Technical Training Status for the Departments of Transportation in Montana, North Dakota, South Dakota, and Wyoming

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November 2006

Acknowledgements

Special thank you to the following people for their assistance and cooperation in coordinating input and providing information for this study. Their participation and efforts were invaluable.

- David Huft, South Dakota Department of Transportation
- David Talley, Wyoming Department of Transportation
- Kris Christensen and James Bailey, Montana Department of Transportation
- James Martin and Judy Froseth, North Dakota Department of Transportation

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INTRODUCTION

The transportation industry is going through an extensive change in the way it conducts business and the way it needs to address the management of its workforce. Today's workforce is faced with having to adapt to a more rapidly changing environment than ever before.

According to a number of studies, knowledge doubles every four to seven years. Society will continue to experience the exponential part of the total knowledge curve well into the future. This trend also applies to DOT workforces and their ability to keep pace with knowledge demands of their work activities. Previously, employees could rely on physical exertion to progress. Now, in a knowledge-based economy, individuals create value by applying knowledge and information.

Budgets and programs for DOTs have been increasing, yet employee numbers have been level or decreasing. More work is being contracted out and programs are becoming more complex because of an increasing number of new rules and regulations. In this environment DOT employees must have skills in contract, project, and program administration and management. Technology advances in transportation are also generating more of a demand for on-going employee training and employee versatility. The public's "demand to know" is also requiring technical employees in an organization to become more adept at communication skills, thereby necessitating a better balance of technical and support skills. Workers with new diverse skills will be a requirement for effective program delivery.

Future workforce demographics also are portraying a challenging situation. According to the Federal Highway Administration, national statistics illustrate a potential for 50 percent of the transportation workforce to be eligible for retirement by 2010. They also indicate more than one-third of the senior managers at state DOTs are eligible to retire immediately, with another 10 percent eligible in just three years. The statistics for the four DOTs involved with this study illustrate similar trends.

Another challenge facing DOTs, is their ability to adjust to the changing work environment demands of the new generation of workers. Each generation of workers, whether it be the "Veterans" born in the decades of the nineteen twenties, thirties, and early forties; the "Boomers" of the forties and fifties; the "Gen-Xers" of the sixties and seventies; or the "Millennials" of the eighties and nineties; each has a different philosophy and approach to work habits and technology.

DOT leadership, managers, and human resources staff need to recognize and adjust to all these elements of institutional change that are occurring around us at an ever increasing pace if they are going to maintain an effective and efficient workforce into the future. There seems to be a couple of solutions to this problem. One is to create a more optimally sized workforce within the DOT by hiring more, higher-level trained employees. This would require the approval of both the executive and legislative branches of state government. Additionally, it would likely require an upward salary adjustment of some significance to be competitive in the marketplace. The other alternative is an increase in productivity of the limited workforce available to the DOT. It seems the latter solution is more pragmatic of the two.

Increasing productivity can be achieved through a number of ways. Two stand out: (1) improved motivation of the workforce: and, (2) improved and increased skill sets and information base through training and education. They should both be considered; however, training and education are the more easily implemented and can be immediately applied. This report is intended to address the aspects of training and education.

BACKGROUND

Discussions between management from four DOTs - Montana, North Dakota, South Dakota, and Wyoming - led to the realization that they were all facing the same issues and that something needed to be done to improve their position to deal with the changing work force environment around them. The four DOTs agreed the demand for training was increasing, the competition for a dwindling workforce was becoming greater, the workforce itself was changing, the needs for training were changing, and the costs for existing training were increasing. Consequently they agreed to cooperatively pursue an initiative to determine if a program could be developed to provide quality technical training in a more efficient and cost effective manner.

The Upper Great Plains Transportation Institute at North Dakota State University was asked to conduct a site review at each DOT. The purpose of the site reviews was to:

- Obtain information to identify training challenges facing the DOTs,
- Identify common training needs,
- Identify training resources available that could be used (as is or modifiable) to meet common needs,
- Assess issues associated with training delivery, and
- Obtain good practice examples used by the respective DOTs that could be shared.

This document serves as the Phase 1 report outlining the findings from the site visits. It was requested by the Executive Advisory Group for the Transportation Learning Network (TLN). This group is composed of senior management staff from each of the DOTs participating in TLN, the Director of the Mountain Plains Consortium, and the Director of Upper Great Plains Transportation Institute. The report also was to include Phase 2 recommendations for proceeding with a program to jointly provide new training development and delivery for DOT employees that would be high quality, affordable, efficient, and effective.

Funding for the site visits and preparation of the findings was done through the pooled funds efforts of the participating DOTs. Cost of this initiative was $22,500.

SITE VISITS

Although it was anticipated the site visits would be completed by the middle of April, scheduling conflicts prohibited this from occurring. Actual site visits to the four DOTs occurred as follows:

Pierre, South Dakota – February 16-17, 2006
Cheyenne, Wyoming - March 13-14, 2006
Bismarck, North Dakota – April 24, 2006
Helena, Montana – June 5-7, 2006

A listing of attendees for each site visit is included in Appendix A. Attendance ranged from nine to 21 people.

Site Visit Findings: Commonalities

Part of the purpose of this effort was to identify the commonalities that all the participating states share. By focusing our efforts towards areas that all states share in common we can reduce costs and increase impact of those efforts. The following is a list of some of the issues that each state had in common.

- No DOT has a highly formalized method for determining or prioritizing technical training. Montana is the farthest along in developing a more structured process.

- Actual budget costs for training in each DOT are difficult to determine. Dollars budgeted to the human resource area is the closest that can be obtained from most. Often training dollars also are allocated to other areas of the organizations, however. The identity for certain costs such as travel and expenses for the training seem to get lost. Wyoming appeared to be closest to knowing a cost ($4.5 million per year), although not all costs seemed to be noted either. There did not appear to be a consistent definition of what constitutes training.

- Soft-side training sponsored by the human resources people generally was better planned and scheduled than technical training.

- Technical training usually was prioritized as “need of the moment.”

- There is a communication/interpretation gap between the engineering and human resources sides of the organizations (they don’t always talk the same language).

- Training mandated by legislation (such as bituminous certification, bridge inspection, etc.) is better developed and scheduled then other technical training.

- What is needed for training for field people versus central office staff can be different for a particular subject (e.g. – surveying).

- General agreement that DOTs needed training on new delivery techniques before trying to implement them. Good training, not delivered properly, can be bad training.

- All the states require similar continuous training for registered professional engineers and land surveyors.

- Considerable training occurs for DOT employees; but is it the best and most appropriate for the needs? It does not appear that any process exists for screening training for appropriateness or cost effectiveness.

- All entities have difficulty hiring and retaining technicians and engineers.

- All entities rely heavily on FHWA, AASHTO, and NHI for training.

- All entities take advantage of applicable training developed or offered by other in-state agencies and vendors.

Site Visit Findings: Unique Activities

- SDDOT requires LTAP training to be developed for DOT-level employees and courses are tailored down for local training. LTAP training in the other DOTs is developed primarily for the local levels.

- SDDOT's training is handled by a central training group outside of the DOT (Bureau of Personnel).

- WYDOT has WYDOT University which concentrates on DOT skills training and emphasizes leadership and management. A copy of its training program is included in Appendix B.

- WYDOT has training management software to track training by employee and to advertise training (ESS, PO Box 29661-2032, Phoenix, Arizona 85038-9661).

- WYDOT uses maintenance employees on construction. NDDOT is starting.

- NDDOT has developed cash incentive program for employees obtaining certifications or licensing in their respective fields.

- MDT, NDDOT, and WYDOT have established equipment operator's academies (week-long course).

- NDDOT has contracted for training by videoconference for professional development hours for PEs. Also available to partnering states.

- NDDOT has established an internal training team to discuss and coordinate department training. Representatives are included from both the engineering and support services areas. This group is headed by a "technical" training coordinator.

- NDDOT has established a formal employee mentoring program. Participation in the program has more then doubled since its inception.

- NDDOT is dealing with department training through the agency's strategic planning process. One of the department's goals is to enhance employee effectiveness and well being with an objective of developing and implementing a department training management program tailored to enhance employee development and meet department educational needs.

- NDDOT utilizes ND National Guard leadership training sessions.

- MDT cannot use maintenance employees on construction because they are unionized.

- MDT is making a concerted effort to formalize its training identification and prioritization process.

- MDT has established a management development program for employees wishing to advance into management positions. A copy of the program is included in Appendix C.

- MDT has established a highways and engineering conference annually for its Engineering Division staffs and Planning and Administration Division representatives. Simultaneous sessions occur daily. A copy of the 2006 program is included in Appendix D.

Site Visit Findings: Identified Challenges

- Providing equal opportunities for training and development to all employees.
  - State areas are not all covered with appropriate equipment to disperse training.
  - Communicating training availability properly to all employees.
- Providing appropriate training.
  - Capability to review content for appropriateness of training.
  - Improving communications of actual needs.
- Timing of training not to conflict with heavy work periods.
- Keeping up with new technology.
- Updating training information and programs.
- Maintaining appropriate communication and coordination within a department on training.
- Dealing with diverse professional areas with specific or specialized training needs.
- Determining the proper balance between “soft” training and technical training.
- Budget limitations and justifying training budgets.
- Travel limitations.
- How to be assured training is applied (effectiveness of training).
- Can training be used as a recruiting and retention tool?
- How to align training requirements with job titles.

TRAINING DEVELOPMENT COSTS

Costs to develop specialized training can vary from being relatively inexpensive to extremely costly. There are pros and cons to each type.

The least costly and most readily available is generally vendor training. This type of training material has usually been developed at vendor expense and the vendors are very willing to promote their product or service with free or relatively inexpensive presentations. It is important for an agency or training recipients to be able to distinguish product or vendor bias when receiving this type training. New products and ideas are generally introduced to customers in this manner. This process should not be discouraged, but rather encouraged to some reasonable level, to keep employees up to speed on changes. Examples of some of the more popular, non-company specific sources are organizations that support a product but not necessarily a company, such as an asphalt association or a concrete association. Their training is typically technically generic yet very informative and useful.

A form of training that has been around for a long time is a mentoring program. Informal mentor programs (a.k.a on-the-job training) have been the mainstay of DOT employee development for years. However, most DOTs are losing their mentor base through a disproportionate loss of middle managers and their considerable institutional knowledge. Informal mentoring should always be supported and encouraged. Formal mentoring programs are becoming more prevalent in some agencies. Ideally, formal mentoring programs should match mentees with mentors in positions they can aspire to or have activities related to their career development. Time commitments for a successful mentor/mentee program can be considerable because of the one-on-one relationship; therefore involvement should not be taken lightly. Informal mentoring is also less costly then formal mentoring, however a side benefit of formal mentoring is the public relations aspect from a recruiting and retention perspective.

The next level of training from a development cost and availability perspective is that produced by LTAP/TTAP groups. Traditionally this has been geared more to local governments and is not as technically in-depth as other DOT-received training. This does not mean this type training could not be tapped with the idea that modifications can be made to the training to better incorporate the technical needs of the DOTs. There may be additional costs involved with doing this. However, the costs may not be extensive if the changes are incorporated early in course development, the modifications needed are slight, or the costs possibly shared with multiple agencies.

Agency-developed training (in-house) is another level of development. This type of training is usually more agency specific. There is a cost involved that varies by the training subject. The cost and success of this type training is dependent on the expertise required to coordinate content and delivery. Consideration needs to be given whether this is a one-shot training course or something that will be ongoing therefore requiring updating.

The use of university faculty to develop new training and delivery is another option to consider. This is a university's role - to educate. The difference however, is the development of courses are generally geared to students receiving a degree. This concept has been changing recently with the technology developed for online, at-your-convenience, at-your-location, delivery of training. The potential exists for the training to not always fit the specific need. Another possibility, however, is for universities in a region to pool their expertise and contract for development of specialized training. This option already exists for the four DOTs involved with this training initiative through the Transportation Learning Network (TLN). Universities involved with the Mountain Plains Consortium (CSU, NDSU, SDSU, UU, and UW) presently are involved with this arrangement. Another university, Montana State, could also very easily be included. It should be noted that several of these universities are also the LTAP contractors. Closer management and coordination of training development and delivery under this scenario needs to occur. Costs are dependent on course subject and expertise readily available from staff resources. An obvious benefit to utilizing this arrangement is the mechanism is pretty much in place, and an economy of scale exists with four DOTs sharing costs.

Considerable effort is occurring through pooling of resources for course development among states and national organizations such as NHI, APWA, ARTBA, AASHTO, WASHTO, FHWA, and others. They recognize the need to adjust to the changed environment for training development and delivery. The Transportation Curriculum Coordination Council (TCCC), another multi-state pooled fund project, has taken on this challenge on a national scale. They are developing core curricula in five program areas: construction, materials, maintenance, safety, and employee development. Material developed through TCCC efforts is available to DOTs. Modifications may be required to accommodate individual state needs along with provisions for a state to provide their own instructors. There may be a definite benefit for the four state DOTs to consider developing a shared process to coordinate monitoring of activities provided by this group and if appropriate, coordinating course selection, modification, and delivery of training.

By far the most costly method of training development and delivery is a DOT-specific technical training package from an outside source. Development costs themselves can be quite costly and if instructor-led delivery is required, the per-student payout can become considerable. NHI course development was reaching the $200,000 to $300,000 range plus delivery costs. Recognizing the high-cost reality, NHI is presently investigating alternative methods of training delivery. Web-based training or web conferencing are two methods being investigated.

TRAINING DEVELOPED IN-HOUSE

Each DOT had already done some in-house development of training. All DOTs appeared to have training packages for traditional training subjects such as EEO, etc.. No state had an exhaustive list of all the training materials they had developed at all levels for all topics. The following list is surely not a complete one.

SDDOT Developed

- Certification of technicians – framemaker; pdf format – manuals – Referenced to SDDOT Specifications
  - Earthwork – pipe installation and erosion control
  - Concrete paving and concrete plants
  - Soils testing
  - Aggregate testing
  - Building structures – inspection and testing
- CADD training – disc; on-line course
- Flagger instructor training – on-line course
- Safety training – 60 separate topics; manuals and videos
- Maintenance management course – 1 week for supervisors
  - On SDDOT policies, procedures, etc.
- Maintenance equipment training – self study in Word
  - Generic on brands
  - Familiarize operators on basic information to operate and maintain various type equipment

WYDOT Developed

- Leadership and Management – by tiers/levels
  - Prepared and delivered through their DOT University
- QC/QA certification – tailored to WYDOT
- WYDOT policy-mandated training – tailored to WYDOT and delivered through their WYDOT University

    - Work place discrimination
    - Work place violence
    - Ethics
    - Performance appraisals
    - Telephone skills and voice mail
    - E-mail training
    - Safety
        - Defensive driving
        - Blood-born pathogens
- Maintenance Equipment Training Academy
    - META is a week long maintenance equipment training

NDDOT Developed

- Plan reading course
    - Self study or classroom format
    - Being updated
    - Based on NDDOT design format
- Basic math course
    - Self study or instructor lead format
    - Being updated
- Maintenance Equipment Operator Academy
    - Some phases on DVD
    - Week long course
- Snow and ice control
    - CD-ROM
- Local government
    - Emergency relief training with manual
- Materials and research – all classroom-delivery training courses
    - Soils – covers soils tests in field
        - Classroom and hands-on with exam – 1 day
        - Certification
    - Introduction to asphalt – covers asphalt materials and aggregates
        - Pre-requisite for certification – 1 day with exam
    - Asphalt inspection – covers paver and roller types, operations, specification requirements, and agency and industry roles and responsibilities

        - Classroom with exam – 1 day
    - Aggregate testing – covers all tests and procedures for aggregate certifications
        - Classroom and labs with exam – 1 day
    - Asphalt mix testing – covers QC/QA testing
        - Classroom and demonstrations with exam – 2 days
    - Asphalt controller – covers Superpave and Marshall mix design requirements
        - Geared to NDDOT QC/QA specifications
        - Classroom with exam – 3 days
    - Re-certification refresher classes (1/2 day each) in asphalt pavement inspection, asphalt controller, aggregates, and asphalt mix tester
- Construction
    - Construction Automated Records System (CARS)
        - Instructor led training and manuals
        - NDDOT procedures specific
- Bridge inspection training
    - Instructor led training
- Technician training - instructor led training, week long course
    - Construction inspection
    - Plan reading
    - Basic materials testing
    - Safety awareness
    - Basic math
    - Basic surveying
    - Work zone traffic control
- New supervisor training
    - Peer to supervisor
    - Content geared to NDDOT forms, processes, and policies

MDT Developed

- Maintenance Training Academy
    - Equipment operator training
- Management training
- Basic math self study workbook and math training sessions delivered by local college of technology
- A closed caption video on “Understanding Highway Right-of-way and Construction Plans

- Laboratory soils testing course being developed by MSU
- Annual Highways and Engineering Conference
  - Agenda changes every year
  - 3 days – 1 day general, 2 days of simultaneous technical modules

ALTERNATIVES TO CLASSROOM TRAINING

Classroom training is a time-tested method of training and information delivery. It is also one of the most expensive in terms of time, salary, travel, and opportunity cost. New alternatives are being developed. The following is a quick run-down of some of these new technologies and what they can mean to the DOTs.

Distributed Learning[1]

Distributed learning is any educational or training experience that uses a variety of means, including technology, to enable learning. It can provide for intentional and incidental learning outcomes and may be separated by time, distance, or both. Distributed learning includes, but is not limited to, distance learning and online learning. Often, regardless of the location of the learning environment, distributed learning eliminates time as a barrier to learning (Oblinerg, Barone, & Hawkins 2001). In *distance learning* the learner is typically separated in space and time from the instructor and peers. In *online learning* the learner is limited to Internet-based learning technologies. Another commonly mentioned subset of distributed learning is *e-learning*, which Clark and Mayer (2003) refer to as "a combination of content and instructional methods delivered by media elements such as words and graphics on a computer" (p. 311). With the changes in the Internet and in computing technology, the lines between these areas are rapidly becoming blurred, and may cease to exist in the near future.

Distributed learning may occur among people scattered across the globe or among coworkers at a single facility. What characterizes distributed learning is the use of a very flexible functional architecture that takes a variety of manifestations. These could include any combination of on-campus lectures, computer-based training modules, online seminars, reference websites, books, DVDs, threaded discussions, videoconferences, weblogs, simulations, performance support systems, and numerous other elements by which learning is accomplished. Another attribute of distributed learning is that it may be *synchronous* (takes place in real time), *asynchronous* (does *not* take place in real time), or a mixture of both.

Distributed Learning in … Corporate Settings[2]

Corporate online learning environments often include an intranet (a network similar to the public Internet but secure from outside access) for employees of a corporation. A great deal of training is taking place over corporate intranets. Corporate training budgets are investing billions of dollars in Web-based training alone, and investments are expected to increase for the foreseeable future (Abernathy, 2001). The rationale is that it costs the company money not only to transport and house employees for out-of-town training but also to replace that employee during the training. Moreover, employees are able to get training when and where they need it instead of waiting for the next scheduled training session. Employees can log on to a company intranet and take the classes they need when they need them. Such

[1] Trends and Issues in Instructional Design and Technology, 2nd Edition. Robert A. Reiser and John V. Dempsey (2006), p. 290.
[2] Ibid. p. 290-291.

training is managed by learning management systems (LMSs), which track who has taken what course, at what time, and which individual objectives have or have not been met. LMSs thus allow institutions to track what their employees know or can do. This saves money and simplifies compliance issues.

The Online Environment as a Learning Community[3]

Although often viewed as an isolating experience, the paradox in online learning is that learners sitting alone in front of a computer monitor may actually be satisfying their human need for community (di Petta 1999). … Online or virtual communities may also be effective vehicles to improve learning overall. According to the American Society of Trainers and Developers (ASTD), 70% of what an employee needs to know to do their job is learned outside formal training, and virtual communities of practice (VCOPs) are a good way to acquire tacit knowledge (Kaplan 2002).

If constructivism has one true champion in circumstance, it is the shared construction of learning assignments – an inherently social activity. Many online course developers are coming to see the information they incorporate as less of a product (permanent in the sense of a textbook) and more of a process of a learning group in action among an increasing array of learning options and shared experiences. Research on the benefits of learners as designers, peer tutoring, and collaborative design may be one of the unanticipated strengths of developing online instruction and training (Dede 1995). Participation and creativity not available in conventional classes are becoming commonplace in well-designed online environments (Abrami & Bures 1996).

New Delivery Methods: Some Definitions[4]

Online or Web-Based Training (WBT)

Web-based training (WBT) is a type of training that is similar to computer-based training (CBT); however, it is delivered over the Internet using a web browser. Web-based training frequently includes interactive methods, such as bulletin boards, chat rooms, instant messaging, videoconferencing, and discussion threads. WBT is usually a self-paced learning medium, however some systems allow for online testing and evaluation at specific times.

> **DOT Applications**
> This technology could be used to allow employees to do self-paced training on computers that are connected to the internet. A broadband connection and a multimedia computer would be required to best utilize this medium.

Distance Learning

Distance education, or distance learning, is a field of education that focuses on the pedagogy/andragogy, technology, and instructional systems design that is effectively incorporated in delivering education to students who are not physically "on site" to receive their education. Instead, teachers and students may communicate asynchronously (at times of their own choosing) by exchanging printed or electronic media,

[3] Trends and Issues in Instructional Design and Technology, 2nd Edition. Robert A. Reiser and John V. Dempsey (2006), p. 294.
[4] From www.wikipedia.org on July 26, 2006.

or through technology that allows them to communicate in real time (synchronously). Distance education courses that require a physical on-site presence for any reason including the taking of examinations is considered to be a hybrid or blended course or program. E-Learning: a combination of content and instructional methods delivered by media elements such as words and graphics on a computer.

DOT Applications
Distance learning allows employees located at far-flung locations to participate in training. A variety of media can be used including paper-based, computer-based, web-based, videoconference, podcasting, and others that allow learners and instructors to be physically separated. Training may take place at a specific time with other learners or the instructor also participating, or it may take place at the learner's convenience.

Computer-Based Training (CBT)

Computer-based training (CBT), also called **computer-assisted instruction (CAI)** is a type of education in which the student learns by executing special training programs on a computer. CBT is especially effective for training people to use computer applications because the CBT program can be integrated with the applications so that students can practice using the application as they learn.

Historically, CBTs growth has been hampered by the enormous resources required: human resources to create a CBT program; and hardware resources needed to run it. However, the increase in PC computing power, and especially the growing prevalence of computers equipped with CD-ROMs, is making CBT a more viable option for corporations and individuals alike. Many PC applications now come with some modest form of CBT, often called a tutorial.

This technology could be used to allow employees to do self-paced training on computers connected to the Internet. A broadband connection and a multimedia computer would be required to best utilize this medium.

DOT Applications
Computer-based training requires multimedia computers, but not necessarily a connection to the Internet. Individuals can do this at their convenience and without an instructor. They can be costly to develop, but once developed can serve many individuals and recover the development cost. Updating as material becomes dated needs to considered in choosing this medium.

Breeze

Adobe (formerly Macromedia) Breeze is software used with Microsoft PowerPoint to create powerful sales and marketing, information and general presentations, online training, web conferencing, learning modules and more. With the power of Macromedia Flash, music, sound, interaction capability and more is available. Breeze allows for online PowerPoint presentations that can be either syncronous (Breeze Meeting) or asynchronous (Breeze Presenter).

DOT Applications

Breeze is currently a growing phenomenon in distributed learning. The National Highway Institute, along with other organizations, has chosen this technology for their distributed learning medium. Breeze allows for narrated PowerPoint® presentations, including testing, to be accessed from a Breeze server. A multimedia computer and broadband Internet connection would be required. The cost of producing these presentations (other than development time) is minimal, however the cost of hosting them on a server can be significant.

Electronic Books

An **e-book** (also: **eBook**, **ebook**) is an electronic (or digital) version of a book. The term is used ambiguously both to refer to either an individual work in a digital format, or a hardware device used to read books in digital format. Some users deprecate the second meaning in favor of the more precise "e-book device." However the term interplay works out colloquially in the long run, e-books are an emerging and rapidly changing technology, and since at least 2004 have included newer experimental online magazines, pioneered in part by Baen's Books in their release of the first *Grantville Gazette*.

The term e-text is often used synonymously with the term *e-book*, and is also used for the more limited case of data in ASCII text format excluding books in proprietary file formats. An exception to this rule is the academic e-text, which commonly includes components such as facsimile images, apparatus criticus, and scholarly commentary on the work from one or more editors specially qualified to edit the author or work in question.

An e-book is commonly bundled by a publisher for distribution (as an e-book, an ezine, or an Internet newspaper), whereas e-text is distributed in plain text, or in the case of academic works, in the form of discrete media such as compact discs. Metadata relating to the text are sometimes included with etext (though it appears more frequently with e-book). Metadata commonly include details about author, title, publisher, and copyright date; less common are details regarding language, genre, relevant copyright conventions, etc.

DOT Applications

Electronic books can be very useful for DOT personnel, mostly as reference material. Rather than purchasing, storing, and transporting large reference manuals, electronic versions allow individual access to the same information and allows for quicker searches as well. They can also be easily updated and distributed.

Threaded Discussions

In a threaded discussion, a group of individuals is connected via an electronic network, such as an e-mail list, listserv, or a bulletin board service. Examples of bulletin board services include Yahoo! Groups and MSN Groups. Nicenet is specifically designed for threaded discussion with the instructor in mind. This allows members of the group to communicate about common interests asynchronously, in their own time and at their own pace. An individual may post a message in the evening and another may respond the next day. Threaded discussion is a common tool in e-learning environments. Advocates of threaded discussion suggest that learners may stop and think about what their messages will be, taking into account the other messages in the discussion forum, before posting their thoughts. Such asynchronous communication permits deeper consideration of the ideas under discussion.

DOT Applications
Threaded discussions would be a great resource for new hires and other professionals who would like to ask questions or discuss issues with their peers. It allows for everyone to gain from the answers provided.

Videoconferences

A **videoconference** (also known as a *videoteleconference*) is a set of interactive telecommunication technologies which allow two or more locations to interact via two-way video and audio transmissions simultaneously.

DOT Applications
Videoconferences allow for instructors and students to be in separate locations, but in many other respects it is like classroom instruction. Oftentimes, videoconferences are supported by other media.

Weblogs (Blogs)

A **weblog**, which is usually shortened to **blog**, is a type of website where entries are made (such as in a journal or diary), displayed in a reverse chronological order. Blogs often provide commentary or news on a particular subject, such as food, politics, or local news; some function as more personal online diaries. A typical blog combines text, images, and links to other blogs, web pages, and other media related to its topic. Most blogs are primarily textual although many focus on photographs, videos or audio. The word *blog* can also be used as a verb, meaning adding an entry to a blog.

DOT Applications
Blogs could be used to document an individual's experience in their job (like a journal) or could be used to provide daily guidance to a group of individuals. Blogs require readers to actively seek the information and access the website. An internet connection would be required for this medium.

Simulations

A **simulation** is an imitation of some real thing, state of affairs, or process. The act of simulating something generally entails representing certain key characteristics or behaviors of a selected physical or abstract system.

A computer simulation is an attempt to model a real-life situation on a computer so that it can be studied to see how the system works. By changing variables, predictions may be made about the behavior of the system.

Simulation is used in many contexts, including the modeling of natural systems or human systems in order to gain insight into their functioning. Other contexts include simulation of technology for performance optimization, safety engineering, testing, training and education. Simulation can be used to show the eventual real effects of alternative conditions and courses of action.

Key issues in simulation include acquisition of valid source information about the referent, selection of key characteristics and behaviors, the use of simplifying approximations and assumptions within the simulation, and fidelity and validity of the simulation outcomes.

DOT Applications

Simulations can be used for a number of DOT applications. Simulations do not have to be computer-based and many have been used in the DOT for years. Computer-based simulations also could have many applications for DOT situations, but they can be costly to develop and need to be updated as situations or equipment change. This is an area that will change significantly in the future as virtual reality technologies are developed. Simulations can be done on a multimedia computer or may require a unique piece of equipment.

Podcasts

Podcasting is the method of distributing multimedia files, such as audio programs or music videos, over the Internet using either the RSS or Atom syndication formats, for playback on mobile devices and personal computers. The term **podcast**, like 'radio,' can mean both the content and the method of delivery. The host or author of a podcast is often called a **podcaster**. Podcasters' web sites may also offer direct download or streaming of their files; a podcast however is distinguished by its ability to be downloaded automatically using software capable of reading RSS or Atom feeds.

Usually a podcast features one type of 'show,' with new episodes released either sporadically or at planned intervals such as daily or weekly. In addition, there are podcast networks that feature multiple shows on the same feed.

DOT Applications

Podcasts could be used for many things by DOTs. Executive announcements, policy changes, employee reminders, and general announcements are only a few examples. It could also be used for audio and video training. A library of mobile devices could be controlled by the DOT with a specific computer serving as the host. Training podcasts could either stand alone or could supplement other types of training. They could also serve as audio or video reference manuals. Users subscribe to a podcast and new episodes are delivered automatically. Producing podcasts can be inexpensive and using podcasts only requires a piece of (free) software, such as iTunes. A mobile device is often used, but not required to access podcast material. A series produced for district safety meetings would be one application.

Learning Management Systems

A **Learning Management System** (or **LMS**) is a software package, usually on a large scale (that scale is decreasing rapidly), that enables the management and delivery of learning content and resources to students. Most LMS systems are web-based to facilitate "anytime, anywhere" access to learning content and administration.

At a minimum, the LMS usually allows for student registration, the delivery and tracking of e-learning courses and content, and testing, and may also allow for the management of instructor-led training classes. In the most comprehensive of LMSs, one may find tools such as competency management, skills-gap analysis, succession planning, certifications, virtual live classes, and resource allocation (venues, rooms, textbooks, instructors, etc.). Most systems allow for learner self-service, facilitating self-enrollment, and access to courses.

Some LMS vendors do not distinguish between LMS and LCMS, preferring to refer to both under the term "LMS," but there is a difference. The LCMS, which stands for "Learning Content Management System," facilitates organization of content from authoring tools, and presentation of this content to students via the LMS.

LMSs are based on a variety of development platforms, from Java EE based architectures to Microsoft.NET, and usually employ the use of a robust database back-end. While most systems are commercially developed, free and open-source models do exist. Other than the most simplistic, basic functionality, all LMSs cater to, and focus on different educational, administrative, and deployment requirements.

Open source LMS is growing fast in the education and business world.

DOT Applications
Learning Management Systems allow DOTs to track, offer, and manage organizational training opportunities as well as record employees' career development and training experiences in a large centralized database. Some even offer web-based training development modules. PeopleSoft has a LMS module and there are other stand-alone alternatives. LMS allows for a "transcript" for individual employees as well as analysis of courses for managers, developers, and instructors.

EVOLUTION OF THE TRANSPORTATION LEARNING NETWORK (TLN)

The Transportation Learning Network (TLN), formerly Tel8, has been engaged in videoconferencing for nearly 15 years. It has undergone some significant changes over those years, some of which have come in the past year or so. The following describes the organization in more detail.

TLN Make-up and Intent

The Transportation Learning Network is a partnership of state departments of transportation and Mountain-Plains Consortium (MPC) universities. Its current members are:

- Montana Department of Transportation
- North Dakota Department of Transportation
- South Dakota Department of Transportation
- Wyoming Department of Transportation
- Colorado State University
- North Dakota State University

- University of Utah
- University of Wyoming
- South Dakota State University

TLN was developed to serve the transportation interests of the region through enhancement of knowledge transfer and communications. The system began as a pooled fund research project to investigate the feasibility of satellite communication technology for sharing and distributing information among several entities. Although this was the state of the art at the time, the system was not without its drawbacks. Transmission did not allow synchronization of audio and video, manual changing of site transmission was required, limited hookups were available because of satellite dish costs, and it was cumbersome to operate. It was functional however, and did provide a valuable communication link. Coordination of training began under this initial system.

As technology evolved a conversion was made to a videoconferencing system using phone line technology with bridge service. This was a large improvement in operational clarity and simplicity. It also allowed for voice-actuated video. Strides were made in providing more training opportunities with this new system. But, unlike the original satellite system, the more the system was used the more it cost. Limited hookups due to bridge capacity were also an issue.

The latest evolution is conversion to an IP network with ability to connect to legacy ISDN sites. Each videoconference site consists of in-room video and audio equipment that receives and transmits live pictures and sound. Each site is capable of participating in individual point-to-point or system-wide videoconferencing. TLN operates a videoconferencing bridge providing connections to multi-site conferences. A huge advantage with the latest TLN system is that the cost is basically set for whatever use is made of the system; it is a fixed cost. The previous systems were a “pay for use” process, where the more they were used, the more they cost.

Presently the TLN network has regular access to approximately forty-five (45) sites in the five MPC universities and four state DOTs. A listing of readily accessible sites and a map of their locations is included in Appendix E. TLN can connect however, to any location that has an IP or ISDN connection.

TLN’s relationship with the MPC is a partnering arrangement. MPC is a separate organization serving as a regional/national resource and focal point for the support of research and training concerning the transportation infrastructure and the movement of passengers and freight. The agreement MPC has with TLN allows students interested in TLN graduate courses to enroll in their local university, pay local tuition, and graduate from that institution while taking courses from professors from each of the MPC universities. Faculty at MPC universities also serve as a resource for TLN training initiatives.

TLN Organization and Management

TLN operates under bylaws that its members have agreed to. Each member organization is represented by one individual on the TLN board of directors. Three officers are elected every two years to lead TLN: president, vice-president, and secretary/treasurer. The president is a DOT representative. The board is established in such a manner that the state DOTs have principal charge and responsibility for the establishment and management of the Transportation Learning Network.

TLN is currently staffed with a full-time executive director, a part-time network technician, and a part-time web specialist. The staff, as well as the network control center, is located at North Dakota State University.

The proposed budget for TLN for FY 2007 is approximately $590,000. This amount is divided disproportionately among the five MPC and four DOT members dependent primarily on the differing equipment and training consumption (DOTs pay more than MPC universities). A copy of the budget is shown in Appendix F. The budget continues to be handled as a pooled fund study with the NDDOT the administering agency.

TLN Challenges and Changes

Just as DOTs face the challenge of miscommunication of training needs between technical and soft side training, TLN has experienced the same challenge. To date the predominant type training offered over the network has been of the non-technical nature. This is due in part to representation on the programming committee by predominantly non-technical staff. The individuals on the board are generally people well versed in training expertise, however they have not always been given the proper tools to interpret the technical training needs of the agencies. To partially remedy this issue, TLN is proposing the addition of a part-time position to be technical training advisor for the executive director and the programming committee. The new position would be responsible for communicating DOT technical training needs to the executive director and programming committee along with recommending potential training course availability to fulfill DOT needs for delivery from TLN. As a start to improve the level of technical training from TLN, concrete and asphalt associations have been contacted and several sessions have been scheduled for delivery in the near future. These also are eligible for PDH credits.

Up to this point, training packages have been delivered over live, interactive video with instructor-led training. Timing of the training has not always coincided with the availability of the all interested trainees. The DOTs have indicated the most preferable type training would be training that could be obtained on-demand and at their convenience. To partially address that situation, TLN is in the process of installing a Content Server on the TLN videoconference network. This will allow member agencies to access on-demand video presentations, distance education classes, and training sessions that have been given over videoconference and archived on the system.

A tremendous number of technical training packages have been developed, are being developed, or are being discussed for development. Predominant development of technical training packages usually occurs through vendors, trade associations, consultants, special groups such as TCCC, APWA, FHWA, NHI, LTAP/TTAP, and ARTBA, educational institutes, and agencies themselves. Because the demand for technical training is usually impulsive, the risk of redeveloping and duplicating existing training or selecting training that may sound appropriate yet may not be what was anticipated, can be very high. Duplication of similar training is a waste of limited development monies and most DOTs do not have the luxury of having staff to screen available training effectively. A system or process should be established and coordinated to log and screen course content and availability. This could be accomplished through a shared activity by several DOTs, with each being responsible for monitoring a particular technical subject, such as planning training, design training, materials training, etc. or it could be accomplished by sharing costs to have similar services provided by an outside entity. Upper Great Plains Transportation Institute has recently been awarded a contract through ARTBA to establish a records system for tracking LTAP/TTAP training activities. The feasibility of a similar undertaking could be investigated for tracking other technical training content and availability.

A concern of the DOTs has been the ability to offer effective training to all areas of their agency. To do this utilizing the TLN videoconference network, even with the new system requires a decision on the part of each individual department. Budgets for travel and equipment have, in some instances, been frozen which further inhibits training accessibility and availability for some employees. To access TLN videoconference services, as a minimum, remote sites need the following equipment: high speed internet access, monitor(s), and an IP-based codec.

The concern always exists about the ability to keep current with new technology. Tel8 began as a pooled fund research project to investigate the use of new communication technology and applications. TLN is still considered a pooled fund research project to investigate new communication technology and applications. The advantage for states such as the TLN states has been the ability to pool resources to accomplish something that independently would have been cost prohibitive. UGPTI is presently experimenting with web-based training and web conferencing through NHI's Sandbox Project using Breeze software. If this is successful, these technologies will be considered for an additional service that TLN could provide. UGPTI is also experimenting with podcasting, a new technology for communicating information. If successful, short training topics can be delivered remotely with nothing more than a computer with free iTunes software and an Internet connection or a TV with an iPod hook-up. This too could become part of TLN's tool chest for improving communication and training.

SUMMARY AND RECOMMENDATIONS

One of the outcomes of the study was to obtain a more definitive priority listing of technical training needs for each DOT. As previously noted, no DOT has any formalized method of identifying and prioritizing technical training needs. Identification of training needed and selection of the source has generally been fragmented within the agencies. All DOTs appeared to utilize a de-centralized approach to technical training prioritization and selection. This approach has the advantage of putting the selection of training content in the hands of the user. However, when looking at an agency's overall employee development needs, availability of training across division lines should always be considered to allow broadening of the knowledge base for future staffing versatility and contingencies for the department' benefits. Although coordination for getting the training is many times coordinated by human resources training personnel, communication from the technical side of the organization as to actual content needed, is often not effective. Consequently, to come up with an objective method of obtaining technical training needs and priorities for all DOTs could not occur through the site visit process.

Another product intended to be obtained through this effort was to determine the availability of respective DOT developed technical training packages. This was somewhat successful as noted in the previously listed products. Although much of the training appeared to be specific to the respective DOTs, there appears to be the potential of avoiding some duplication through development of generic packages for much of the content and allowing follow-up addendums to be attached to accommodate some of the agency-specific material. A more in-depth review of the available material needs to occur to actually establish the effort needed to accomplish this. At a minimum, if each DOT wants to investigate the use of another DOTs material to enhance their own packages, this should occur.

Although no DOT has an implemented, formalized method for identifying technical training needs and priorities, Montana is working on a simpler process. We suggest a presentation by MDOT over TLN be made to all the other DOTs on their activities in this area.

A more sophisticated effort to obtain training needs in an organization is the use of a gap analysis study. This should be tied to a human resources strategic plan to assure the agency is not just looking at the present but also to the future. In simple terms, an agency needs to identify their core skills required

(present and future), their existing employee skills, and identify the gap between them. This then becomes the basis for identifying their training direction. Although this option may ultimately create the most effective results, it can initially be costly and time consuming. Regardless, some level of analysis in this endeavor needs to occur for all the DOTs.

Considerable training seems to occur in all departments; however, no method of determining the effectiveness of the training within the DOTs visited seems to exist. Without knowing a departments training needs for the present and the future, there is no way of knowing if appropriate training is being identified and properly targeted. There is a tendency to provide training-for-training's sake with effectiveness measured by dollars spent or employees trained. When this occurs an agency runs the risk of spending training dollars ineffectively. Methods to better identify training content appropriateness and effectiveness within an agency should be established. The cost to develop a process to pre-evaluate training content and measure effectiveness of training may be offset by the savings from elimination of less effective training. Options for establishing appropriate levels of screening and evaluation for training should be tailored to fit with training needs identification methods mentioned in the previous and following paragraphs.

Three other more simple options exist for determining individual DOT training needs and priorities. One option is for each agency to establish a technical training coordinator who understands technical terminology enough to interpret the actual training content needs to the human resource people. This individual, along with the human resource person, should discuss details of training content with the respective technical area personnel to assure a proper understanding of training content needed. Another option would be for a technical outside resource to visit with each DOT technical area and help identity each agency's technical content needs. This could be time consuming for one entity to do all agencies, yet it may have benefits in trying to identify areas of common training potential. A third option would be for each agency to establish a task force made up of both technical and human resource representatives to periodically discuss technical training needs and to maintain a recommended technical training priority list for the department. Regardless whether one of these options is selected or not, the issue of internal communication between human resource staff and the technical staff was identified as a concern for all DOTs and should be addressed.

To assure equal opportunities for training and development to all employees, a review of accessibility to proper communication equipment should be made. If travel continues to be an issue, investment in additional equipment may be more cost effective. New technology to deliver training is rapidly changing and becoming more affordable. TLN should continue to investigate new methods of delivery such as podcasting and web delivery. In addition, train-the-trainer courses on new delivery methods can be given by staff at TLN.

Quality in course development and presentation should always be an emphasis. The subject matter of training, the attitude and abilities of the presenter, the preparation of the training, and the delivery of the training all contribute to the training success. Lack of proper attention to any of these steps, even though the other steps are good, can doom the course.

On-demand training capability is a desire for all DOTs. Varying workloads and staffing demands make it difficult to establish schedules that meet everyone's needs. The installation of Content Server equipment through TLN will do much to help this situation. This will allow the archiving of any videoconference presentation offered by TLN to be recalled for partial or complete use upon demand, with instructor's permission. On-line training courses should be encouraged when receiving training through educational institutions as this method of course delivery is not site specific and can be demand flexible. Other techniques for on-demand training delivery should be used when appropriate, such as self-paced

workbooks, use of CDs, computer tutorials, etc. Keeping these types of training materials current is an on-going concern.

Because so much is being done in course development and such a variety of courses already exist in varying formats, additional investigation should occur to develop a screening process and inventory on course availability and content. There are some potential benefits for the four DOTs to approach this undertaking in a cooperative manner. Two approaches could be dividing up functional areas amongst the DOTs to investigate and share the information or by pooling resources for the outsourcing of the investigation through TLN or some other outside source. UGPTI is presently involved with a similar process for LTAP materials nationwide. More involvement with other training initiatives such as those occurring through TCCC should also occur through individual DOT involvement or through participation by TLN/UGPTI.

TLN should aggressively seek increased vendor training on the network as an initial stage of increasing technical training availability. Additionally TLN should solicit the top four technical training priorities for each DOT (content specific as possible), present recommendations to the TLN Board of Directors or to the Executive Advisory Group for best candidates to deliver technical training on, develop or adapt established training material to be offered through TLN.

Although many people professed a desire to "not change" present face-to-face instructor-led training practices, this method of training delivery is rapidly being modified to accommodate the changing work force environment and cost increases associated with this form of training delivery. That is not to say the traditional instructor-led training format should not be used, it is merely a realization that other more cost effective methods of training delivery need to be investigated to keep pace with training demands at an affordable cost. Video conferencing and webcasting can also be described as face-to-face instructor-led training, but it utilizes a modified method of delivery. TLN should continue to investigate and educate the DOTs about technologies that may improve the availability and delivery of appropriate training.

TLN is a good base to continue utilizing and building upon in improving development and delivery of cost-effective technical training. The resources of the MPC universities and TLN staff are available to provide development and delivery support. Montana State University should be approached about joining TLN. The technical interests of the DOTs should be more interactive with TLN Board representatives and programming committee to assure their training interests are addressed properly and to assure proper direction for TLN staff. The DOTs can mold and control the direction and activities for TLN. It is their creation.

In times of budget shortages, training is usually a budget line item easily targeted for reduction. Training is an easy target for administrators because specific training needs are usually not identified or prioritized, therefore it does not have a champion to lobby for its retention. Because of the staffing and workload challenges facing DOTs today and the apparent worsening of the situation in the future, the attitude of balancing budgets by disproportionately cutting training should be looked at closely. This may be attractive as an easy budget fix but the long-term ramifications on a department staffs' ability to maintain productivity, effectively, could be greatly impacted.

APPENDIX A: Site Visit Attendees

Comprehensive Training Intiative Meeting
Monday, April 24, 2006
North Dakota DOT

Name	Position	Phone #	E-Mail
Gary Berreth	Program Director, UGPTI	701-224-2478	gary.berreth@ndsu.edu
Jim Martin	Engineer, NDDOT	701-328-2609	jmartin@state.nd.us
Julie Rodriguez	Executive Director, TLN	701-231-7999	julie.rodriguez@ndsu.edu
Bob Evans	HR Director NDDOT	7013284365	revans@state.nd.us
Kirk Hoff	Bismarck District - NDDOT	701-328-6950	khoff@state.nd.us
LARRY SCHWARTZ	BRIDGE DIVISION - NDDOT	701-328-4446	lschwart@state.nd.us
Ron Horner	M&R Division - NDDOT	701-328-6904	RHORNER@state.ND.US
Terry Udland	Bridge Division - NDDOT	701-328-1969	tudland@state.nd.us
Mark S. Gaydos	Design Division - NDDOT	701-328-4417	mgaydos@nd.gov
Judy L. Froseth	HRD - Training Director	(701)328-2453	jfroseth@nd.gov
BOB FODE	Planning & Programming	(701)328-1937	bfode@nd.gov
Darcy R. Rosendahl	Operations	701-328-4408	drosendahl@nd.gov
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Brian Taylor	Materials	701-328-6931	Staylor@State.nd.us
Cal J. Gendreau	Construction - NDDOT	701-328-2563	cgendrea@nd.gov
Tim Horner	Office of Transp. Programs	7013284406	thorner@nd.gov
Jerome Horner	MESD	701.328.4443	JHorner@nd.us
CHRIS PADILLA	MESD/CONSTRUCTION - NDDOT	328-3225	cpadilla@nd.gov
Minot District			
Fargo District			

Comprehensive Training Intiative Meeting
Tuesday, March 14, 2006
Wyoming DOT

	Name	Position	Phone #	E-Mail
1	Gary Berreth	Program Director, UGPTI	701-224-2478	gary.berreth@ndsu.edu
2	Jim Martin	Engineer, NDDOT	701-328-2609	jmartin@state.nd.us
3	Julie Rodriguez	Executive Director, TLN	701-231-7999	julie.rodriguez@ndsu.edu
4	WES COULSON	WYDOT TRAINING	307-777-4791	WES.COULSON@dot.STATE.WY.US
5	Jan Barkite	WYDOT Training	307-777-4790	Jan.Barkite@dot.state.wy.us
6	Mark Eisenhart	State Construction Engineer	307-777-4459	mark.Eisenhart@dot.state.wy.us
7	Ken Shultz	State Maint Engineer	307-777-4051	Ken.Shultz@dot.state.wy.us
8	DAVID TALLEY	WYDOT TRAINING MGR	" " 4792	DAVID.TALLEY " " " "
9	Jim Connor	Support Services Adm	777-4008	Jim.Connor@dot.state.wy.us

FEBRUARY 17, 2006

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DARIN BERGQUIST	DIR OF OPERATIONS	773-3704,	darin.bergquist@state.sd.us
JOHN FORMAN	CONST & MAINT ENGR	773-5155	john.forman@state.sd.us
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Laura Schoon Cabanneau	Communications	773-5103	laura.schoon@state.sd.us

NAME	POSITION	CONTACT INFORMATION PHONE	E-MAIL
1. JAMES MARTIN	NDDOT CONSTRUCTION	701-328-2609	jmartin@nd.us.
2. SANDY STRAEHL	MDT - Planning	406-444-7692	SSTRAEHL@MT.GOV
3 Jame A. Walther	MDT Preconstruction Engr	406-444-6005	jwalther@MT.GOV
4 Betsy Tarrant	MDT R/W Bureau	406-444-6082	btarrant@mt.gov
5 Kris Christensen	Training + Development Specialist - Engineering	406-444-7286	krchristensen@mt.gov
6 Vichie Murphy	MDT - Management Analyst Engr	406-444-6104	vmurphy@mt.gov
7 Lynn Miller	Maintenance + Equipment Training Specialist	444-6375	lymiller@mt.gov.
8 JAMES BAILEY	TRAINING	4064441849	jabailey@mt.gov
9 DAVE BROWN	MCSAP MGR	444-4207	davbrown@mt.gov
10. Dennis Hult	Chief, MCS Operations	444-9237	dhult@mt.gov
11. KEVIN CHRISTENSEN	DIST. CONST. ENGINEER	494-9626	KECHRISTENSEN@MT.GOV
12 Charity Watt Levis	Public Info Officer	444-7205	CWATTLEVIS@mt.gov
13. LINDA MCKINNEY	HR Administration	444-9253	lmckinney@mt.gov
14. Julie Rodriguez	TLN Exec. Dir.	701-231-7999	julie.rodriguez@ndsu.edu
15. Gary Berreth			
16. Susan Anderson			
17. Dick Turner	CHIEF, MULTIMODAL PLANNING BUREAU	444-7289	DTURNER@MT.GOV
18. Loran Frazier			

APPENDIX B: WYDOT University Program

Wyoming
Department of Transportation
University

WYDOT Training Program
5300 Bishop Blvd. Cheyenne, 777-4790
2005-2006

Welcome to WYDOT University—

Committing ourselves to the continuous improvement of our agency means making a commitment to continuously improving our employees, supervisors, managers, and senior executives. The Wyoming Department of Transportation is committing itself to training and developing the leaders needed for the agency to excel in accomplishing its mission for the people who use our transportation systems.

Differing from traditional schools, WYDOT University will never have a graduating class. It is instead a system designed for continuous learning throughout employees' careers. WYDOT University is an outline of possibilities. Employees and supervisors at all levels need to be involved in shaping their own futures as well as the department's future success in its mission.

Our motto, **"Iter Ad Futurus"***—The Road to the Future— is in front of you. Commit yourself to taking that first step...*

WYDOT University Leadership and Management Program

Table of Contents

WYDOT University Leadership and Management Program

Philosophy and Purpose

- ❑ Producing leaders to meet present and future organizational needs is a key goal of the Wyoming Department of Transportation. The WYDOT University will help meet that goal.
- ❑ In cooperation with their current supervisor and using this document as a guide, *managers, supervisors, and non-supervisors at all levels should take an active part in planning their own training and development*
- ❑ The knowledge, skills, and abilities of leaders and managers must be developed over time through the combination of formal training and real-life experience. This program provides a recommended progression of training so that our supervisors and managers are better prepared to meet the challenges they face in helping accomplish the agency's mission.
- ❑ Specific technical skills are not addressed here. Technical training should advance as needed by changes in technology and the responsibilities of the individual. Balance, though, should be maintained between the technical and non-technical knowledge, skills, and abilities required for effective leaders.

Supervisory/Management Tiers

Four tiers of leadership training are identified in this program. **Tier I** is for new supervisors. **Tier II** contains the additional training needs for experienced supervisors—those with approximately two years or more in a leadership role. **Tier III** is designed for intermediate leaders/managers. Finally, **Tier IV** addresses executive training demands. Supervisors and managers will need to maintain proficiency in all these skills to remain truly effective. Refresher training and advanced development opportunities are ***highly recommended*** throughout a leader's career. If your current ability to effectively perform a skill listed at a lower tier is needing improvement, you are invited to seek training in that skill. There is no stigma attached to pursuing training in skills described in any tier lower than your current position. Taking similar training to past classes, or even repeating courses, every three to five years is encouraged in order to update skills and to relate accumulated experience with leadership principles.

Baseline Courses are considered vital to the successful development of effective supervisors. WYDOT University's Baseline Courses are:

- ❑ **New Supervisor's Orientation** should be completed before or shortly after entering Tier I. It includes an overview of WYDOT's mission and interrelationships among the various divisions and programs. It will also review policies, paperwork, and procedures that are unique to WYDOT, such as the *Supervisor's Employee Management Manual*, the budgeting process, the purchasing/bidding process, and public affairs awareness. A key part of the course is the one-day "Transition to Supervision" class as well as the three-hour "Performance Appraisal" class.
- • **"Focus"** is a one-day Franklin Covey class emphasizing time and life management principles. It is offered at least quarterly on the Tel8 videoconferencing network. The class should be taken before or upon entering Tier I.
- ❑ **"The 7 Habits of Highly Effective People"** is a four-day Franklin Covey course emphasizing personal development, self management, and effective relationships. "7 Habits" can be taken before or after entering **any** tier, but Tier II supervisors should certainly take the course before advancing to Tier III. It is available on Tel8 quarterly, periodically on the WYDOT University schedule, or in-house upon request.

- ❑ **"The 4 Roles of Leadership"** is a three-day Franklin Covey course focused on organizational leadership. It adds leadership skills to management skills to help produce more effective leaders and organizations. This course should be accomplished while in Tier III or shortly after entering Tier IV. It is available in public offerings or could be brought on-site by contract.

Tier I, New Supervisor—Needed Knowledge, Skills, and Abilities:

- ❑ Performance Appraisal training for evaluators is required by the State Personnel Rules.
- ❑ Workplace Discrimination training is required for all employees by Executive Order 2000-4.
- ❑ Ethics training is required for all employees by Executive Order 1997-4.
- ❑ Workplace violence prevention training is required by Executive Order 2001-1.
- ❑ **Non-supervisors** are encouraged to acquire some needed Tier I skills even ***before*** becoming supervisors—for example, customer service, goal setting, and interpersonal communication.
- ❑ Additional knowledge, skills, and abilities needed by new supervisors (listed alphabetically):

- Budgeting/Cost Prediction
- Customer Service
- Dealing with Difficult People/Conflict Management
- Delegation/Empowerment
- Disciplining Employees
- Feedback Skills
- Goal Setting
- Grievances/Complaints
- Interpersonal Communication/Listening
- Problem-Solving/Decision-Making
- State Personnel Rules/EEO/ADA/FLSA/FMLA/WYDOT Policies
- Stress Management
- Time Management

Tier II, Experienced Supervisor

- ❑ Additional knowledge, skills, and abilities needed by experienced supervisors (listed alphabetically):

- Coaching
- Facilitation Skills
- Interviewing/Hiring Practices
- Managing Meetings
- Motivation
- Team Building

Tier III, Intermediate Leader/Manager

- ❑ Additional knowledge, skills, and abilities needed by intermediate leaders/managers (listed alphabetically):
- Community Relations
- Dealing with Change/Managing Change
- Planning/Project Management
- Presentation Skills
- Quality Principles
- Team Leadership
- Writing Skills

Tier IV, Executive

- ❑ Additional knowledge, skills, and abilities needed by executives (listed alphabetically):
- Media Skills
- Mentoring
- Political Relations
- Public Speaking
- Strategic Goal Setting
- Succession Planning
- Visioning

Progression within the Tiers

- ❑ Despite the tiered structure, ***the emphasis of WYDOT University is on acquiring needed skills.*** If a skill is needed now or soon, no matter what tier you are in or what tier the skill is listed in, seek the training that will lead to learning that skill.
- ❑ Completing any or all of the recommended training in this program does ***not*** guarantee promotion or a raise. However, having a vision of your own future, along with a progressive training and development plan, will place you in a more competitive position when opportunities for advancement occur. Training alone does not lead to higher responsibility—advancement requires *effectively applying* the skills learned from training.
- ❑ The knowledge, skills, and abilities required to be an effective leader should normally be planned and developed prior to, or very soon after, advancing up the tiers. However, learning leadership skills early will help you at your current level and can always be refreshed as you progress up the tiers.
- ❑ Employees interested in achieving supervisory roles should coordinate a personal training and development plan with their current supervisor. Supervisors and managers who aspire for higher positions should work on acquiring the knowledge and skills required for the next higher tier. Executives should focus on continuous learning as a way to enhance their own abilities and to help develop future generations of WYDOT leadership.
- ❑ **Continuous learning is a trademark of effective leaders.** The knowledge and skills of supervisors at all levels need periodic improvement and enrichment.

Detailed Tiers Tables:

Shown below are four tables that may be used in laying out a training and development plan. For further assistance or if you have questions, please call the WYDOT Training Program at 777-4792.

Key for using the Tiers Tables:

Primary Skill	Other Skills	Courses	Providers
This column lists the important knowledge, skills, or abilities needed at each level. ⇓	This column lists additional skills that might be included as part of the training sessions named in the **Courses** column. ⇓	The training sessions listed in this column are suggestions for your personal and employee planning. The titles often change, but the content remains fairly consistent. This is not an all-inclusive list. There are many sources of training you may need to explore to fill individual needs. ⇓	The providers listed in this column are known, reliable, effective resources. More detailed descriptions of these providers begin on page 12. You are ***not restricted*** solely to this set of training vendors. ⇓

Tier I—New Supervisor

Primary Skill	Other Skills	Courses	Providers
Performance Appraisal (Mandatory)	Goal setting, Feedback skills	"Performance Appraisal for Supervisors"	WYDOT HR, A&I Human Resources
Anti-Discrimination Training (Mandatory)	Grievances, Complaints	" Workplace Discrimination" (New Employee Orientation) "Sexual Harassment: You Make the Call"	WYDOT HR Clarity CBT
Ethics (Mandatory)		"WYDOT Employee Ethics" (New Employee Orientation)	WYDOT Training
Workplace Violence Prevention (Mandatory)		"Workplace Violence Prevention"	WYDOT Training
Budgeting/Cost Prediction	Planning	"New Supervisor Orientation" "How to Develop and Administer a Budget"	WYDOT Training, Leadership Development Institute (LDI)

Primary Skill	Other Skills	Courses	Providers
Custo mer Service	Interpersonal Communication, Listening	"Customer Service in the Public Sector" "Customer Service"	National Seminars Group (NSG), JourneyWorks
Dealing with Difficult People/ Conflict Management	Interpersonal Communication, Assertiveness	"Dealing with Difficult People" "Conflict Management" "Conquering Workplace Negativity"	NSG, LDI, Counterpoise, CareerTrack
Delegation/ Empowerment	Various	"Leadership Journey" "Situational Leadership"	JourneyWorks LDI
Disciplining Employees	Various	"Leadership Journey"	JourneyWorks
Feedback Skills	Various	"Leadership Journey" "Performance Appraisal"	JourneyWorks WYDOT HR
Goal Setting	Various	"Focus" "The 7 Habits of Highly Effective People" "Performance Appraisal"	Franklin Covey, Franklin Covey, A&I H.R.
Grievances/ Complaints	Various	"Leadership Journey" "Legal Aspects of Supervision"	JourneyWorks LDI
Interpersonal Communication/ Listening	Various	"The 7 Habits of Highly Effective People" "Listen so Others will Speak..." "Interpersonal Communication"	Franklin Covey, LDI, JourneyWorks
Problem Solving/ Decision Making	Various	"Leadership Journey" "Decision Making & Problem Solving"	A&I H.R. LDI
Rules Affecting the Workplace	Various	"Legal Aspects of Supervision" "New Supervisor Orientation"	LDI, WYDOT Training
Stress Management	Time Management	"Managing Stress and Change" "Rethinking Stress" "Achieving Life Balance" "Stress Management"	LDI, Franklin Covey, Mediation Svcs, JourneyWorks
Time Management	Goal Setting, Various	"Focus" "The 7 Habits of Highly Effective People" "Time Management" "Managing Multiple Priorities..." "Time Management"	Franklin Covey, Franklin Covey, LDI, NSG, JourneyWorks

Tier II—Experienced Supervisor

Primary Skill	Other Skills	Courses	Providers
Coaching	Various	"The Practical Coach" "Coaching Skills for Managers and Supervisors" NTMC—Part of 1-week course "Coaching"	LDI, CareerTrack, AASHTO, JourneyWorks
Facilitation Skills	Managing Meetings	"Facilitation Skills" "Basic Facilitation"	Human Resource Institute ILW Video
Interviewing/Hiring Practices	Legal Issues Affecting the Workplace	"Hiring Smart..." "The Interview..."	LDI Barr Films Video
Managing Meetings	Facilitation Skills	"We've Got to Start Meeting Like This" "Meeting Advantage" "Managing Meetings"	LDI, Franklin Covey, JourneyWorks
Motivation	Various	"Leadership Journey" "Motivating and Recognizing Your Employees"	JourneyWorks LDI
Team Building	Interpersonal Communication, Goal Setting, Facilitation	"How to be a More Effective Team Leader" "How to be a Highly Successful Team Leader" (Two-day course) "How to Lead a Team" "Team Building"	NSG, NSG, CareerTrack, JourneyWorks

Tier III—Intermediate Leader/Manager

Primary Skill	Other Skills	Courses	Providers
Community Relations	Planning, Listening	National Transportation Leadership Institute (NTLI) ---Part of 2-week course "Community Relations"	AASHTO, JourneyWorks

Dealing with Change/ Change Management	Interpersonal Communication, Planning	"Change Management" NTMC, "Dealing w/ Change/ Managing Change" "Dealing with Change"	LDI, AASHTO, JourneyWorks, Mediation Svcs

Primary Skill	Other Skills	Courses	Providers
Planning/ Project Management	Time Management, Delegation, Cost Prediction	"It's the PITS!" "Project Management" (One-day course) "Project Management" (Two-day course)	LDI, Franklin Covey, Franklin Covey
Presentation Skills		"Presentation Advantage" "Train-the-Trainer" "Presentations"	Franklin Covey, WYDOT Training, JourneyWorks
Quality Principles		"Strategic Leadership for State Executives" (SLSE) ---Part of 1-week course, "Best Efforts are Not Enough"	Duke University, Imata CBT
Team Leadership	Listening, Managing Meetings	NTMC (1 wk course) "How to be a Highly Successful Team Leader" (2-day course), "Team Leadership"	AASHTO, NSG, JourneyWorks
Writing Skills		"Technical Writing" "Advanced Effective Writing" "Writing Advantage"	WYDOT Management Services, Franklin Covey

Tier IV—Executive

Primary Skill	Other Skills	Courses	Providers
Media Skills		SLSE (1 wk course), NTMC (1 wk course), NTLI (2 wk course), "Media"	Duke University, AASHTO, AASHTO, JourneyWorks
Mentoring	Listening	"The Mentor Relationship"	LDI
Political Relations	Media relations	SLSE (1 wk course)	Duke University
Public Speaking	Presentations	NTLI (2 wk course), "Communicate With Confidence," "Public Speaking"	AASHTO, LDI, JourneyWorks
Strategic Goal Setting	Planning, Visioning	NTLI (2 wk course), "The 4 Roles of Leadership" (Three-day course), "Strategic Goal Setting"	AASHTO, Franklin Covey, JourneyWorks
Succession Planning	Visioning		Internal mentoring
Visioning	Planning	"The 4 Roles of Leadership" (Three-day course)	Franklin Covey

Knowledge, Skills, and Abilities (KSA) Assessment Tool Guide:

Use the following process to assess which training you or your employees need the most. Although all the KSAs listed are necessary to a well-rounded supervisor, in planning for your personal training and development or for that of your employees, you want to concentrate on developing the most needed areas first.

Step 1: Copy the worksheets beginning on page 9 to use as blank forms for yourself and your employees. Use the forms to assess needs for the leadership and management areas, but you may adapt them by adding additional technical or non-technical areas on page 11 as well.

Step 2: Determine an **Importance Level (IL)** for each KSA needing development for the higher position. *(How vital is this KSA for this job (or the next level up)?)—*

- Critical to the job = 10 points
- Very important to the job = 8 points
- Important to the job = 5 points
- Nice to have = 3 points
- Not often required = 1 point

Step 3: Determine the **Current Performance (CP)** in each KSA. *(How well does the person perform this KSA right now?)—*

- No knowledge or skill= 5 points
- A little knowledge or skill = 4 points
- Can perform moderately = 3 points
- Needs only refresher = 2 points
- Thoroughly developed = 1 point

Step 4: Multiply the Importance Level and Current Performance numbers to find the **Need (N)**. So, **IL x CP = N**.

Step 5: **Rank** the Needs from highest to lowest. **List** the KSAs in order of Need.

Step 6: **Record** training or the skills gained in the last column. Your forms begin on page 9. ➜

Primary Skill Tier I	IL	CP	N	Rank	Tier I Training Need	Training Completed (Date)
Performance Appraisal (Mandatory)					REQUIRED TRAINING	
Anti-Discrimination Training (Mandatory)					REQUIRED TRAINING	
Ethics (Mandatory)					REQUIRED TRAINING	
Workplace Violence Prevention (Mandatory)					REQUIRED TRAINING	
Budgeting/Cost Prediction						
Customer Service						
Dealing with Difficult People/ Conflict Management						
Delegation/ Empowerment						
Disciplining Employees						
Feedback Skills						
Goal Setting						
Grievances/ Complaints						
Interpersonal Communication/ Listening						
Problem Solving/ Decision Making						
Rules Affecting the Workplace						
Stress Management						
Time Management						

Primary Skill Tier II	**IL**	**CP**	**N**	**Rank**	**Tier II Training Need**	**Training Completed (Date)**
Coaching						
Facilitation Skills						
Interviewing/ Hiring Practices						
Managing Meetings						
Motivation						
Team Building						
Primary Skill Tier III	**IL**	**CP**	**N**	**Rank**	**Tier III Training Need**	**Training Completed (Date)**
Community Relations						
Dealing with Change/ Change Management						
Planning/ Project Management						
Presentation Skills						
Quality Principles						
Team Leadership						
Writing Skills						
Primary Skill Tier IV	**IL**	**CP**	**N**	**Rank**	**Tier IV Training Need**	**Training Completed (Date)**
Media Skills						
Mentoring						
Political Relations						
Public Speaking						
Strategic Goal Setting						
Succession Planning						
Visioning						

Additional Skills	IL	CP	N	Rank	Additional Training Need	Training Completed (Date)

Possible Training Providers

Many resources are available to satisfy your training needs. Although the listing below is not all-inclusive, it does describe vendors who are known to WYDOT and have provided us with effective classes and good service. You may contact the providers directly, or you may use the services of the WYDOT Training Program to help find the training you need. Providers are listed alphabetically.

A&I Human Resources

The Wyoming Department of Administration and Information's Training Section routinely sponsors a variety of opportunities for employees and supervisors. A&I provides Performance Appraisal Training and a New Employee Orientation, but both of these are also offered in-house at WYDOT. Throughout the year A&I will offer classes that cover many of the primary skills listed in the WYDOT University plan. They also offer various classes in employee and supervisor enrichment.

A&I advertises their offerings via their web page (http://personnel.state.wy.us/training) and the quarterly "Development Digest." The cost of most A&I offerings is usually low, often free.

CareerTrack/Fred Pryor

CareerTrack/Fred Pryor is a nationally known provider of leadership and management training. They offer many public seminars in Wyoming, most often in Cheyenne and Casper but also in Fort Collins and Denver. Many of their classes emphasize effective communication, customer service, and management skills. They are available to come on-site for classes with at least 30 participants.

Counterpoise

Locally owned consulting and training firm Counterpoise Consulting offers a variety of training classes and facilitation services. Sherri Gregory, President, teaches many courses useful in learning workplace and supervisory skills.

Franklin Covey

Three of WYDOT University's baseline courses come from Franklin Covey. The skills taught by these courses are considered vital to the effective training and development of WYDOT supervisors. In addition to the baseline courses—"Focus," "The 7 Habits of Highly Effective People," and "The 4 Roles of Leadership"—Franklin Covey offers training in project management, presentation skills, effective writing, and other beneficial skills. "Focus" and "7 Habits" are available on Tel8. For in-house classes in "The 7 Habits of Highly Effective People" with our own certified facilitator, contact the WYDOT Training Program.

JourneyWorks

President Dee Dee Raap provides a wide range of highly rated classes at all tiers of the WYDOT University plan.

Leadership Development Institute (LDI)

LDI is a consortium of training providers that includes Lundy and Associates, Chaffee and Associates, Touchstone Training, Alchemy, and a variety of individual trainers. LDI has conducted leadership and management training for WYDOT both on-site and via the Tel8 videoconferencing network. They have a selection of nearly 30 classes that pertain to the primary skills described in the WYDOT University plan.

Mediation Services of Cheyenne, Inc.

Lynn Achter, President, is a former state employee and has a long history of providing training and mediation services in the state government arena. Her associate, Peter Newell, Ph.D., is a long-time trainer and management consultant. In addition to mediation and facilitation services, he teaches several effective communication and change management courses.

National Seminars Group (NSG)

National Seminars Group is a nationally known provider of leadership and management training. They offer many public seminars in Wyoming, most often in Cheyenne and Casper. Many of their classes emphasize effective communication, customer service, and management skills. They are available to come on-site for classes with at least 30 participants.

National Transportation Leadership Institute (NTLI)

This two-week, AASHTO-sponsored course is an intensive experience for senior managers and executives. It offers skill training in many of the areas recommended for Tier III and Tier IV leaders. Conducted at the University of Indiana in Indianapolis, it provides in-depth experiences in team building, presentation skills, planning, quality, and other upper echelon areas. It is offered annually.

National Transportation Management Conference (NTMC)

This one-week, AASHTO-sponsored course is designed for senior supervisors and new managers. It offers a wide range of training needed by rising transportation managers. Leadership is emphasized throughout the course and covers such areas as change management, media relations, motivation, diversity, ethics, team management, and quality principles. It is scheduled quarterly in different regions of the country.

Strategic Leadership for State Executives (SLSE)

The Governor's Center at Duke University in Durham, North Carolina, offers this one-week course directed at senior managers and executives in state government. It emphasizes problem solving and leadership principles using the case study method to give leaders the most realistic training possible. Some of the principles incorporated into the curriculum include public management, quality management, communication, creativity, negotiation, media relations, political relations, and strategic planning.

APPENDIX C: MDT Management Development Program

Organizational Development

The Montana Department of Transportation is pleased to offer a Management Development Program to its employees; this program is coordinated through the Department's Organizational Development Bureau (susana@mt.gov or 444-6262).

This program is offered once per year; it is a nine-month program that consists of a different one-day class for each month of the nine-month program. The topics covered in this program (and the way they are delivered) are continually being evaluated, based on comments from the program's prior participants. Typical topics covered are: Supervisor Orientation; Myers-Briggs Temperament Indicator; Communication & Delegation Skills; Conflict Management; Essentials of Situational Leadership; Management of Meetings & Facilitation Skills; Department Finances; Recruitment & Selection; Performance Appraisals; Discipline; FMLA, ADA, & EEO for Supervisors; A Manager's Role in a Safety Culture; Ethics; and a Round Table Discussion with current members of Management.

In addition to class attendance, participants must complete 45 hours of Independent Study work within one year of completing their enrollment in the courses. Successful completion of both the coursework and the 45 hours of Independent Study will earn the employee the equivalent of one year of Supervisory credit that can be used in the application process for positions within the Department. More information about the Independent Study Program (attached)

There is an application process that must be completed to be considered for enrollment in the program. View a list of criteria to be considered for enrollment in the program (attached)

Class size is limited to 20 participants per location. Every attempt is made to offer equal opportunity for enrollment to all divisions in the Department. When more applications are received than there are openings for attendance, Division/District Administrators are asked to put their division's applications in priority order for enrollment, based on the program's criteria.

Watch the Intranet for announcements about the program's application process each fall, generally speaking, this announcement will be posted in November. This announcement will also be sent to all Division/District Administrators for distribution in their area. Applicants will be notified if they have been accepted into the program by either their Supervisor or their District/Division Administrator. The program will likely begin in February each year, in the locations indicated below.

Though the program-plan is continually evolving, this program will typically be offered in Helena, Butte, and Missoula during the odd-numbered years (2005, 2007, 2009) and be offered in Great Falls, Billings, and Glendive in even-numbered years (2006, 2008, 2010); if there is sufficient interest, a Helena class may be added to the schedule during even-numbered years.

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Independent Study Program

PURPOSE: To supplement your learning from the program and update your existing skills, helping to prepare you for a possible position in management. To allow for focus on topics of greater individual interest and for expansion of the course material.

FACTS: You will be given credit for your attendance in each of the Management Development classroom sessions; to receive the one-year supervisory credit, you must attend all classes and complete 45 hours of independent study.

STUDY TOPICS: Any management related subject, including, but not limited to: communication skills, time management, project management, supervision, leadership, etc. The goal of this program is to gain or enhance skills in the area of getting work done with (and through) other people.

CREDIT OPTIONS: Credit will be given for attendance in training classes, completion of audio-cassette programs, book-reading, and/or viewing of videos. After completing any of these items, a synopsis/summary of what you learned and the amount of time you invested is required. All summaries and training completion certificates must be submitted to the Organizational Development Bureau, ***upon completion of your entire 45 hours of independent study***.

Credit for classes will be given based on hours of attendance; credit for reading, video programs, and audio cassette programs will be given based on the self-reported number of hours invested in the learning activity and writing the synopsis.

Your credits should be earned through a combination of at least two different types of study, such as: reading and training classes; training classes and videos/audio programs, etc. These credits should also cover two to three different topics.

TIME FRAMES: Training classes on management-related topics that were completed within one year of your enrollment in the Management Development Program will be considered for credit. The 45 hours of combined Independent Study work is to be completed within one year of the end of the classroom program in which you were originally enrolled. (E.G., If you attended your classes from January 2004 through September 2004, any training classes completed from January 2003 through September 2005 will be considered for credit.)

You will receive credit for Management Courses taken from the Professional Development Center. The ***Basics of Management*** Series classes count as three months of supervisory credit. Classes related to management, and completed within one year of your enrollment or completion of MDT's classroom work, can also be used to fulfill some of the Independent Study credits, as hours of class attendance.

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Classes taken more than one year prior to your enrollment in the Management Development Program will not be considered for Independent Study credit, as the purpose of this program is to update your skills to better prepare you for a possible position in management.

YOUR RESPONSIBLITIES: In order to ensure you receive proper credit for your Independent Study efforts, you are responsible for tracking your Independent Study work until you 0 complete ***all 45 hours of study***. Upon completion of your study hours, you must submit your records of study and all summaries of your work to the Organizational Development Bureau to receive credit for your efforts. (A tracking form is attached for your use.) Your signature is required at the bottom of this form.

MISSED CLASSES: Wherever possible, any classes missed should be made up within the same month as the missed class. If this is not possible, classes should be made up within one year of your completion of the classroom portion of the training.

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Management Development Program Criteria

The following criteria were established to assist in consistently determining who is eligible to participate in the program. This is a beginning management development program; successful completion of the entire program earns the employee credit for one year of management experience.

Criteria:

1. Priority will be given to those applicants who hold positions directly below a first line supervisory position.
2. The applicant for the program must have completed an application form
3. Applicant approval will be determined by the applicant's supervisor and Administrator. Administrators will then submit recommendations **in order of priority** to the Organizational Development Bureau.
4. The Supervisor and Administrator will use the following considerations to assist them in the approval process.

    a. What is the level of work quality in the applicant's current position?
    b. Is there a demonstrated work ethic?
    c. Is the applicant open-minded, demonstrating flexibility in ways of doing business?
    d. Applicant has demonstrated an interest in moving into a management role.
    e. Applicant possesses the basic knowledge, skills, and abilities:

        1. Listens and communicates well;
        2. Works effectively with others;
        3. Has problem solving and decision making skills.

APPENDIX D: MDT Highways and Engineering Conference Agenda

Highways and Engineering Conference- 2006

Holiday Inn Grand Montana/Montana Convention Center

Billings, Montana

Montana Department of Transportation
MDT
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MDT/FHWA Only

Tuesday - February 28, 2006

Day 1

Time	Missouri	Stillwater	Gallatin	Bitterroot	Big Horn		Parking Lot
8:30 - 4:00 pm	**Registration Check-in: Lobby of the Montana Convention Center**						FHWA Mobile Concrete Laboratory
10:00 am - 12:00 pm	**District Meetings**						
	District 1 Missoula	District 2 Butte	District 3 Great Falls	District 4 Glendive	District 5 Billings		
12:00 - 1:00 pm	**LUNCH with PowerPoint show** *(Montana Convention Center)*						
12:45 - 1:45	**Opening Comments & Welcome--** Loran Frazier (moderator), Jim Walther, Mark Wissinger, Jim Lynch, and Michael Kulbacki *(Montana Convention Center)*						
1:45 - 2:00	**BREAK**				**BREAK**		
2:00 - 3:00	**Site Manager Overview -** Jim Ferguson, Nebraska Department of Roads *(Montana Convention Center)*						
3:00 - 3:30	**Outreach & Tips for Dealing with the Media-** Charity Watt-Levis *(Montana Convention Center)*						
3:30 - 3:45	**BREAK**					**BREAK**	
3:45 - 5:00	**Legal Issues & E-mail Procedures-** Steve Garrison *(Montana Convention Center)*						
5:00 - 5:30	**Opening Guest Speaker**- Lou Bergholz *(Montana Convention Center)*						
5:30 - 7:30	Social with appetizers and no-host bar *(Montana Convention Center)*						

Highways and Engineering Conference- 2006

Holiday Inn Grand Montana
Billings, Montana

MDT/FHWA Only

Montana Department of Transportation — serving you with pride

Wednesday, March 1, 2006
Day 2

Time	Track 1 Missouri	Track 2 Stillwater	Track 3 Gallatin	Track 4 Bitterroot	Track 5 Big Horn	Track 6 Lewis & Clark	Track 7 Yellowstone	Track 8 Aspen	Parking Lot	OFF SITE TRAINING/TOURS
7:30 A - 4:00 P	Registration Check-in: Holiday Inn Lobby									
8:00 - 8:50 AM 9:00 - 9:50	**Surface to Subgrade Stabilization Treatments Guide & Decision Tree-** Bill Fogarty, Dan Hill, Fred Beal, & Greg Halsted, Portland Cement Association	**MDT Value Analysis & Constructability Review Process-** Mac McArthur, Gerry Brown, & Ray Sacks	**Buy America-** Pat Ernst & Anson Moffett	**Railroad Crossing Quiet Zones-** Deborah Wojnicz, Federal Rail Administration	**Improvisational Management & Leadership Performance Training-** Lou Bergholz Class size = 30	**How to Win the Fight! Change Orders & Claims-** SDC & Associates (all day class) Class size = 30	**Equal Employment Opportunity /Age-** Jim Phillips ***EEO Credit***	First Aid/ CPR- Mary Walser, Billings Deaconess Clinic Class size = 24	**FHWA Mobile Concrete Laboratory**	
9:50	BREAK									
10:00 - 10:50	**Geotech Update & Reviews (Why we do the crazy things we do)-** Scott Helm & Cameron Kloberdanz	**Contract Administration of Buildings & Facilities-** Larry Murolo & Mark Wissinger	**Critical Path Method Basics-** Jim Walther	**Ignition Burner Ovens-** Jody Bachini	**Environmental Best Practices Roundtable-** Stacy Aguirre, Dan Ham, Dave Hill, Stacy Hill, & Ray Studebaker	**How to Win the Fight! Change Orders & Claims-** SDC & Associates (all day class)	**Quality Customer Service-** Kathy McNeil, PDC	First Aid/ CPR- cont.		Traffic Control Database- DD Clearman- Bring your laptop if you have it ***Billings District Conference Room***
11:00 - 11:50	**Environmental Special Provisions- Fact or Fiction?-** Phil Johnson & Larry Sickerson	**ADA Ramp Design- Design & Construction Issues-** Alice Flesch, Scott Keller, & Bill Fogarty ***EEO Credit***	**Lab Testing & Specification Issues-** Jeff Rayman, Scott Barnes, Matt Strizich, Anson Moffett, & Jeff Burner	**OPX 2 Project Management-** Damian Krings & Mike Dyrdahl	**Introduction to Understanding Plans-** Kevin Christensen					
12:00	LUNCH- on your own									
1:00 - 1:50 PM 2:00 - 2:50	**Nuclear Densometer-** Rex Hoy	**Statewide Traffic Control Review-** Mark Baum & Lloyd Rue	**Materials/Lab Roundtable-** Matt Strizich & Mark Wissinger	**Earthworks & Mass Diagrams-** Clay Blackwell	**ADA & Reasonable Accommodation-** Alice Flesch ***EEO Credit***	**How to Win the Fight! Change Orders & Claims-** SDC & Associates (all day class)	**Quality Customer Service-** Kathy McNeil, PDC	First Aid/ CPR- cont.	**FHWA Mobile Concrete Laboratory**	**Cretex Pre-stress Plant Tour @ 1:30-** limit to 20 and need to sign up on day of tour and bring hard hat (1521 South 32nd- near 32nd & Hesper)
2:50	BREAK									
3:00 - 3:50	**Nuclear Densometer-** Rex Hoy	**Plant Mix Overview-** Matt Strizich, Scott Barnes, Danny Hood, & Pat Ernst	**FHWA Mobile Concrete Laboratory-** Geoff Krugan, FHWA	**Site Manager Daily Work Reports-** Lori Stanich & Pam Keith, InfoTech	**Claims Class-** Mark Wissinger & Lisa Durbin Class size = 35	**How to Win the Fight! Change Orders & Claims-** SDC & Associates (all day class)	**FMLA Training-** Bonnie McElroy	**MAXCOM- Hazardous Communication-** Matt Chambers Class size = 20		
4:00 - 5:00			**OPX 2 Project Management-** Damian Krings & Mike Dyrdahl	**Estimator & DSS Database-** Suzy Althof, Jeff Meyer & Tim Tilton						

Highways and Engineering Conference- 2006

Holiday Inn Grand Montana

Billings, Montana

OPEN

Contractors, Consultants, & Other Agencies

Thursday - March 2, 2005

Day 3

7:30 A - 3:00 P	Registration Check-in: Holiday Inn Lobby									
Time	Track 1 Missouri	Track 2 Stillwater	Track 3 Poolside Terrace	Track 4 Bitterroot	Track 5 Big Horn	Track 6 Lewis & Clark	Track 7 Yellowstone	Track 8 Aspen	Parking Lot	OFF SITE TRAINING/TOURS
8:00 - 8:50 AM	**Nuclear Densometer-** Rex Hoy *MDT only*	**Understanding Electrical Plans & Projects-** Steve Keller	**Environmental Best Practices Roundtable-** Stacy Aguirre, Dan Ham, Dave Hill, Stacy Hill, & Ray Studebaker	**Geotextiles-** Brian Collins & Bret Boundy	**Improvisational Management & Leadership Performance Training-** Lou Bergholz *MDT only* Class size = 30	**Micro Station-Custom Programs for MDT-** Bob Cummings	**DBE Program Management-** Bill Anderson	First Aid/ CPR- Mary Wetsel, Billings Deaconess Clinic Class size = 24	**FHWA Mobile Concrete Laboratory**	
9:00 - 9:50			**Milk River Emergency Bridge Repair-** Jim Walther & John Pavsek			**Saximeters-** Tony Cerovski & Janet Black *MDT only*				
9:50	BREAK									
10:00 - 10:50	**Beartooth Highway Emergency Repair Project-** Stefan Streeter, John Shoff, Teri Dewing, Jordan Grover & Karen Fagg- HKM	**Plant Mix Overview-** Matt Strizich, Scott Barnes, Danny Hood, & Pat Ernst	**Consultant Plans-Errors & Omissions Procedures-** Tim Conway, Tom Martin, & Paul Jagoda	*presentation cancel*	**FMLA Training-** Bonnie McElroy	**ADA & Accessibility-** Alice Flesch *EEO Credit*	**Library Services-** Sue Sillick	First Aid/ CPR- cont.		
11:00 - 11:50			**Report Writing-** Damian Krings & Paul Ferry	**Retaining Walls on Polson-East-** Mary Stelling & Kathy Harris, Stelling Engineers						
12:00	LUNCH- on your own									
1:00 - 1:50 PM	**Bat Use of Highway Bridges-** Bryce Maxell & Paul Hendricks	**FHWA Mobile Concrete Laboratory-** Geoff Krugan, FHWA	**Critical Path Method Basics-** Jim Walther	**SAFETEA-LU Review-** Sandy Straehl & Jim Skinner	**Teamwork on MDT Projects-** Rebecca Johnson & Paul Hutter	**Research Program Overview-** Craig Abernathy	**Detours- Selection & Design-** Paul Ferry & Lesly Tribelhorn	First Aid/ CPR- cont.		**Cretex Pipe Plant Tour @ 1:30-** limit to 20 and need to sign up on day of tour and bring hard hat (4240 Neibauer Rd- west of the Shiloh Intch.)
2:00 - 2:50	**Specifications Update-** Dan Smith & Ryan Antonovich	**Flowable Fill-** Mac McArthur & Mike Lynch	**ADA Ramp Design- Design & Construction Issues-** Alice Flesch, Scott Keller, & Bill Fogarty *EEO credit*			**Micro Station-Custom Programs for MDT-** Bob Cummings	**TAP-** Prudy Hulman			
2:50	BREAK									
3:00 - 3:50	**Meth Lab Waste Sites-** Daniel Dunlap-DEA	**Earthworks & Mass Diagrams-** Clay Blackwell	**Geotech Update and Reviews (Why we do the crazy things we do)-** Scott Helm & Cameron Kloberdanz	**MDT's Expedited Project Delivery Program-** Mark Wissinger, Paul Jagoda, & Mac McArthur	**Prevailing Wage Certified Payrolls-** Jim Phillips	**Saximeters-** Tony Cerovski & Janet Black *MDT only*	**Detours- Selection & Design-** Paul Ferry & Lesly Tribelhorn	**MAXCOM- Hazardous Communication-** Matt Chambers Class size = 20		
4:00 - 5:00	**Route Naming & Reference Posting-** Zia Kazimi		**404 Permit-The Low Down on "Gittin er Done!"-** Tom Gocksch			**Saximeters-** Tony Cerovski & Janet Black *MDT only*				

2006 MDT Highways & Engineering Conference Syllabus

February 28 - March 2, 2006

Holiday Inn Grand Montana, Billings

404 Permit- the Low Down on "Gittin er Done"!- (instructor: Tom Gocksch) This presentation will cover what the 404 Permit is, what information is necessary for an application to be complete, and the timing of submitting the application.

ADA and Accessibility- (instructor: Alice Flesch) This class will cover the ADA guidelines that need to be followed on all projects to be compliant. The class will include curb cuts, detail drawings, and design guides. **EEO Credit**

ADA and Reasonable Accommodation- (instructor: Alice Flesch) This class will cover the ADA process and definitions of the new policy. It will also cover how to handle a request for accommodation. **EEO Credit**

ADA Ramp Design- Design and Construction Issues- (instructors: Alice Flesch, Scott Keller, and Bill Fogarty) This course will address the design requirements for newly constructed ADA ramps (new and retrofit). Construction issues and concerns when retro fitting ADA ramps into existing sidewalk section will also be covered. **EEO Credit**

Bat Use of Highway Bridges- (instructors: Paul Hendricks and Bryce Maxell of Montana Natural Heritage Program) This presentation will cover how to identify bat use of bridges, structural feature types that bats are likely to use, and potential mitigation of construction and maintenance activities for bats. Discussion and suggestions for working around habitats used by bats and disease risks associated.

Beartooth Highway Emergency Repair Project- (presenters: Stefan Streeter, John Shoff, Terry Dewing, Jordan Grover, and Karen Fagg of HKM Engineering, Inc.) This presentation covers the 2005 Beartooth Highway Emergency Repair project. It is an overview of the teamwork that completed this design build project.

Buy America- (instructors: Pat Ernst and Anson Moffett) This session will discuss how to rapidly identify heat numbers and the supporting documentation supplied by the contractor.

***Claims Class-** (instructors: Mark Wissinger and Lisa Durbin) In this class you will review actual claims, and the outcome, with hands-on problem solving. Emphasis will be on the processes, understanding the importance of proper documentation, and mitigation and issue resolutions.
Pre-register: class sized limited to 35

Contract Administration of Buildings and Facilities- (presenters: Larry Murolo and Mark Wissinger) This session will cover the processes to follow for special provisions in facilities contracts, change order authority, and discussion of final acceptance.

Consultant Plans- Errors and Omissions Procedures- (presenters: Tim Conway, Tom Martin, and Paul Jagoda) This informational session will cover when to implement this procedure and the roles of the MDT engineering project manager and MDT consultant project manager.

Critical Path Method Basics- (instructor: Jim Walther) Having trouble understanding OPX2? Are those pesky construction CPM diagrams confusing? This class will demonstrate the basics of the Critical Path Method with an interactive garage building exercise. We crudely design a garage and then create a simple CPM schedule to build it. Concepts covered will be critical path activities, float, durations, dependant and independent activities, flowcharts and crashing schedules.

DBE Program Management- (instructor: Bill Anderson) This class will cover DBE CFR regulations, working with DBE forms, and standardized reporting protocol.

Detours- Selection and Design- (instructors: Lesly Tribelhorn and Paul Ferry) After attending this class, one should be able to evaluate the pros and cons of various types of detours, assess cost effectiveness, determine applicable design criteria, address constructability issues and minimize environmental impacts of temporary detours.

E-mail Procedures- (instructor: Steve Garrison) Explanation of MDT's e-mail procedures, including the legal requirements and restrictions on state employee e-mail.

Earthworks and Mass Diagrams- (instructor: Clay Blackwell) This session will give participants a better understanding of mass diagrams; a method to graphically represent the amount of material that will be cut and used for fill on any earth work job.

Environmental Best Practices Roundtable and Introduction to District Environmental Engineers- (panel: Stacy Hill, Stacy Aguirre, Dave Hill, Ray Studebaker, and Dan Ham) Introduce the district environmental engineers along with their duties and responsibilities. Learn how these people can assist, improve construction site compliance with environmental regulations, and an open session for questions.

Environmental Special Provisions-Fact or Fiction- (instructors: Phil Johnson and Larry Sickerson) Learn how environmental special provisions are born, their importance to the project, and how to avoid the legal ramifications that can occur if a project's design is altered in the field during construction. An open discussion to follow.

Equal Employment Opportunity/Age- (instructor: Jim Phillips) This class will cover the elements of the Age Discrimination Employee Act of 1967, listening skills practice and problem-solving exercises consisting of age related issues. **EEO Credit**

Estimator and Decision Support System (DSS) Database- (instructors: Suzy Althoff, Jeff Meyer and Tim Tilton) This session will go over the bid history and where Estimator data comes from and how to use it. The session will show how to create an estimate from the programs and be able to find bid history prices in the DSS database.

FHWA Mobile Concrete Laboratory *[located in the hotel parking lot]*- Tour the mobile lab and see the technology used in the program.

FHWA Mobile Concrete Laboratory Presentation- (presenter: Geoffrey Kurgan- FHWA) A review of the technology used in the mobile lab and talk about some of the projects that the lab has recently visited.

Flowable Fill- (instructors: Mac McArthur and Mike Lynch) This presentation will cover What? When? and How? of flowable fill.

First Aid / CPR** - (instructor: Mary Walser- Billings Deaconess Clinic) This will allow certified personnel to be certified for two years. We will be offering the Basic First Aid and Adult CPR together as one 6-hour course. ***Pre-register: class sized limited to 24

FMLA Training- (instructor: Bonnie McElroy) This class covers MDT's Family and Medical Leave Act Policy. What it is, what an employee's rights and responsibilities are, how FMLA works with paid leave and what conditions qualify for its use.

Geotech Update and Review (Why We Do the Crazy Things We Do)- (instructors: Scott Helm and Cameron Kloberdanz) This is an update and discussion of some of the new geotech design requirements beginning to appear in upcoming projects, including pile driving, MSE walls, reinforced slopes, and moisture sensitive soils.

Geotextiles- (instructors: Brian Collins and Bret Boundy) Geotextiles- materials, specifications, and stabilization. This course is intended for all construction personnel and road designers. Topics will include: geotextile properties, geotextile applications in highway construction, the new Standard Specification for Geotextiles, and using geotextiles/geogrid to stabilize soft subgrades.

How to Win the Fight! Change Orders and Claims**- (instructor: SDC and Associates) A basic introduction to maximizing profits on change orders and claims. Includes information on procedures and process, types and sources, bi-lateral and unilateral COs, when not to sign change orders, pricing and negotiating, defective plans and specs, five elements of REA claims, extended overhead costs and insider tips. ***Pre-register: class sized limited to 30

Ignition Burner Ovens- (instructor: Jody Bachini) This class provides an overview of the basic use and operation of the ignition burner ovens. The Troxler ignition ovens are used to determine if the plant mix used on our projects is in compliance with the project mix design.

Introduction to Understanding Plans- (instructor: Kevin Christensen) Through practical applications, discussion, and a real life scenario, the student will learn to navigate through a set of plans. This course is designed for newer employees or anyone that wants a basic review.

Improvisational Management and Leadership Performance Training**- (instructor: Lou Bergholz) This workshop is designed to improve participants' ability to build trust and teamwork, foster better communication, promote creative problem solving, and respond quickly and decisively to unanticipated challenges. ***Pre-register: class sized limited to 30. For supervisors and above.

Lab Testing and Specification Issues- (panel: Jeff Rayman, Scott Barnes, Matt Strizich, Anson Moffett, and Jeff Burner) This session is to help ensure testing procedures are the same from district to district by updating and formalizing testing procedures, training, and equipment. There will be questions and answers on problems encountered and discussions on such topics as compaction temperatures, calibrating ignition ovens, and quartering moisture procedures.

Legal Issues- (instructor: Steve Garrison) A summary of the legal issues from 2005 and advice for 2006.

Library Services- (instructor: Sue Sillick) This training demonstration shows searching various library catalogs and databases. If you search the Internet for publications and information needed to do your job this training is for you. It will provide you with tools to increase your searching efficiency and effectiveness.

Materials/Lab Round Table- (presenters: Matt Strizich and Mark Wissinger) This session will provide lab supervisors (District, area and Helena) and construction personnel the opportunity to discuss the need for consistency and uniformity in testing, materials forms (changes/problems), testing turn-around times or other problems encountered during the construction season. This session will also provide field personnel an opportunity to have questions/concerns addressed.

***MAXCOM/ Hazardous Communication**- (instructor: Matt Chambers) During this session employees will be informed of their "Right to Know" of the hazards of chemicals in the workplace and how to protect themselves and co-workers of potential hazards. Class size limit to 20 participants

MDT's Expedited Project Delivery Program- (instructors: Mark Wissinger, Paul Jagoda, and Mac McArthur) Understand the methods and techniques used by MDT during preconstruction, advertising, bidding, and during construction to expedite various types of transportation projects.

MDT's Value Analysis and Constructability Review Process- (instructors: Mac McArthur, Gerry Brown, and Ray Sacks) Understand the Value Analysis and Constructability Review process and how to implement it as a tool to improve the overall long-term quality of MDT plans and specifications. During this presentation, attendees will step through the constructability process.

Methamphetamine Lab Waste Sites- (instructor: Daniel Dunlap of the Drug Enforcement Administration, United States Department of Justice) This session is for informing employees the hazards involved with meth lab waste. It will include how to identify a waste site and notifying the appropriate authorities.

Micro Station-Custom Programs for MDT- (instructor: Robert Cummings) A demonstration of custom MicroStation programs for MDT. Demonstrations of new Macros and VBAs used.

Milk River Emergency Bridge Repair- (presenters: John Pasvek of Morrison Maierle, Inc. and Jim Walther) This presentation highlights the teamwork between MDT, consultants, and contractors on the Milk River emergency bridge repair on US 2.

Nuclear Densometer- (instructor: Rex Hoy) This class will provide the annual recertification/refresher to operate and transport Nuclear Densometers. There are three sessions available.

OPX 2 Project Management- (instructors: Mike Dyrdahl and Damian Krings) Through a demonstration and discussion, this session will cover schedule development, task status tips and tricks, information gathering using reports, and project manager, functional manager and supervisory responsibilities.

Outreach and Tips for Dealing with the Media- (instructor: Charity Watt Levis) This general session is a refresher on tips and guidelines in order to improve the probability MDT's message is accurately and fairly reported by gaining control of the interview by using various tools and techniques.

Plant Mix Overview- (panel: Matt Strizich, Scott Barnes, Danny Hood, and Pat Ernst) This presentation will cover recent and proposed revisions to the plant mix surfacing policies and specifications. Specific areas of discussion will be the use of ½ in Grade S plant mix; ride specification, compaction issues, gravel treatment, and proposed revision to the Grade S and Grade D Commercial plant mix specifications.

Prevailing Wage Certified Payrolls- (instructor: Jim Phillips) This class will focus on formula based auditing computations, regulatory guides and interpretations, as well as, the process, procedures and protocol involved.

Quality Customer Service- (instructor: Kathy McNeil of the Professional Development Center) Customer service is vital to your business success, whether it is a private company or government agency. But many times we don't even realize that our customer base is very diversified. This seminar will provide all public-contact people (front-line receptionists to department heads) with the skills they need to analyze the customer base and provide excellent service to all those "publics"

Railroad Crossing Quiet Zones- (instructor: Deborah Wojnicz of the Federal Rail Administration) This class will cover the final rule adopted by the Federal Railroad Administration for the creation of Quiet Zones (A corridor of railroad crossing(s) where the locomotive horn is not sounded). Discussion in the process of implementing a Quiet Zone and the requirements of additional safety measures needed to compensate for the absence of the locomotive horn.

Report Writing- (instructors: Damian Krings and Paul Ferry) Topics cover in this class include the correct format and content for Preliminary Field Review, Alignment and Grade, and Scope of Work Reports. In addition, the class will cover the issues that are critical and what information needs to be addressed in each report.

Research Program Overview- (instructor: Craig Abernathy) Come and find out what the Research Program is all about. In this session, you'll hear about the services that Research provides to help you in your job, including funding and discussion of participant needs and how research may be able to meet those needs.

Retaining Walls on the Polson-East Project- (instructors: Mary Stelling and Kathy Harris of Stelling Engineers) An overview of the design and construction of the retaining wall on the Polson-East project.

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Route Naming and Reference Posting- (instructor: Zia Kazimi) There is a method to the madness- this presentation will explain the process MDT uses for route naming and reference posting of our roadways.

SAFETEA-LU Review- (presenters: Sandy Straehl and Jim Skinner) Be informed! Learn about the Safe, Accountable, Flexible, Efficient Transportation Equity Act.

Saximeters- (instructors: Tony Cerovski and Janet Black) This class will demonstrate use of Saximeter for recording pile driving operations, keeping records, and using sound triggering saximeters.

SiteManager Daily Work Reports- (instructors: Lori Stanich and Pam Keith of InfoTech) During this session, participants will gain a better understanding of how to administer daily work reports in SiteManager. This session is intended for construction field personnel.

SiteManager Overview- (presenter: Jim Ferguson of the Nebraska Department of Roads) Learn about SiteManager from someone that has gone through the implementation process and using it.

Specifications Update- (instructors: Dan Smith and Ryan Antonovich) Will cover the changes in the new *2006 Specification Book* and clarify the change over process.

Statewide Traffic Control Reviews 2005- (instructors: Mark Baum and Lloyd Rue) This session will provide a summary of the statewide review of traffic control on MDT projects in 2004. Items to be covered are the areas of good practice and areas where MDT should focus on improvement. This session would be beneficial for MDT staff that is responsible for traffic control on MDT projects.

Surface to Subgrade Stabilization Treatments Guide and Decision Tree- (panel: Bill Fogarty, Dan Hill, Fred Beal, and Greg Halsted of the Portland Cement Association) Present and discuss options available for subgrade and soil stabilization for use during the design and construction phases of a project.

*__Traffic Control Database__- (instructor: DD Clearman) Learn and become proficient in the use of the database that is a tool used for r the estimation of the planned quantities of traffic control placed in project contracts. *NOTE*: ***Class is being held at the Billings District Office- 424 Morey Street***

Participants need to bring their laptops to this class, if you have them with you.

Teamwork on MDT Projects- (instructor: Rebecca Johnson and Paul Hutter) this class will discuss skill and examples of teamwork on MDT projects, including communicating effectively and working together.

Transportation Awareness Program (TAP)- (instructor: Prudence Hulman) The Transportation Awareness Program is a way to make a difference in your life. This informational session is an informative and FUN way to learn more about the Transportation Awareness Program and the Department of Transportation.

Understanding Electrical Plans & Projects- (instructor: Steve Keller) This presentation is a summary on reading electrical drawings and the process/steps for an electrical inspection on a construction job, as well as on how to manage electrical jobs in a contract.

TOURS-

Wednesday, March 1 at 1:30 pm at the front office of the Cretex Pre-stress Plant (1521 South 32nd. near the intersection of 32nd and Hesper). *Need to sign up on day of tour and bring your hard hat.* Tour is limited to 20 people.

Thursday, March 2 at 1:30 pm at the front office of the Cretex Pipe Plant (4240 Neibauer Rd.- west of the Shiloh Interchange). *Need to sign up on day of tour and bring your hard hat.* Tour is limited to 20 people.

APPENDIX E: TLN Videoconference Network

The Transportation Learning Network

A Network of Networks

TLN Sites

1. CSU – Fort Collins, CO
2. NDSU – Fargo, ND
3. SDSU – Brookings, SD
4. UW – Laramie, WY
5. U of U– Salt Lake City, UT
6. MDT – Helena, MT
7. NDDOT – Bismarck, ND
8. WYDOT – Cheyenne, WY
9. WYDOT – Basin, WY
10. WYDOT – Casper, WY
11. WYDOT – Laramie, WY
12. WYDOT – Rock Springs, WY
13. WYDOT – Sheridan, WY

MetNet Sites

14. MDT – Billings, MT
15. MDT – Bozeman, MT
16. MDT – Butte, MT
17. MDT – Glendive, MT
18. MDT – Great Falls, MT
19. MDT – Havre, MT
20. MDT – Helena, MT (Planning)
21. MDT – Kalispell, MT
22. MDT – Lewistown, MT
23. MDT – Miles City, MT
24. MDT – Missoula, MT
25. MDT – Wolf Point, MT

IVN Sites

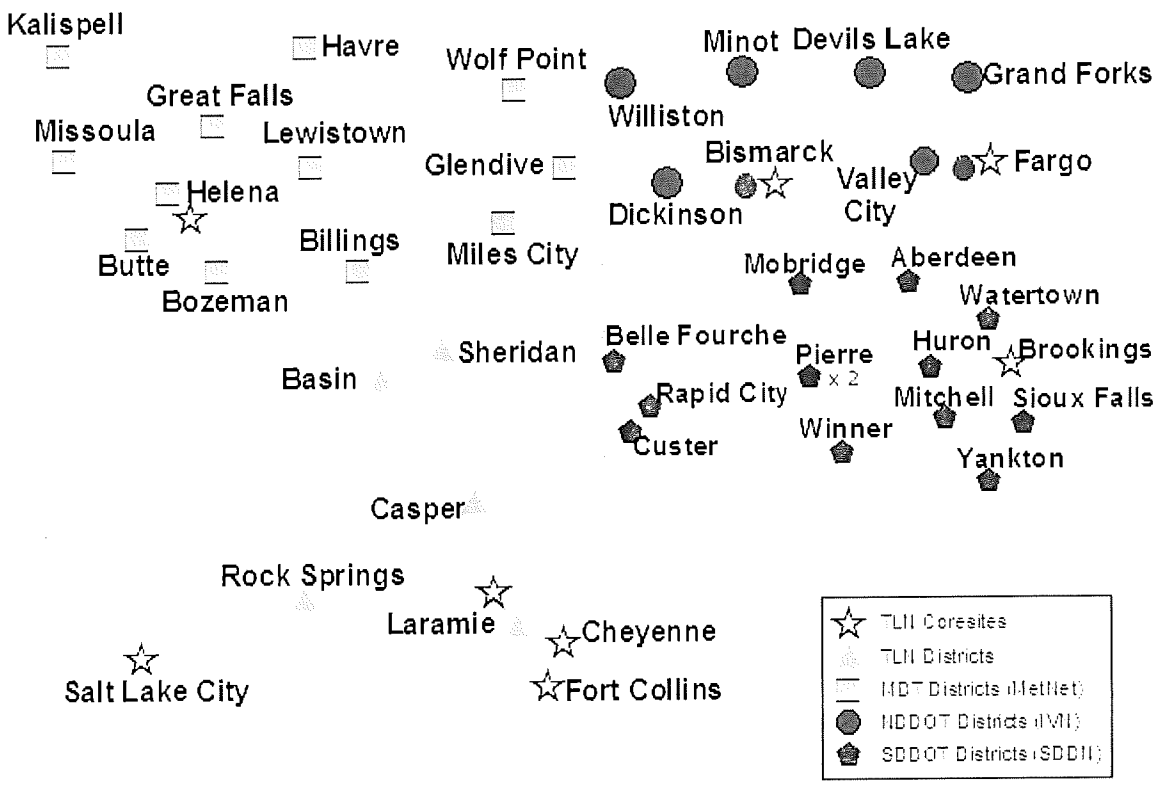
26. NDDOT – Bismarck, ND
27. NDDOT – Devils Lake, ND
28. NDDOT – Dickinson, ND
29. NDDOT – Fargo, ND
30. NDDOT – Grand Forks, ND
31. NDDOT – Valley City, ND
32. NDDOT – Minot, ND

SDDN Sites

33. SDDOT – Pierre, SD (HQ)
34. SDDOT – Aberdeen ,SD
35. SDDOT – Belle Fourche, SD
36. SDDOT – Custer, SD
37. SDDOT – Huron, SD
38. SDDOT – Mitchell, SD
39. SDDOT – Mobridge, SD
40. SDDOT – Pierre, SD
41. SDDOT – Rapid City, SD
42. SDDOT – Sioux Falls, SD
43. SDDOT – Watertown, SD
44. SDDOT – Winner, SD
45. SDDOT – Yankton, SD

Transportation Learning Network
A Partnership of DOTs and Universities

Network Locations



APPENDIX F: TLN Budget (2006-2008)

TLN Budget FY07

Fixed Costs	FY06 Budget	FY07 Budget	CSU	NDSU	SDSU	UofUT	UofWY	MDT	NDDOT	SDDOT	WYDOT	DOT Fund
							Fixed Costs					
Salaries, Wages, and Fringes												
Executive Director	$ 15,038	$ 15,640										
Fringe Benefits		$ 4,692										
Support Staff		$ 13,520										
Fringe Benefits		$ 3,120										
Webmaster		$ 7,207										
Fringe Benefits		$ 2,162										
Technician	$ 16,349	$ 17,003										
Fringe Benefits	$ 9,416	$ 5,101										
TOTAL Shared Salaries and Benefits	$ 40,803	$ 68,444	$ 7,604.92	$ 7,604.92	$ 7,604.92	$ 7,604.92	$ 7,604.92	$ 7,604.92	$ 7,604.92	$ 7,604.92	$ 7,604.92	$ 30,419.70
Executive Director	$ 19,231	$ 47,540										
Fringe Benefits	$ 5,769	$ 14,262										
Technical Training Director		$ 36,630										
Fringe Benefits		$ 10,989										
TOTAL DOT-Only Salaries and Benefits	$ 25,000	$ 109,422	$ -	$ -	$ -	$ -	$ -	$27,355.41	$27,355.41	$27,355.41	$27,355.41	$109,421.62
(UGPTI Salary Subsidy)	$ 18,631	$ -										
Operating Expenses												
Service Maintenance Agreement		$ 35,238	$ 3,025.33	$ 3,025.33	$ 2,370.33	$ 3,025.33	$ 3,025.33	$ 2,370.33	$ 3,025.33	$ 2,370.33	$13,000.33	$ 20,766.33
Equipment Purchase		$ 30,000	$ 3,333.33	$ 3,333.33	$ 3,333.33	$ 3,333.33	$ 3,333.33	$ 3,333.33	$ 3,333.33	$ 3,333.33	$ 3,333.33	$ 13,333.33
Equipment Lease	$ 163,476	$ 163,476	$12,135.92	$17,233.92	$ 6,128.32	$32,864.33	$12,135.92	$ 9,437.46	$21,037.71	$ 5,449.31	$55,128.96	$ 91,053.44
TOTAL Operating Expenses	$ 163,476	$ 228,714	$18,494.59	$23,592.59	$11,831.99	$39,223.00	$18,494.59	$15,141.13	$27,396.38	$11,152.98	$71,462.63	$125,153.11
Network Expenses												
Network Access Charges	$ 63,321	$ 81,321										
TOTAL Fixed Network Expenses	$ 63,321	$ 81,321	$ 9,035.71	$ 9,035.71	$ 9,035.71	$ 9,035.71	$ 9,035.71	$ 9,035.71	$ 9,035.71	$ 9,035.71	$ 9,035.71	$ 36,142.83
Total Fixed Costs	$ 292,600	$ 487,901										
Annual Cost per DOT Site	$ 46,562	$ 75,284						$ 59,137	$ 71,392	$ 55,149	$ 116,456	$ 301,137
Monthly Cost per DOT Site	$ 3,880	$ 6,274						$ 4,928	$ 5,949	$ 4,596	$ 9,622	$ 25,095
Annual Cost per MPC Site	$ 38,229	$ 38,966	$ 35,135	$ 40,233	$ 28,473	$ 55,864	$ 35,135					
Monthly Cost per MPC Site	$ 3,186	$ 3,247	$ 2,928	$ 3,353	$ 2,373	$ 4,655	$ 2,928					
Variable Costs							Variable Costs					
Operating Expenses												
Travel	$ 1,000	$ 1,000										
Communications, Printing, Office Supplies	$ 3,000	$ 3,000										
TOTAL Shared Operating Expenses	$ 4,000	$ 4,000	$ 444.44	$ 444.44	$ 444.44	$ 444.44	$ 444.44	$ 444.44	$ 444.44	$ 444.44	$ 444.44	$ 1,777.78
Travel (NTTD, NHI, FC, etc.)	$ 4,000	$ 4,000										
Training												
Franklin Covey	$ -	$ 5,000										
Executive Forum		$ 3,590										
National Highway Institute	$ 12,000	$ 12,000										
Leadership Development Institute	$ 19,450	$ 21,600										
MPC Courses	$ 10,000	$ 10,000										
Enhanced Programs		$ 10,000										
CRM Videos	$ 1,200	$ 1,800										
New Programs		$ 5,000										
Communications, Printing, Office Supplies	$ 1,000	$ 1,000										
TOTAL DOT-Only Operating Expenses	$ 47,650	$ 73,990	$ -	$ -	$ -	$ -	$ -	$18,497.50	$18,497.50	$18,497.50	$18,497.50	$ 73,990.00
Network Expenses												
ISDN Usage Charges	$ 2,568	$ 2,568										
TOTAL Network Expense	$ 2,568	$ 2,568	$ 285.33	$ 285.33	$ 285.33	$ 285.33	$ 285.33	$ 285.33	$ 285.33	$ 285.33	$ 285.33	$ 1,141.33
Total Variable Costs	$ 54,218	$ 80,558										
Annual Cost per DOT Site	$ 16,822	$ 25,036						$ 19,227	$ 19,227	$ 19,227	$ 19,227	$ 76,909
Monthly Cost per DOT Site	$ 1,402	$ 2,136						$ 1,602	$ 1,602	$ 1,602	$ 1,602	$ 6,409
Annual Cost per MPC Site	$ 938	$ 748	$ 730	$ 730	$ 821	$ 730	$ 730					
Monthly Cost per MPC Site	$ 78	$ 62	$ 61	$ 61	$ 68	$ 61	$ 61					
TOTAL TLN Costs	$ 346,818	$ 568,459										
Annual Cost per DOT Site	$ 63,384	$ 126,015						$ 78,364	$ 90,620	$ 74,376	$ 134,688	$ 378,046
Monthly Cost per DOT Site	$ 5,282	$ 10,501						$ 6,530	$ 7,552	$ 6,198	$ 11,224	$ 31,504
Annual Cost per MPC Site	$ 39,167	$ 39,716	$ 35,865	$ 40,963	$ 29,294	$ 56,593	$ 35,865					
Monthly Cost per MPC Site	$ 3,264	$ 3,310	$ 2,989	$ 3,414	$ 2,441	$ 4,716	$ 2,989					

9 members
4 DOTs
5 MPC

Tel8 (TLN)
Pooled Fund Study Extension
Budget for 2006-2008

Estimated Operating Costs for 2006-07

Salaries, Wages, and Fringes	$	132,446
Equipment Expenses	$	125,153
Network Expenses	$	37,284
Operating Expenses	$	2,444
Programming/Training	$	112,115
Estimated Total 2006-07 (all 4 DOT members)	$	409,442

Estimated Operating Costs for 2007-08

Salaries, Wages, and Fringes	$	145,139
Equipment Expenses	$	20,766
Network Expenses	$	33,284
Operating Expenses	$	2,444
Programming/Training	$	113,725
Estimated Total 2007-08 (all 4 DOT members)	$	315,359

Note: This estimated budget does not include any additional equipment or training expenses that may be authorized by the Board of Directors.

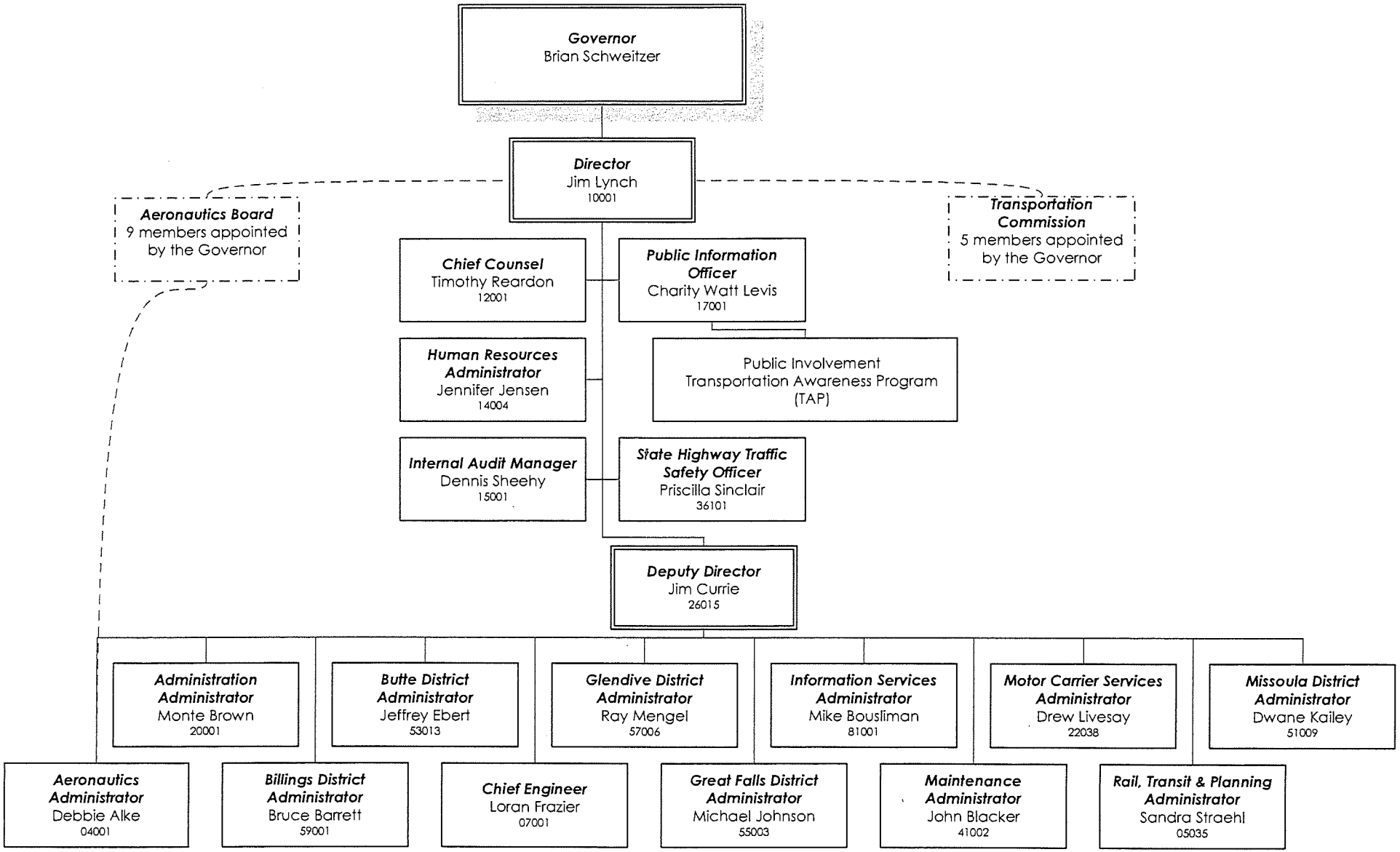
APPENDIX G: DOT Organizational Charts

Montana Department of Transportation

serving you with pride

Montana Department of Transportation

Department outline



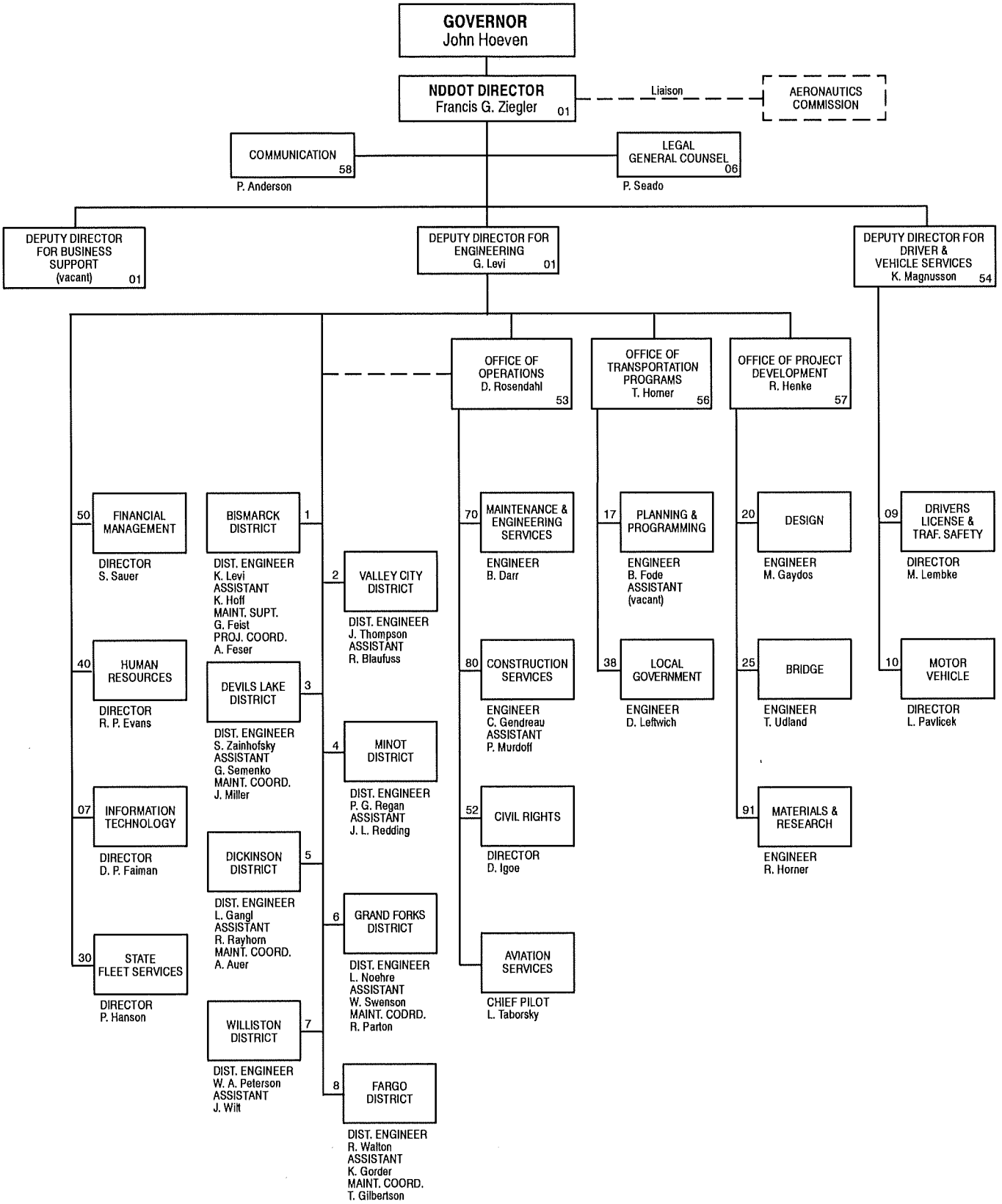
= Position Number

March 23, 2006

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

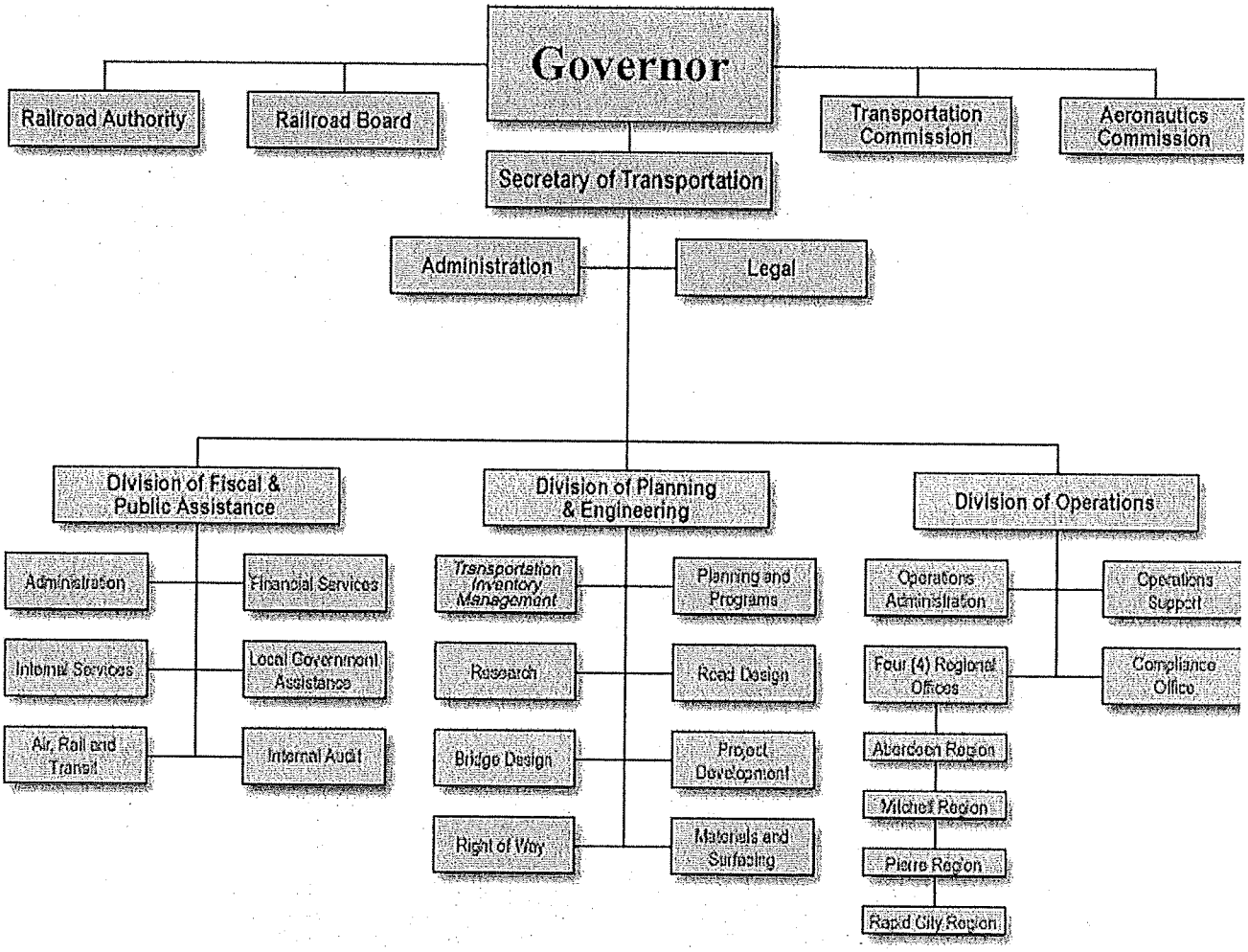
ORGANIZATION CHART

December 1, 2006

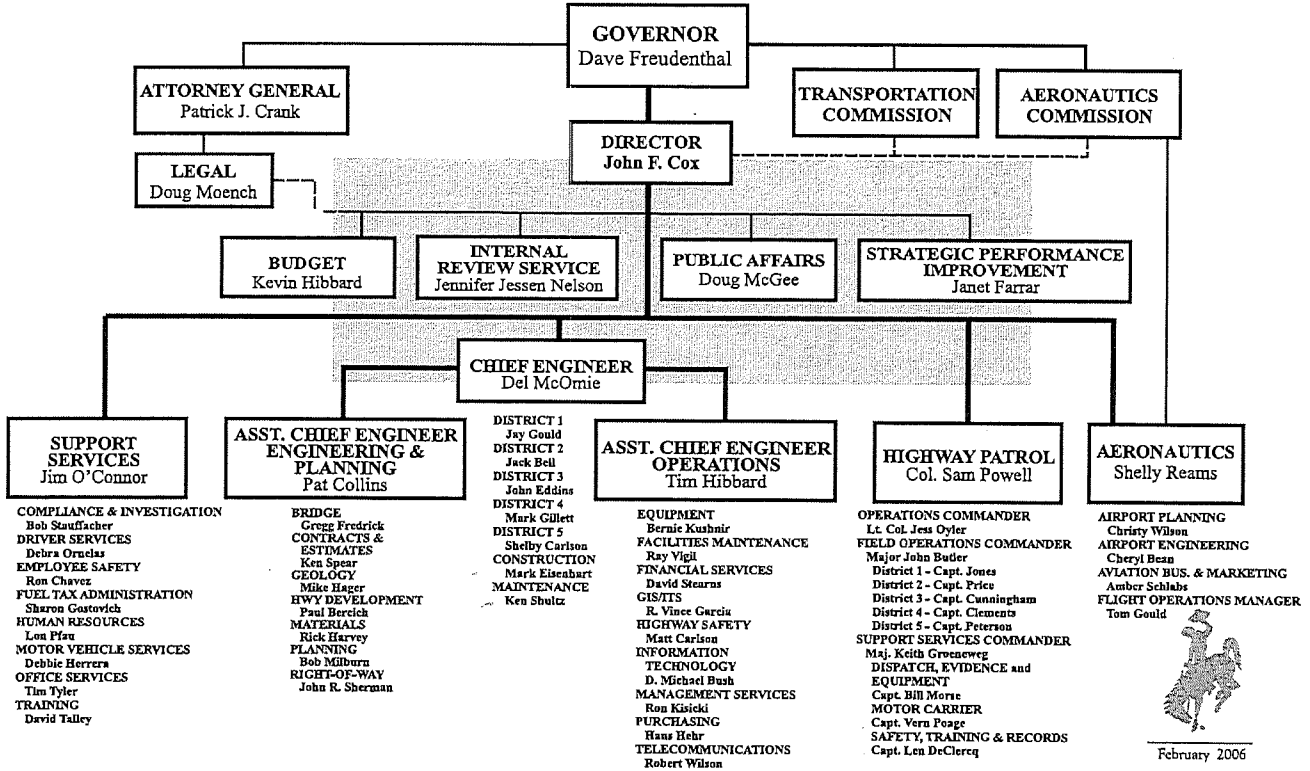


State of South Dakota

Department of Transportation



WYOMING DEPARTMENT of TRANSPORTATION



COMPLIANCE & INVESTIGATION
Bob Stauffacher
DRIVER SERVICES
Debra Ornelas
EMPLOYEE SAFETY
Ron Chavez
FUEL TAX ADMINISTRATION
Sharon Gostovich
HUMAN RESOURCES
Lon Pfau
MOTOR VEHICLE SERVICES
Debbie Herrera
OFFICE SERVICES
Tim Tyler
TRAINING
David Talley

BRIDGE
Gregg Fredrick
CONTRACTS & ESTIMATES
Ken Spear
GEOLOGY
Mike Hager
HWY DEVELOPMENT
Paul Bercich
MATERIALS
Rick Harvey
PLANNING
Bob Milburn
RIGHT-OF-WAY
John R. Sherman

EQUIPMENT
Bernie Kushnir
FACILITIES MAINTENANCE
Ray Vigil
FINANCIAL SERVICES
David Stearns
GIS/ITS
R. Vince Garcia
HIGHWAY SAFETY
Matt Carlson
INFORMATION TECHNOLOGY
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MANAGEMENT SERVICES
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TELECOMMUNICATIONS
Robert Wilson
TRAFFIC
Mike Gostovich

OPERATIONS COMMANDER
Lt. Col. Jess Oyler
FIELD OPERATIONS COMMANDER
Major John Butler
District 1 - Capt. Jones
District 2 - Capt. Price
District 3 - Capt. Cunningham
District 4 - Capt. Clements
District 5 - Capt. Peterson
SUPPORT SERVICES COMMANDER
Maj. Keith Greeneweg
DISPATCH, EVIDENCE and EQUIPMENT
Capt. Bill Morse
MOTOR CARRIER
Capt. Vern Poage
SAFETY, TRAINING & RECORDS
Capt. Len DeClercq

AIRPORT PLANNING
Christy Wilson
AIRPORT ENGINEERING
Cheryl Bean
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Amber Schlabs
FLIGHT OPERATIONS MANAGER
Tom Gould

February 2006