponsor aerospace educational seminars in the future.

CHAPTER 6 Non-Motorized Transportation

BICYCLE TRANSPORTATION

In 2002, the Wyoming Transportation Commission adopted WYDOT's first Bicycle and Pedestrian Transportation Plan. The primary goal of this plan is to continue improving the accommodation of bicyclists and pedestrians in Wyoming's transportation system. The goals and action items from the plan are listed below.

- *Improve accommodation of the various types of bicyclists and pedestrians within the existing transportation system.*

In order to accomplish this goal, WYDOT's primary focus for bicyclist accommodation will be to provide and maintain adequate shoulder width for bicyclists on highway reconstruction projects (4 foot minimum clear, paved area). The primary focus for pedestrian accommodation will be to provide continuous ADA compliant sidewalks along both sides of most urban roadways and bridges. On urban roadway projects WYDOT will provide wide outside travel lanes or designated bike lanes where appropriate.

- *Institutionalize consideration of the unique needs of bicyclists and pedestrians in project planning, design, construction and maintenance.*

WYDOT will continue to provide training on bicycle and pedestrian accommodation and proper facility design to WYDOT planners and engineers. The State Bicycle/Pedestrian Coordinator will continue to be included in the project plan review process. The Department will continue to provide technical assistance to Wyoming urban areas in developing bicycle and pedestrian transportation networks to include on-street facilities and pathways.

- *Increase the use of bicycling and walking for transportation in Wyoming.*

In order to accomplish this goal, WYDOT will promote increased bicycle use through promotion of special bicycling events such as Wyoming Bike Month and Bike-to-Work Week. The Department will strive to improve maintenance and sweeping of highway shoulders with priority on designated Bicycle Routes and High Bicycle-use Areas. WYDOT will continue to promote partnerships at the local level with alternative transportation, health, schools and safety groups.



- *Improve safety for those utilizing non-motorized transportation through improved education of bicyclists and motorists and enforcement of vehicle code violations by bicyclists.*

The section of the Wyoming Driver's Manual covering bicycling has been rewritten to better educate motorists on safe travel habits where bicyclists and



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pedestrians are present. WYDOT will work to improve education of motorists regarding the legal status of bicyclists. A “Share the Road” campaign will be developed to improve education of bicyclists and motorists regarding the rules of the road and safe operation in traffic. The Department will work to promote improved enforcement of bicyclist and pedestrian violations and motorist failure to yield right-of-way. WYDOT’s hazard elimination program and Safety Management Committee should include consideration of bicyclist and pedestrian hazards. The Department will work to continue and expand its bicyclist safety education program in Wyoming schools.



Current System Description

Most of the non-interstate rural arterial roadway miles on the SHS currently provide shoulders of desirable width for bicycle travel. By meeting AASHTO design policies, roadway improvements result in an improvement in accommodation of bicycle transportation. Funding is currently available for Transportation Enhancement Activities (TEA), which may include planning and construction of facilities for bicycle transportation.

Observed Trends

The following information is noted as pertaining to the directions emphasized in this plan and providing perspective to the intent of this plan. Roads providing paved shoulders can reduce the rate of accidents and increase utility for all modes of transportation. More than 90 percent of needed urban bicycle facilities are already provided as street networks.

The demand for pathways, desire for exclusive motorist facilities and inadequate education of many bicyclists and motorists has prompted a perception that pathways are the preferred type of bicycle facilities. However, studies estimate the probability of an accident to be about 2.5 times less for bicycling on roadways than for bicycling on pathways or sidewalks.

Four-year statistics for a metro area of 70,000 population show: 45 percent of all bicycle/motor vehicle accidents and 80 percent of wrong-way bicycle/motor vehicle accidents involved pathway or sidewalk

bicycling. The majority of bicycle accidents do not involve a motor vehicle.

Funding Considerations

Reasonable improvement of bicycle transportation service consumes only a relatively small portion of funding resources. Normal roadway improvements benefit bicyclists as well as motorists. In addition, WYDOT may use most categories of federal-aid funds to modify improvement projects to better serve bicyclists and to provide for expanded urban inventory, mapping and planning for bicycle transportation.

PEDESTRIAN TRANSPORTATION

The first Wyoming Bicycle and Pedestrian Plan was adopted by the Wyoming Transportation Commission in 2002. The plan outlines WYDOT’s strategy to integrate consideration of the needs of pedestrians and bicyclists in planning and project development. The plan is intended to provide general principles and guidance for the Department to provide for and improve non-motorized transportation in Wyoming. The Bicycle and Pedestrian Plan also provides guidance for local governments in Wyoming for developing their own bicycle and pedestrian facilities. It is to be considered a component of this Long-Range Transportation Plan.

Current System Description

By meeting AASHTO design policies, street and highway improvements result in an increase in usefulness for pedestrian transportation. Pathway facilities continue to be developed. Funding is currently available for Transportation Enhancement Activities (TEA), which may include planning and construction of facilities for pedestrian transportation.

Observed Trends

Many existing sidewalks lack continuity, especially during winter months when snow is plowed from roadways and stored on them. WYDOT will evaluate a safe routes to school program to improve connectivity of local sidewalks, focusing on those providing access to elementary schools.

Funding Considerations

Reasonable improvement of pedestrian transportation service consumes only a relatively small portion of funding resources. WYDOT may use most categories of federal-aid funds to modify street, bridge and intersection improvement projects to better serve pedestrians, and to provide for expanded urban inventory, mapping and planning for pedestrian transportation.



Objectives

WYDOT incorporates pedestrian considerations into all applicable existing transportation services and implements new services when it is reasonable, necessary and effective to do so. This continuous process includes updating applicable WYDOT policies, standards and procedures to provide for effective pedestrian transportation on streets and highways, facilitating widespread, effective pedestrian education, encouraging pedestrian and motorist awareness of road sharing principles, and assisting in the development of local pathways.

CHAPTER 7 Rail Transportation

Railroads have been an important part of the Wyoming economy since the City of Cheyenne was founded in 1867. The state is currently being served by two Class I railroads: The Union Pacific and the Burlington Northern Sante Fe. Unit trains hauling coal have become a part of the landscape in Wyoming over the past three decades. Railroads are the primary mode of transportation for Wyoming coal and soda ash. In 2002, Wyoming mines produced more than 368 million short tons of coal, most of which is from the Powder River Basin in northeast Wyoming. The vast majority of this production was shipped to coal-fired power plants in other states via rail.

The rail industry has been a substantial part of Wyoming's economic base since before statehood. Railroad employment has contributed to the economic vitality of many Wyoming communities. Currently, this sector employs approximately 3,000 people and provides a significant source of income for the state.

Although WYDOT does not have regulatory authority over railroads, it is in the State's interest to maintain an up-to-date rail plan. An update of the State Rail Plan was completed in 2004. This update will be considered a component of the Statewide Long-range Plan. Even though Amtrak passenger service is no longer provided in Wyoming, the possibility of connecting to passenger rail will be evaluated for Cheyenne. WYDOT will continue to participate in planning for light rail operations along the front range of Colorado.

- *Make available accurate rail information for WYDOT customers.*

This can be accomplished by updating and maintaining the State Rail Plan. The Planning Program maintains an accurate railroad inventory of public crossings. This information is available to the public and should be made available on WYDOT's web site.



- *Continue grade crossing improvement program to improve safety for Wyoming travelers.*
- *Require any new rail crossings of State Highways to be grade-separated.*

Rail crossing safety can be improved by improving the hazard rating system for Wyoming's grade crossings and continuing the Grade Crossing Protection Program as current legislation permits. The Planning Program will evaluate rail carriers' petitions for grade crossing closures. WYDOT should become more proactive during the planning and design phases of projects adjacent to railroad rights-of-way to ensure safety constraints such as adequate storage distances are adhered to.

- *Participate in Colorado Front Range light rail planning activities that might benefit southeast Wyoming.*
- *Evaluate opportunities for intermodal transfer of containers or TOFC in Wyoming.*

Current Rail Issues

WYDOT Planning will keep abreast of important issues related to rail transportation at the state, regional and national levels. Some of the issues are listed below:

- *In the last decade the Wyoming and Colorado Railroad abandoned most of its line from Walden, Colorado, to Laramie, Wyoming.*
- *The Dakota, Minnesota and Eastern (DM&E) Railroad has proposed a new rail line to serve coal mines in the Powder River Basin.*
- *The Burlington Northern Sante Fe Railroad is considering a line extension to the trona mines near Green River.*
- *The Burlington Northern Sante Fe is considering rerouting their line that currently passes through F.E. Warren Air Force Base.*
- *The City of Cheyenne is studying possible locations for a rail-served industrial park.*
- *The Tongue River Railroad, a proposal to build a new coal hauling railroad along the Tongue River from Miles City to Decker, Montana, has construction authority from the federal Surface Transportation Board. At this time it has not yet been built and the issue is currently not active.*
- *Increases in rail freight and increased use of intermodal containers and trailers on flatcars.*
- *Participate with CDOT in developing plans to extend Colorado's light passenger rail system.*

Rails to Trails

- *Support Rails to Trails actions that will preserve railroad rights of way for transportation purposes.*
-



Rails to Trails is a national program working to preserve rail corridors for future transportation use. Local communities initiate and maintain the programs in their areas. The program is eligible for Transportation Enhancement (TE) funding to provide desirable facilities for non-motorized transportation.

Wyoming has four existing Rails to Trails projects. One trail runs from Shoshoni to Riverton along an abandoned Badwater Rail line. Another trail corridor has been preserved from Casper to Edness/Kimball/Wilkins State Park. Glenrock has a Rails to Trails from the local high school to the downtown area. The Ice House Spur Track Railway runs through the city of Rock Springs.

The U.S. Forest Service and a group of citizens from Laramie are studying a section of the abandoned Wyoming and Colorado Railroad from Albany, Wyoming, to the Colorado state line for rail banking and trail use.

CHAPTER 8 Other Transportation Issues

A number of key issues have been raised by the public through the statewide planning public involvement process and internally by WYDOT personnel. This section provides a discussion of these issues and policy direction for WYDOT in addressing the issues over the next few years.

Transportation and Economic Development

- *Maintain adequate transportation facilities connecting all urban areas to regional transportation networks.*
- *Continue the Wyoming Scenic Byway Program as a tool for local or regional tourism promotion.*
- *Continue to fund the Wyoming Industrial Road Program to enable counties to respond to road-building needs, especially access to new economic development sites.*

Discussion of Relevant Research

Economic development has been one of the most important areas of public concern brought out through the TransPlan meetings. Citizens are interested in the possibility of using transportation improvements to foster local or regional economic development. It is generally believed that the impact of highway improvement expenditures on economic development can be substantial. However, research generally indicates that an efficient transportation system, particularly access to a multi-lane facility, is a necessary, but not a sufficient condition for economic development to occur.

The direct contribution of transportation improvement expenditures is positive and significant. WYDOT has developed a model to estimate employment and income effects of transportation spending. According to the



model, every million dollars spent on highway construction generates an estimated 9.6 direct jobs and 7.7 indirect jobs statewide. The same \$1 million in highway construction spending generates a total increase in economic output of \$1.46 million as these dollars are spent, earned by others and spent again through the multiplier process in the State. The impact of transportation improvement spending on economic development is much less certain. Economic development may be defined as a real sustainable increase in community or regional wealth, e.g. more jobs, higher worker incomes and more economic activity.

Transportation improvement expenditures will affect a local economy in two ways. The economy will be impacted directly through the construction expenditures for labor and materials. This additional income will be circulated through the local economy a number of times before they eventually leak out into a larger economy. The secondary desired effect of transportation improvements is that the increased efficiency of the transportation system will spur additional development in the local economy. This impact, while not totally proven, is of great interest to most communities.

Research by Grossman and Levin indicates that good highways alone are a necessary but not a sufficient condition for attracting new industry and retaining existing industry. Eagle and Stephanedes studied the

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causality relationship between highway improvements and economic development. They concluded that increasing spending on highways does not generally lead to employment increases with the exception of temporary effects during construction. However, they also found that in regional economic centers, highway spending may cause long term increases in employment.

The significance of the relationship between highway improvements and economic development has been questioned by Baird and Lipsman. Their research recognized that changes in local and regional economies will be promoted by highway system changes but whether transportation investments cause long-term economic development remains in question. Wilson, et al, have found similar results in investigating the same relationship. They found that while transportation improvements may have important effects on political unity, social cohesion, economic growth, specialization and price stability, precisely opposite effects are equally plausible.

The current body of research is less than conclusive in terms of defining a prescription for transportation improvements that will stimulate economic development. Economic impacts are most likely to be positive where transportation improvements will increase land values and reduce travel time and costs. Economic effects of transportation improvements may be significant in connecting smaller urban areas with larger metropolitan areas. Highway and aviation spending also may have positive long term effects in cities, which are economic centers of the state. In general, the provision of adequately maintained highways with sufficient capacity to minimize congestion will be necessary for Wyoming communities to attract new businesses and to allow existing businesses to grow.

Transportation Improvements Identified in Forecasts

The economic forecasts prepared by the Wyoming Division of Economic Analysis do not identify any remarkable shifts in the economy or demography in the next 10 years. The state's dependence on employment in the mineral industry is expected to continue its gradual decline. However, increases in production of natural gas, coal and trona are expected. Many areas of the state will continue to be dependent on tourism or agriculture.



Intrastate Needs

- *Identify and prepare for the needs of Wyoming's aging population.*

The growing number of the elderly population in Wyoming will increase the level of demand for public transportation services. The number of elderly who no longer drive will particularly impact the demand for transit services and non-motorized facilities. WYDOT's Local Government Assistance Program will determine whether the needs of the elderly and those in poverty are being served by the existing public transportation systems in the state. In addition, pursuit of physical activities to improve health is expected to increase the demand for sidewalks and pathways.

Part of the process of developing an effective intermodal transportation system will be improved access between modes. WYDOT will need to consider the possibility of enhancing the efficiency of the state transportation system by improving terminals and access to intermodal facilities. This would include access to passenger air, rail and bus service.

Interstate Needs

- *Continue to be involved in regional transportation issues and developments.*

Wyoming is an important bridge state for the transport of people and goods (especially east to west). The signing of the North American Free Trade

Wyoming's cities and counties face substantial shortfalls in funding for their roadway infrastructure needs. Although some cities and counties are in a better revenue situation than others, on the whole, city and county maintenance responsibilities exceed their fiscal capabilities. This has frequently led to requests for WYDOT to take county roads onto the State Highway System. The study indicated that revenue shortages were forcing deferral of resurfacing needs. This ultimately results in dramatically increased costs for reconstruction of those roads. Other roads are simply left to deteriorate or are minimally maintained with stop-gap methods.

Due to the economic climate of many urban areas in Wyoming, it is often difficult or impossible for the communities to finance major reconstruction projects. In fact, it is sometimes difficult for them to provide the local matching funds necessary for the use of federal STPU funds. Most of the streets in these communities are quite old and will require major repair or reconstruction during the next 20 years. According to the DeLeuw and Cather report, the needs of municipalities over both short range (5 years) and long range (20 years) exceeded the revenues available under the current tax structure. It is, therefore, important that a funding mechanism is provided for urban areas to meet their future transportation systems needs. As with the small urban areas, the non-urban areas (population less than 5,000) are typically not in a financial position to meet their transportation needs with local funds.

Pipelines

- *WYDOT will continue to work with utilities and pipeline companies to facilitate the installation and expansion of pipelines.*

Pipelines have been an important component of Wyoming's energy transportation system for almost 100 years. The Petroleum Association of Wyoming (PAW) reports that a crude oil pipeline was constructed in 1911 connecting the Salt Creek Oil Field to Casper. According to PAW, 42 companies operate more than 13,000 miles of pipelines in Wyoming. These pipelines carry natural gas, crude oil and refined petroleum products.



Agreement may significantly increase the amount of north to south transportation of people and goods through Wyoming. WYDOT is involved in the Rocky Mountain Trade Corridor and the Western Transportation Trade Network.

WYDOT Planning will continue to be involved in transportation developments along the Front Range of the Rocky Mountains. Access to Denver International Airport will be important to Wyoming's economy. Also, much of Wyoming has strong ties to the Front Range regional economy. WYDOT will participate in planning for northward extension of Colorado's light rail system.

WYDOT will continue to coordinate with neighboring states to maintain efficient interstate movement of people and goods. This existing philosophy regarding highways will be expanded to other modes such as bicycle transportation. WYDOT will take an active role in developing and promoting air, rail, bicycle and public transportation.

Cities and Counties

- *Continue to provide transportation planning assistance to municipalities and counties.*

In 1991, the Joint Transportation and Highways Interim Committee conducted a comprehensive statewide transportation needs study through the consulting firm, DeLeuw, Cather and Company. The study evaluated needs and available funding for the state, counties and municipalities. The results indicated that WYDOT and

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The Wyoming Energy Commission (WEC) has identified the current capacity of interstate take away pipelines as a constraint to the growth of the industry. Lack of sufficient pipeline capacity also has been identified as a factor in the observed price differential of Wyoming natural gas. The WEC has identified potential pipeline expansions to improve the situation for Wyoming natural gas producers. According to the WEC, the Kern River, Southern Trails and Trailblazer pipelines have expansions under construction in 2002 or 2003.

The WEC has proposed the use of pre-planned corridors for pipelines. These would be pre-approved by local, state and federal authorities. WYDOT should continue to work with pipeline companies and utilities wishing to utilize highway right-of-ways to promote economic growth and development of Wyoming's mineral resources.



Need for Public Education

- *Use TransPlan public outreach and involvement to educate the public about important transportation issues.*
- *Use WYDOT's Web site to educate people regarding construction projects and what WYDOT does and why.*

The public should understand important transportation concerns that are facing the state and be informed about the range of possible responses. An educated public will be more likely to support efforts to address problems before they become critical. The public must be made aware of current and potential future problems related to freight transportation, traffic congestion, land access, maintaining mobility, construction cost inflation, funding and other key issues.

Land Use

- *Encourage Wyoming counties to develop land-use plans that require reasonable setbacks from roadways and limit direct access to functionally classified roads and highways.*
-

The independent nature of property owners in Wyoming has generally caused them to seek local land use restrictions only when they fear rapid development more than they dread government usurpation of their property rights. In 1975, the Wyoming Legislature mandated all counties to develop broad land-use plans. Most counties have gone forward from that effort to implement their land-use plan and pass zoning ordinances. However, seven counties have no zoning ordinances. Land use patterns can restrain or induce transportation problems.

Proactive planning in cities, counties and states can anticipate and prevent transportation problems. By studying transportation patterns and guiding new housing and industrial developments, planners can determine solutions to potential problems before they arise. Planning includes the analysis of future transportation needs, funding requirements and a process through which improvements are to be scheduled and completed. This process should include land-use planning.

Planning efforts may identify corridors needed for future transportation facilities. Zoning restrictions can protect these corridors for future transportation use. In addition, zoning can regulate the location and density of population, industrial development and open spaces. Properly implemented zoning can give people a voice in the land-use planning and decision-making process. Adequate setback requirements for new buildings can allow capacity improvements to roadways without the

difficulty of removing structures. Land-use regulations that limit direct access to higher order roadways makes it much easier to maintain mobility on these roadways.

Environment and Planning

The Federal Highway Administration has stated that transportation planning and project development must reflect the desires of communities and take into account the impacts on both the natural and human environments. Transportation projects are closely evaluated to identify how they might impact the community, the natural environment, public health and welfare. WYDOT will begin to identify and evaluate potential social and environmental impact issues early in the project planning process.

Although most of Wyoming has not been plagued with air quality issues, the Environmental Protection Agency designated Sheridan as a non-attainment area for air quality in the mid-1980s as a result of particulate matter. WYDOT is seeking to have this status changed due to the fact that monitoring has shown the community to be in compliance since the mid-1990s. WYDOT will continue to use proper construction practices to avoid, minimize or mitigate environmental impacts.

Preservation of Wyoming's view shed and natural resources will always remain one of WYDOT's goals during the planning and project development processes.

Transportation Research

The WYDOT Research Program seeks to discover innovative, cost-effective solutions to existing transportation problems. A primary area of interest is highway construction and maintenance problems. In this era of decreasing transportation funding, it is becoming more critical to better manage transportation assets, particularly highways. The Research Program enables WYDOT engineers to keep abreast of the latest advances in asphalt composition, concrete, bridges, girders and construction techniques. Some recent research projects have included landslide stabilization; highway base settlement problems; animal/vehicle collision mitigation; and the economic impacts of highway construction on businesses. In the next few years, the Program will seek ways to prevent premature pavement deterioration and extend the service life of highways, improve traveler safety and to limit road closures, particularly those resulting from snow avalanches.

CHAPTER 9 Highway Patrol

MISSION:

The Wyoming Highway Patrol has a twofold mission: 1) To promote safety on State highways through the fair and impartial enforcement of traffic laws and commercial vehicle regulations. 2) To provide efficient and timely response to highway emergencies.

Field Operations

Improving highway safety is paramount to the Patrol. In order to effectively accomplish its mission, the Patrol must have an appropriate level of staff. Management will coordinate with WYDOT Staff to evaluate the need for increased staffing, along with the budgetary issues that result. Long-range planning for Patrol Field Operations will focus on the following goals and objectives to improve highway safety:

■ Reduce motor vehicle crashes by working in the following areas:

- *Reduce alcohol-related crashes.*
- *Increase seat belt use by all drivers, especially Wyoming residents.*
- *Expand presence of troopers on Wyoming highways.*
- *Concentrate additional enforcement in areas experiencing influx of traffic due to oil and gas drilling activities.*
- *Increase activities by troopers to enforce size, weight, and safety violations on commercial vehicles.*
- *Partner with trucking industry to achieve a higher level of compliance with traffic laws for commercial drivers.*
- *Assess the need to reopen the Baggs POE due to increased traffic with oil and gas exploration, drilling and production.*
- *Continue efforts related to criminal interdiction as a result of traffic enforcement activities.*

- *Plan for support and potential growth within drug detection K-9 program.*

■ Increase authorized Patrol staffing level.

- *Collect data on time spent by troopers on calls for service in order to assess shortfalls that may be impacting their ability to fully meet this demand or to engage in other functions requiring their attention.*
- *Review scheduling needs for areas affected by increased traffic. Some areas may require 24-hour coverage.*
- *Provide additional troopers to allow for proactive enforcement and education of the motoring public.*

■ Improve retention of Troopers.

- *Effectively train, develop, and manage new and existing troopers.*
- *Evaluate assignments, scheduling, education, and other field options to develop strategies to optimize our ability to retain troopers, both new and experienced.*
- *Identify primary reasons Troopers leave the Patrol.*
- *Consider potential housing provisions for officers in selected remote areas.*

■ Managing Increased Traffic Flow:

- *Work with WYDOT Engineers and Maintenance to develop strategies to address the inevitable increase in motor vehicle traffic on our roadways.*
- *Develop non-traditional strategies for managing crash scene congestion and other high density traffic situations.*
- *Evaluate the introduction of motorcycles into our current fleet for use in heavy traffic areas and special events.*

Support Services

The **Support Services Operation** provides vital services to the Field Operations Section of the Highway Patrol. This Section includes dispatch center, evidence control and storage, and equipment maintenance. Planning activities of the Support Services Operation will focus on the following issues of concern:

■ **Improve efficiency and technology for Dispatch Section:**

- *Address dispatch manpower concerns related to increase of trooper positions and associated hiring, training and retention issues of existing personnel.*
- *Update equipment to keep pace with growth and technological advances. Existing radio equipment is obsolete, phone system does not support TDD system, recording methods do not support trunked radio system (WYOLINK). Computer hardware and software must remain current to developing law enforcement communication systems.*
- *Obtain adequate space considering security, functionality and ergonomic issues. Existing communications area is not conducive to expansion (WYOLINK Radio system) or situations such as critical incident or emergency management. The development of a new ITS building with housing for patrol dispatch should be a viable option.*

■ **Seek an appropriate level of staffing for Evidence, Equipment and Inventory:**

- *Additional troopers will increase demands for issued equipment, inventory and evidence services.*

■ **Utilize appropriate new technology:**

- *Evaluate options for video tape storage for in-car video systems. Digital video recording systems may resolve some of these issues.*
- *Bar coding systems will become a crucial element for tracking evidence and inventory.*
- *Light bar upgrades for patrol cars will be necessary in the near future.*



- *Implementation of a mobile data system using wireless technology and integrated with the WYOLINK radio system will benefit efficient information transmittal and facilitate a paperless reporting system and records management system.*
- *Building and space needs will be evaluated as the current equipment and evidence facility becomes more congested and additional storage options have been exhausted.*

Commercial Carrier, Ports of Entry and Overweight/Oversize Loads

Commercial Carrier Troopers enforce both state and federal commercial vehicle regulations including inspection of commercial vehicles and their drivers. The Overweight and Oversize Loads Program provides permits and routing for large commercial vehicles.

■ **Goals for this section are listed below:**

- *Continue to develop innovative strategies to address the increased commercial motor vehicle (CMV) traffic and enforcement issues associated with that increase.*
- *Continue to work with FMCSA through the MCSAP grant process to reduce crashes and increase compliance with Federal Motor Carrier Safety and Hazardous Materials Regulations.*
- *Continue compliance review and new entrant safety audit programs.*
- *Develop web-based oversize, overweight, registration and fuel permit programs.*

- *Continue to improve MEET (Mobile Enforcement and Education Team).*
- *Analyze and develop reasonable personnel needs strategies.*
- *Develop a computerized routing program for overweight and oversize loads.*

Safety, Training and Records

The **Safety and Training Section** of the Patrol oversees the training of officers and safety education activities for the public.

■ **The emphasis areas of this Section of the Patrol are listed below:**

- *Develop comprehensive recruiting and training strategies to address increased personnel requirements.*

- *Continue to develop relevant training courses (Desert Snow, Incident Command, Hazardous Materials, Homeland Security, etc.). Utilize and develop relevant technological resources for delivering training.*
- *Develop safety education and public information specialists in each patrol division to administer and coordinate such activities on a local level as opposed to centralized efforts from headquarters.*
- *Continue a proactive role in driver education in the public sector (schools) as well as with those in private industry.*
- *As the Patrol implements the TRACS records management and reporting software, develop and formalize a possible new role for data entry personnel.*

CHAPTER 10 Management Systems

In order to best manage transportation dollars, WYDOT maintains the following Management Systems: Bridge, Pavement and Highway Safety.

The Management Systems focus on data collection and analysis. WYDOT will continue to evaluate the effectiveness of its Management Systems and to develop improvement strategies. Outputs from these Management Systems will be useful in transportation improvement programming decisions. The information provided by these systems will be incorporated into the needs analysis and priority rating system used to program transportation dollars throughout the state.

The purpose of this chapter is to provide a summary of each Management System. These summaries will review what has been considered at this point in time. If more detailed information is needed about a particular system, contact WYDOT.

BRIDGE MANAGEMENT SYSTEM

Purpose

The purpose of the Bridge Management System (BMS) is to maintain a comprehensive inventory and historic condition assessment of the on- and off-system bridges in the state. The BMS aids in assessing the infrastructure and maximizing the use of funds to maintain those structures in acceptable condition and rehabilitate or replace those deficient structures.

Database

The database of the BMS is centered around AASHTO's PONTIS bridge management software. This Oracle database includes all structures in the state that are located on or over state, city and county owned and maintained roads that are opened to public travel. The condition of each bridge element, the required National Bridge Inventory data, as well as the Wyoming specific inventory and project related data are included in the database. Various scenarios can be executed as a decision support tool to facilitate achieving the BMS's goals and objectives.



Goals

The goal of the BMS is to assist the bridge program manager in assessing the condition, prioritizing the replacement and rehabilitation and developing a multi-year plan to reduce the number of deficient on- and off-system bridges in Wyoming using available funding in the most efficient and cost effective manner.

Objectives

- *Preserve the state-owned highway bridges and structures by ensuring that at least 83 percent of those structures on the National Highway System and at least 80 percent of the structures off the National Highway System are maintained in acceptable condition based upon the structure's sufficiency rating.*
- *Improve the transportation infrastructure by identifying bridge replacement and rehabilitation candidates, prioritizing these candidates and facilitating the scheduling of these projects to most effectively utilize the available bridge replacement funds.*
- *Assist local agencies in improving the condition of their bridge inventories by identifying bridge replacement candidates and aiding in prioritizing and facilitating the scheduling of the replacement projects to most effectively utilize the available off-system bridge replacement funds.*

PAVEMENT MANAGEMENT SYSTEM

Purpose

The purpose of the Pavement Management System (PMS) is to manage the data and processes necessary for pavement condition analysis, pavement performance tracking, pavement design input and network maintenance management.

- *Continue to refine and improve the data collected and the availability of data from the PMS.*

Management

WYDOT's PMS is managed by the Materials Program. The PMS database is housed in Oracle and is managed by the PMS engineer. Data is supplied by contract, in-house sources and other WYDOT programs such as Planning and Programming.

Outputs

A project-level report is published annually. This report summarizes much of the analysis focused on project selection and strategy recommendation. It is used by WYDOT District staff as input to the project prioritization process, to organize sealing priorities, to verify current conditions and to identify pavement safety concerns. It also serves as a tool to aid in development of the STIP.

Network-level analyses also may be conducted. Network-level analysis summaries have been made available to WYDOT Management Services as input to the "Wyoming Transportation Facts" booklet. Special network-level studies also have been completed for the WYDOT Executive Staff for legislative input.

Information collected in support of the PMS also is submitted annually to the national HPMS for nationwide performance statistics. Other outputs are specialized for input to the pavement design process and for long-term performance statistics.

SAFETY MANAGEMENT SYSTEM

The Highway Safety Program promotes the safe use of all Wyoming roadways. Basic program responsibilities are to reduce crash rates, including fatality, injury and property damage only crashes, through engineering,



enforcement and education and training programs. Highway safety maintains statewide traffic crash records, evaluates relative crash rates and develops procedures to reduce crash rates. Additionally, the WYDOT Safety Program administers the Federal Section 402 State and Community grant funds and maintains the Wyoming Motorcycle Safety Program.

Highway Safety maintains the Wyoming Accident Records System, a statewide crash database and the infrastructure used to disseminate data from this database. Included in this database is a record of various factors of all crashes resulting in property damage valued at more than \$1,000, injury crashes and fatal crashes. Using the Wyoming Accident Records System, Highway Safety generates and distributes:

- The annual "Wyoming Comprehensive Report on Traffic Crashes,"
- An annual report of travel and crash summaries for Highway Performance Monitor System (HPMS),
- Annual Crash Concentration reports,
- The "Annual Highway Safety Report" for the FHWA,
- Fatal notifications and monthly statistical reports to other WYDOT programs and the Highway Patrol,
- Annual crash summaries to each county within Wyoming,
- Summarizing reports of all crashes on roadways by WYDOT district,
- Daily recaps of fatalities and fatal crashes,
- The "Monthly Motor Vehicle Traffic Death Report" to the National Safety Council,
- Annual evaluations of federally funded traffic safety programs and,
- The "Wyoming Safety Reporter" newsletter.

Problem Definition

A SMS begins with a thorough understanding of the crash problem and the associated characteristics of the driver, vehicle and highway. The Wyoming crash data system contains large amounts of information but is not sufficient to totally define the characteristics of crash problems required to develop solutions. Roadway, pavement and bridge management systems; highway data systems; driver license systems; vehicle data systems; and emergency medical services data systems also provide information. Integrating these data systems facilitates crash problem understanding and the development of solutions.

In addition police officers, emergency care providers and highway maintenance workers, who have been at the scene of many similar types of crashes, may be able to provide additional insight. For example, police officers who have investigated many pedestrian accidents on the interstate system can provide valuable information from first hand experience why the pedestrian was on the interstate and what the pedestrian was attempting to do. This may lead to the development of specific education or enforcement strategies to reduce future occurrence as someone who was in an accident would have a unique perspective of what happened.

In conclusion, a number of sources should be used so crash characteristics within the state are well understood and problems adequately defined. The SMS needs to address the following key areas:

- *What data is needed for specific crash characteristics?*
- *Why is the data needed and what will it be used for?*
- *Is the data available?*
- *If the data is not available, should initiatives be taken to enhance the systems to obtain the data sometime in the future?*
- *If the data is available, who will furnish it and where will the data go?*

Evaluation

It is critical that a solid evaluation design be incorporated into the SMS plan at the outset. This design will consider baseline and operational data, responsibility, a collection and analysis process and how and by whom the evaluation results will be used in future planning.

A key question that needs addressed is, “Is the solution or strategy producing the desired results?”.



Highway Safety also provides specific reports to state, corporate and private parties, as well as maintaining Wyoming’s pertinent data in the Federal Fatal Analysis Database. These specific reports can detail crash analysis by: highway system, section and route sign, functional class, federal number, reference marker, street name, state plane coordinates and intersection analysis. Highway Safety completed an upgrade of its database in 2003. Using this update, the program will generate a GIS system that will enhance WYDOT’s ability to generate crash data from the Wyoming Accident Records System and disseminate it for analysis of Wyoming crashes.

Purpose

The purpose of the Safety Management System (SMS) is to reduce the numbers of traffic crashes, deaths, injuries, and resulting property damage on all public roads. Appropriate federal agencies are responsible for federally owned public roads.

Goals

- *Identify opportunities to improve highway safety within the highway program.*
- *Collect, maintain and disseminate data necessary to implement effective highway safety strategies, projects and programs.*
- *Identify the safety needs of special users groups, such as older drivers, pedestrians, bicyclists, motorcyclists, commercial motor carriers, in the planning, design, construction and operation of the highway system.*
- *Identify, investigate and eliminate any hazardous or potentially hazardous highway safety conditions.*

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Often, the desired results are expressed in terms of reduced crash occurrence using before and after comparisons. This type of evaluation is somewhat easy to perform but often leads to misinterpretation due to small sample size and the effect of other independent variables not relevant to the solution or strategy that are primarily responsible for the crash. As an alternative, the measurement of desired results may be obtained by other means. As an example, does a pedestrian safety education program in elementary school result in safer crossing behavior? Evaluating the proportion of children who stop at the curb, look left, right and left before crossing can result in an assessment of effectiveness of the education effort. Results could be used to restructure the education program. Similarly, Driving Under the Influence (DUI) enforcement program could be evaluated by using focus groups of young male drinking adults to determine if the additional hours of enforcement are affecting drinking and driving habits and, if not, why not. Results could be used to improve the way in which DUI programs are deployed.

Ideally, the evaluation phase should produce results that not only determine whether the solution or strategy should be further pursued but also what enhancements to the solution and strategy will make it more effective.

Solutions and Strategies

Identified crash concerns are compared with identified opportunities to establish lists of possible

solutions and strategies. Ideally, the result of this process is a set of solutions and strategies that address each major crash concern with cost-effective solutions and strategies.

Implementation

The implementation plan will be a flexible document subject to change based upon unforeseen events and new information. A monitoring system will be established that will require each implementing agency to report implementation progress and/or problems to the lead agency at agreed upon intervals. A specified format will retain uniformity between all organizations. The SMS committee will publish overall progress reports. The SMS committee will establish a periodic meeting schedule after the implementation plan is set into motion to discuss relevant issues not identified in the initial process. The SMS committee also will establish a time frame in which the entire process should be completely undertaken again.

Funding

A primary focus of the SMS is to coordinate existing highway safety activities within the state by incorporating better planning of the human and fiscal resources. Some additional data must be collected but it is anticipated that a minimal amount of additional funds will be required to implement the SMS under the existing constraints and guidelines.

CHAPTER 11 State Transportation Improvement Program

Goal

- *Evaluate the future requirements of Wyoming's transportation system. Utilize the resources available to achieve a safe, high quality, and efficient transportation system.*

Process

For about the last 25 years, WYDOT has used a “Needs Analysis and Priority Rating Process” that has attempted to achieve the above goal. This process requires input and cooperation from programs throughout the Department and input from the public. The following paragraphs will describe the existing process. That explanation will be followed by a brief description of proposed improvements to this process.

The Wyoming Highway Department was reorganized into the Wyoming Department of Transportation in 1991. Prior to that time, the entire focus of the organization was on highways. Even today a great deal of the focus is on highways and this will probably remain so into the future. A description of our existing process will therefore be focused on how highway-related problems and questions are addressed.

Existing System

Understandably, the greatest needs on our highway system are improvements to the facilities that are already in place and serving the motoring public. Many roads were built 40 and more years ago and have become functionally obsolete. Pavements and bridges wear out due to use and the effects of time. As the economy expands, traffic grows, land use changes and the vehicles utilizing the road change. Trucks are heavier and more plentiful while, many more passenger vehicles are on the road today as well. People's perception of an acceptable



highway and what they will tolerate also has changed. Improving and maintaining roads already on the State Highway System now consumes the majority of available funding.

Programming maintains a database with information concerning all roads on the State Highway System. The data includes horizontal and vertical curvature; pavement and shoulder widths; age; structure width, length and type; traffic; etc. Most of this information comes from plans utilized for construction. WYDOT maintains a list of “tolerable controls.” These controls are dimensions and attributes (design elements) that WYDOT believes the motoring public would prefer to tolerate rather than spend money to improve.

WYDOT performs data analyses that compare existing dimensions and attributes to tolerable controls. If the particular road section has a particular element not meeting the tolerable control for that element then the road section is identified as having a present need for improvement. Today there are hundreds of road sections representing billions of dollars in needed construction funding. Of course, not all can be improved in any one year. Therefore, a priority rating process was devised to provide an objective means of “doing first things first.”

In contrast to the tolerable controls, updated criteria,

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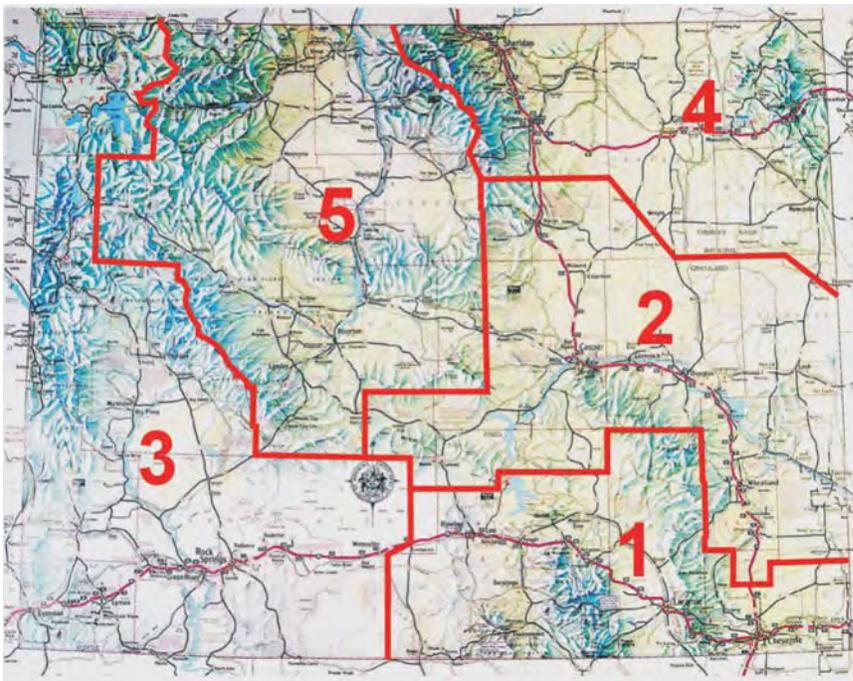
referred to as “design standards” are used when designing and constructing new roads. A road meeting design standards is much wider, straighter, smoother and safer than one barely meeting tolerable standards.

Every autumn, staff from WYDOT Programming take the lists of needs and priorities to each of the five operations district offices in Wyoming. A section by section review is conducted of each road section. Input is reviewed from WYDOT districts, Highway Safety, Bridge, Materials, and the public. This review often reveals information that was previously unknown to the programming staff and results in some changes to the list of needs and priorities.

At least one public meeting will be held in each district to provide an opportunity for local officials to provide input into the programming process. Meetings will concentrate on planning issues, programmed projects, funding programs and other district-wide issues of interest to local elected officials within the district. At these meetings, programming staff will give an overview of the STIP development process. District staff will provide a summary of the projects planned for construction in their district. Local elected officials will be given the opportunity to provide information regarding local projects that should be coordinated with projects in the STIP and to provide input to the STIP. Input from local officials is considered along with

information from WYDOT management systems, the needs analysis process, input from other agencies and other relevant information. The consultation meetings will precede adoption of the STIP by the Transportation Commission. At this point the list of “Needs and Priorities” is finalized for that year and revisions of the Statewide Transportation Improvement Program (STIP) are made.

STIP development is the process of matching high priority needs with anticipated funding. The various Federal-Aid and state funding sources must be evaluated for each project during the development phase. Certain funds must be spent on the interstates, others must be spent on rural highways, others on enhancements, safety, maintenance, etc. Other areas within the Department also submit requests for funding. These include requests for maintenance pavement overlays, bridge replacement, rail crossing protection etc. These requests are reviewed along with the “Needs and Priority Rating” list and decisions matching projects to funding sources are made. In early April, a Draft-State Transportation Improvement Program is issued. This draft-STIP includes projects to be constructed in the following fiscal year as well as preliminary engineering for projects to be constructed from one to six years later. Some projects due to their unique nature are included for Preliminary Engineering (P.E.) even though their



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anticipated construction year is even more than six years away. Shortly after the draft-STIP is produced Highway Development meetings are held. The draft STIP also will be posted on the WYDOT Web site for public review and comment.

The Highway Development meetings bring together personnel from the District staff, Programming, the FHWA, roadway designers etc. At this time the proposed STIP is thoroughly reviewed as to type of work, schedule of work, estimated cost, etc. At the conclusion of these meetings, another draft-STIP is produced and presented to WYDOT's Executive Staff for review.

Between the time of the Highway Development meetings and the time the final STIP is presented to the Wyoming Transportation Commission, projects relating to county roads, city streets, transit, airports, enhancements and others are requested, evaluated and possibly included in the STIP. In September, the final STIP is presented to the Transportation Commission for their review and approval. Approval also must be obtained from both the Federal Highway Administration and the Federal Transit Administration. Once these approvals have been obtained, Program Study Reports are issued along with the Authority for Expenditure (AFE) that authorizes money to be spent on a project (Type "1" P.E.).

The new public involvement policy and local consultation process will allow more review and involvement by the public and local elected officials. The STIP will be available for review on the WYDOT web site allowing the public to send comments via e-mailed or postal service. GIS applications will allow the needs review process to utilize current asset management trends. District offices will remain one of the most important points of public contact as per Department Operating Policy 17-8.

Type "1" P.E. is the preliminary engineering phase where a more intensive examination of the project is conducted than was previously done within the Needs Analysis process. This examination is jointly conducted by field and design engineers and is basically a final determination as to what the recommended improvement should be. A "Reconnaissance Inspection" report is then written and distributed. This reconnaissance report is utilized by personnel within Programming for the writing of a "Scope Statement." The Scope Statement is

a document describing the limits of the improvement, recommended improvement type, recommended changes to the Program Study Report, anticipated traffic and cost. The Scope Statement is sent to the Executive Staff for their review and approval. The scope is then issued along with the AFE for Type "2" P.E. Type "2" P.E. is the preliminary design phase where all the work necessary to get the project ready for bid letting and construction is performed.

The Needs Analysis and Priority Rating phase is where decisions are made to make facility improvements and approximately what should be done. The Type "1" P.E. phase is a more detailed examination of what the project should include. The Type "2" P.E. phase is when project design begins and work on the project is completed in preparation for contract award and construction. This process provides opportunity for many interested parties to review, comment and influence the decision as to what is to be accomplished, through public meetings, various agency inputs, economic analysis, etc.

Future System

All systems and processes of course can and should be improved. Technology changes allow refinements that earlier were not possible. Emphasis areas change. Weaknesses are discovered, such as planning the future system. Reorganizing from a highway department to a transportation department mandated that more attention be given to all modes of travel, in addition to motor vehicles. For Wyoming, there are definite emphases on pavements, bridges and safety.

In the area of pavements, the Materials Program has contracted with a private firm to automatically gather pavement data while traveling at highway speed. The Materials Program also has done extensive work with a piece of equipment called the "Falling Weight Deflectometer" that has the ability to measure the strength of the existing surface. In addition, the Program has been compiling this data into models wherein predictions and recommendations for pavement improvements are now being made. Information from this Pavement Management System is now being utilized, as one of the criteria for determining needed improvements during the Needs Analysis and Priority Rating process.

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There are very few bridges on the State Highway System that are now in a condition that warrants replacement based on structural condition alone. Therefore, the Bridge Management System (BMS) provides more direction in regard to bridge maintenance than it does to replacement. Timely maintenance of bridges however, has potential for huge savings in construction funds. The BMS also provides much better information than what was previously available regarding bridge maintenance requirements. This provides guidance as to the needed level of funding and the potential for savings of construction funding.

In comparison to other states, Wyoming has few accidents and even fewer deaths due to accidents. Safety on highways is a high priority for WYDOT. The design standards employed have been adopted because of a commitment to safety. In spite of the best efforts and intentions, certain areas are identified as having a high accident history or potential. When these areas are identified and improvements can be made, those improvements are and will be completed as expeditiously as possible. The Safety Management System (SMS) should provide better and more timely information than what has been available in the past. With that information, the Needs Analysis and Priority Rating process will be even more influenced by safety than before.

Many miles of roadway remain on the state system that are deficient in width, curvature, pavement type, shoulder width, etc. To do its job properly, WYDOT must weigh all these competing needs against each other, establish appropriate funding levels for each highway functional classification and treat each of them equitably.

A new concept of bringing all the different management system inputs into an overall management hierarchy is Asset Management. WYDOT has embarked on the path toward Transportation Asset Management through its adoption of Enterprise Resource Planning (ERP). New tools are being implemented that can integrate all the inputs and allow WYDOT to greatly enhance its decision-making processes. From participating in the National Asset Management effort, to incorporating elements of Asset Management that fit Wyoming, WYDOT has become proactive in utilizing limited resources to gain the highest possible return on investment.

In the past, society has always looked to our highways for solutions to almost any surface transportation problem. Perhaps solutions can be found in other ways. Will a better bus or passenger train system alleviate the need for highway expenditure? Are those systems economical? Can bikes be utilized rather than autos? Can air travel economically reduce surface travel? Will Wyoming be faced with congestion and air pollution problems? The answers are continually being formulated as additional information becomes available. How will these issues affect the programming process? The complete answer is not known at the present, but these issues will significantly impact the programming process in coming decades.

The programming process will change. Management systems will contribute to the change. ERP will provide new information and allow for new types of statewide analysis to be done. New information and analysis tools will undoubtedly lead to improvements in the Needs Analysis and Priority Rating process.

CHAPTER 12 Public Transit

WYDOT’s Local Government Coordination (LGC), Public Transit Section administers a variety of Federal and State funding programs for local transit programs operating in all twenty-three (23) Wyoming counties. Local matching funds are combined with federal and state funds to finance operating, administrative, capital, technical assistance and training costs. The Wyoming Transit Association (WYTRANS) partners with WYDOT to provide driver and driver-support training for such topics as: passenger service and safety training; drug and alcohol testing; CPR; defensive driving; blood-borne pathogen detection and cleanup; first aid; hazmat awareness; transit security; and fire/collision evacuation.



Current Transit Issues

- *Maintain transit mobility for the transportation disadvantaged.*

Wyoming’s rural population density presents challenges for those with limited private transportation choices or special transportation needs. Transit service providers recognize these needs and attempt to address them in spite of limited resources. Training and equipment to meet these special needs will remain a priority at the state and local levels. Continued support of transit services which connect rural residents with facilities and services available in larger communities is essential to maintain quality of life. WYDOT should continue to support transit services that provide access to social and health services and medical care.

The Transit Program will provide assistance to local providers to improve efficiency, expand services and maximize available resources. This will be accomplished through a coordinated approach to reducing costs and improving trip efficiencies. Through generating new revenues and consolidating trip types, transit service can preserve independence and enhance quality of life for a wider spectrum of transit clients. Costs associated with transit services continue to rise. These include insurance,

driver salaries and benefits, fuel, vehicles and maintenance. Often local transit providers are faced with the difficult dilemma of cutting services and/or service schedules, in spite of increasing demand.

Several Wyoming transit providers have initiated intelligent transportation systems (ITS) into their programs. Examples of these ITS applications are digital dispatching and computerized scheduling of rides. Many other ITS applications are being implemented around the country which could enhance Wyoming transit programs. Such ITS applications as GPS vehicle tracking and smart card fare collection systems offer promise of improved efficiencies. The Transit Program will work with local transit providers to determine when application of these technologies may be appropriate and cost-effective.

Long Term Transit Issues

- *Evaluate the proper role for WYDOT in intercity transit.*

WYDOT will have to determine its proper role in ensuring that intercity bus service is available for the transportation disadvantaged in Wyoming. The Transit

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Program will provide support and advocacy for inter-city transit service. As the Wyoming population ages, the demand for public transportation connections between rural areas and services provided in urban areas will only increase. The elderly will require access to health care services and facilities, shopping, cultural activities and social services.

- *Serve as a source of information for transit providers.*
-

The WYDOT Transit Program will monitor transit level of service guidelines, costs and available revenues from Federal, State and Local sources. The Program will provide data and estimates to transit advocacy groups which predict the anticipated “real-world” conditions facing Wyoming transit providers.

The Transit Program will serve as a clearinghouse for ITS advancements for proven technologies that enhance the efficiency of local transit functions. Advise transit providers of new approaches and proven ITS technologies that assist in the delivery of services.

- *Evaluate opportunities to expand transit services.*
-

The Transit Program will assess opportunities to coordinate local transit services with public transportation service efforts in nearby state parks and national parks. Examples might include: Yellowstone National Park, Devil’s Tower National Park, Hot Springs State Park, Ft. Laramie National Historic Site, and Grand Teton National Park.

Participate in multi-state planning studies to improve and expand service by connecting Wyoming transit service with transit and transit-related services in adjoining states. Examples might include: Colorado Front Range and SE Wyoming commuter services, Utah Wasatch Front and SW Wyoming commuter service, Eastern Idaho and Teton County commuter service, Southern Montana and Big Horn Basin/Sheridan-Buffalo commuter service, South Dakota Black Hills and NE Wyoming commuter service, Western Nebraska and SE Wyoming commuter service.

- *Communicate the economic development benefits of public transit.*
-

Support local, regional and statewide public transit efforts to augment community development and business-ready programs. Transit services can sometimes enhance travel and tourism campaigns as well. Small business, major employment centers, employees and tourists could benefit from a viable Wyoming transit system.

Local Government Assistance Programs

The following WYDOT programs are administered through the LGC Office. WYDOT should continue to provide assistance to Wyoming local governments through these programs.

Industrial Road Program (IRP)

IRP was created by the Wyoming Legislature in 1951 and has been amended numerous times since then to reflect changing needs. The program intent is to provide state funding to supplement private industrial funding for construction of roadways serving industrial facilities. Such operating facilities benefit the state, county and affected communities as sources of employment, tax revenue and property valuation.

State funding provided under this program must be matched at a minimum rate of 50 percent from local sources. Federal and state roadway funds are not eligible IRP match funding. County Road Construction Funds (RCF) that lose their identity as state funds when transferred to the county, are an eligible IRP match. The following changes to the IRP Program should be considered:

- *Expand eligibility for the program to municipalities.*
 - *Consider allowing other road funds to be used for the local match.*
 - *Increase the limit of \$1 million per county per biennium.*
-

Bridge Replacement Off System (BROS)

BROS is part of the federally funded Highway Bridge Replacement and Rehabilitation Program to reduce the number of deficient off system bridges with the state. This program applies to bridges under the jurisdiction of a public authority, located on a non-Federal-Aid roadway and open to the public. This includes most city and county owned bridges meeting the qualifications shown below.

An eligible, deficient bridge is defined as a structure that has a sufficiency rating of 80 or less, is classified as structurally deficient or functionally obsolete and appears on the FHWA's Selection List. All eligible bridges having a sufficiency rating of 80 or less can be considered for rehabilitation if that agency has no bridges that qualify for replacement funds and the resulting structure will have an extended service life and meet the minimum design criteria. Those eligible bridges having a sufficiency rating of less than 50 qualify for replacement funding.

Funding for BROS projects is based on an 80 percent federal share and 20 percent state or local share. Counties may use their RCF as the local match share.

Off-system Enhancement Projects (TEAL)

- *Continue to provide local facilities through the TEAL Program.*
-

WYDOT has been involved with the federally funded Transportation Enhancement Program since 1993. Funding goes directly to local sponsors responsible for the management of each project. The Wyoming Transportation Enhancement Program has been fashioned into two separate categories: Transportation Enhancement Activities - State (TEAS) - those located on or adjacent to the State Highway System (SHS) and the Transportation Enhancement Activities - Local - (TEAL) for those projects that are sponsored by local entities and generally located off or away from the SHS. WYDOT should consider changing the TEAL Program to allow larger projects that would create positive community impacts.

CHAPTER 13 Environmental Compliance

ENVIRONMENTAL COMPLIANCE

- *Continue to comply with environmental laws and rules through the Environmental Services Program.*

WYDOT strives to be a good steward of the human and natural environment. Responsibility for environmental protection is distributed throughout the Department. Planning, design, construction, maintenance, patrol, facilities maintenance and support functions all have a role in complying with environmental laws and rules.

The Environmental Services Section assists in ensuring that WYDOT’s transportation processes comply with environmental laws and mandates. The Environmental Services Section provides services in six major areas:

- *Compliance with the National Environmental Policy Act*
- *Cultural Resource Protection*
- *Wetlands and Water Quality Protection*
- *Endangered Species and Biological Resources Protection*
- *Reclamation*
- *Air Quality*

In many instances the lead role for complying with an environmental objective resides with sections other than Environmental Services. For example, construction management functions have the lead role in assuring that measures to mitigate effects to the environment contained in project plans are carried out; maintenance functions have the lead role in treatment of noxious weeds; facilities maintenance functions have the lead role in assuring that waste water and other point source discharges from WYDOT facilities are properly permitted; human resource support functions have a lead role in compliance with WYDOT’s Title VI Plan. For



areas where Environmental Services has applicable expertise, technical assistance is provided to other sections in meeting their environmental protection objectives.

Similarly public involvement responsibility is distributed throughout the Department, with District Public Involvement Specialists and Public Affairs having a lead role. Environmental Services has a major role with involving the public in the development of environmental documents.

Compliance with the National Environmental Policy Act

Environment Services prepares the prescribed documentation to demonstrate compliance of proposed WYDOT projects with the National Environmental Policy Act (NEPA). The NEPA document is used as a “umbrella” document to demonstrate how WYDOT will address a host of environmental laws, mandates and public concerns. Because of the array of issues to be addressed, NEPA documents can become complex and cumbersome. A national effort to streamline the environmental process so that environmental protection can be achieved more effectively and efficiently is developing through legislative modifications, executive branch directives and AASHTO initiatives.

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Environmental Services will be monitoring these initiatives and taking advantage of those efficiencies that can be best applied to WYDOT's processes.

Cultural Resources Protection

Prior to construction, WYDOT Environmental Services ensures that surveys for cultural resources are conducted. Upon discovery of cultural resources, appropriate mitigation strategies are developed in consultation with the State Historic Preservation Officer (SHPO) to ensure protection of the resource. Furthermore, WYDOT Environmental Services consults with Tribal Governments regarding the protection of cultural resources on behalf of the FHWA. All data derived from WYDOT cultural resources surveys are incorporated into the SHPO Geographic Information System to assist with future cultural resource investigations.

These activities are primarily to insure compliance with the Archeological and Historic Preservation Act. WYDOT Environmental Services also instigates provision to comply with other cultural resource protection mandates. Most recently an effort to expand training of Environmental Services staff and field engineers on the provision of the Archeological Resources Protection Act has begun.

Wetlands and Water Quality Protection

Protection of Wetlands and Water Quality is established under the Clean Water Act. WYDOT Environmental Services delineates wetlands within project corridors prior to design so that the Department can take steps to avoid and minimize impacts to the wetlands. Compensatory wetland mitigation sites are developed for wetland impacts which cannot be avoided. Prior to construction and placement of fill in jurisdictional wetlands, WYDOT Environmental Services secures the necessary Section 404 Permit from the US Army Corps of Engineers, as well as Section 401 Water Quality Certification. To assist in wetland mitigation efforts WYDOT Environmental Services will continue to explore wetland banking systems. Protocols for wetland banks have been so cumbersome

as to preclude their use in the past but may prove more promising in the future.

Endangered Species and Biological Resources Protection

WYDOT Environmental Services arranges for the necessary biological assessments of proposed construction projects and with the FHWA consults with the United States Fish and Wildlife Services in order to comply with the Endangered Species Act. As an aid to this process Environmental Services has compiled range maps of where habitat for each endangered species occurs in Wyoming. These maps are periodically updated to reflect new listing of endangered species. Environmental Services plans to integrate the endangered species habitat maps into a GIS to facilitate their use in planning procedures.

In addition, WYDOT Environmental Services facilitates protection of other biological resources on WYDOT projects under a variety of different mandates, such as the Migratory Bird Treaty Act. WYDOT also consults with the Wyoming Game and Fish Department on construction projects, and where practical takes steps to protect the state's wildlife resources. The fragmentation of wildlife movement corridors by transportation facilities has recently become an area of increasing concern as evidenced from agency, advocacy group and public comment. WYDOT has recently supported limited research to better define wildlife movement corridors. In the future, efforts will continue to better define this issue and develop practical and effective mitigation strategies.

Reclamation

WYDOT has a long history of successfully revegetating right-of-ways following construction. Successful reclamation provides for a visually pleasing transportation corridor, as well as reducing erosion, sediment and pollution discharge, and reducing spread of noxious weeds. WYDOT Environmental Services prescribes the materials and procedures to be used in reclaiming the right-of-ways. WYDOT Environmental Services also provides technical assistance to the design and field engineers in the development and

implementation of Storm Water Pollution Prevention Plans in compliance with the National Pollutant Discharge Elimination System implemented under the Clean Water Act. In the future, WYDOT Environmental Services will continue to monitor and apply advancements in the propagation of plants well suited to highway rights-of-ways.

Air Quality

Air quality is perhaps the most dynamic environmental factor dealt with by Environmental Services, through assistance of a WYDOT planner.

Currently, Ozone, Volatile Organic Compounds (VOC), Oxides of Nitrogen (NOx), Particulate Matter and Carbon Monoxide (CO) are monitored for their effects on air quality. With the upcoming implementation of new Particulate Matter and Ozone Standards, the duties of WYDOT to control emissions on job sites grows more and more important. There are currently plans to initiate long-term studies and monitoring standards statewide to control the impact of WYDOT activities to Wyoming's air quality. Environmental Services coordinates with the Wyoming Department of Environmental Quality on these issues.



GLOSSARY

AADT Annual Average Daily Traffic. Traffic counts adjusted for seasonal variation, truck axles, etc. to represent vehicle counts for an annual average weekday.

AASHTO American Association of State Highway and Transportation Officials. The national association of state transportation department officials which develops model policies and standards for transportation facilities.

ADA The Americans with Disabilities Act of 1990. This Act mandates major changes in building codes, transportation and hiring practices to prevent discrimination against persons with disabilities, not just in projects involving federal dollars, but in all new public places, conveyances and employers.

ADT Average Daily Traffic. The average 24-hour volume, being total volume during a stated period divided by the number of days in that period.

AFE Authorization for Expenditure.

BIA Bureau of Indian Affairs.

BLM Bureau of Land Management.

BMS Bridge Management System.

CMAQ Congestion Mitigation and Air Quality. A new Federal program within ISTEA created to deal with traffic congestion and transportation-related air pollution.

CMS Congestion Management System.

DOT Department of Transportation. A cabinet-level federal agency responsible for the planning, safety and system technology development of national transportation, including highways, mass transit, aircraft and ports.

EIS Environmental Impact Statement.

EPA Environmental Protection Agency.

FAA Federal Aviation Administration.

FBO Fixed Based Operator. This is the primary aviation service provider at an airport, usually a private enterprise.

GLOSSARY

- FHWA** Federal Highway Administration. The agency of the U.S. DOT with jurisdiction over highways. It assists states in constructing highway and roads and provides financial aid at the local level.
- FRA** Federal Railroad Administration. A component of the U.S. DOT established to coordinate government activities related to the railroad industry.
- FTA** Federal Transit Administration. The agency of the U.S. DOT with jurisdiction over transit.
- FY** Fiscal Year.
- GIS** Geographic Information System. A computerized database in which information is stored and retrieved based on geographic coordinates.
- HOV** High Occupancy Vehicle, e.g., carpool or bus.
- HPMS** Highway Performance Monitoring system.
- ISTEA** Intermodal Surface Transportation Efficiency Act of 1991. The transportation bill which provides authorization for highways, highway safety and mass transit through FY 1997.
- LOS** Level of Service. A term which denotes the operating condition that may occur on a roadway. LOS “A” denotes a free flow condition. Level “F” denotes severe congestion.
- LRP** Long Range Plan. A 20-year forecast plan required at both the metropolitan and state levels.
- MPO** Metropolitan Planning Organization. The agency designated by the Governor to administer the federally required transportation planning process in a metropolitan area. The two metropolitan areas in Wyoming are Cheyenne and Casper.
- MTIP** Metropolitan Transportation Improvement Program. The official work program for the Metropolitan Planning Organization. See STIP.
- NEPA** National Environmental Policy Act. A comprehensive federal law that requires analysis of environmental impacts of federal actions and requires the preparation of environmental impact statements for federal actions which are anticipated to have significant impacts on the environment.

GLOSSARY

NHS National Highway System. An interconnected system of principal arterial routes that will serve major population centers, international border crossings, ports, airports, public transportation facilities and other intermodal transportation facilities; meet national defense requirements; and serve interstate and interregional travel.

NTSB National Transportation Safety Board. An independent federal agency whose responsibilities include investigating transportation accidents and conducting studies and making recommendations on transportation safety measures and practices to government agencies, the transportation industry and others.

OPEC Organization of Petroleum Exporting Countries.

P.E. Preliminary Engineering.

P L Metropolitan planning funds.

PMS Pavement Management System.

PTMS Public Transportation Management System.

RTAP Rural Transportation Assistance Program. A Rural transit program through which grants and contracts are given for research, technical assistance, training and related support services.

SC-CFM State County-County Farm to Market. The State of Wyoming program administered by the WYDOT which provides partial funding for the construction of farm-or mine-to market roads or other important rural connecting roads.

SHS State Highway System.

SIP State Implementation Plan. State plan to meet the standards of the Clean Air Amendments Act (CAAA).

SLRP Statewide Long-Range Plan. See LRP.

SMS Safety Management System.

SOV Single-Occupant-Vehicle.

STIP State Transportation Improvement Program. The official work plan of the WYDOT showing transportation improvement projects for a specified period of time. The program separates projects by mode, and sequences projects by system. It also shows the locations, type of work and estimated costs for each project.

GLOSSARY

STP Surface Transportation Program. This Program replaces the former highway construction programs with a new flexible block grant program. In addition to highway improvements, these funds may be used for non-motorized, transit and enhancement activities.

STPU Surface Transportation Program-Urban. A WYDOT-authorized program which permits a certain portion of STP funds to be used in urban areas. See STP.

TEA Transportation Enhancement Activity is a new category of activity which enhances an existing transportation facility, e.g., bicycle lanes, sidewalks, landscaping, etc.

TIP Transportation Improvement Program. See STIP and MTIP.

UPWP Unified Planning Work Program. A document prepared annually by the MPOs describing transportation planning activities to be conducted in the metropolitan area during the Federal fiscal year.

VMT Vehicle Miles Traveled. The total distance traveled in miles by all motor vehicles of a specific group in a given area in a given time period.

WRIR Wind River Indian Reservation.

WYDOT Wyoming Department of Transportation