



A partnership with
MDT, NDDOT, SDDOT, WYDOT and the
Mountain-Plains Consortium Universities

TLN (Tel8) Interim Report

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NDSU

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Introduction

The Transportation Learning Network (TLN) is a distance-learning network established by several state Departments of Transportation (DOTs) and Mountain-Plains Consortium (MPC) universities.

TLN is dedicated to: 1) technology transfer and continuing education courses, 2) professional development, 3) graduate level courses in transportation, 4) transportation seminars, and 5) the delivery of national transportation events and expertise to the region's transportation professionals using TLN resources.

Progress and Outcomes

Montana DOT joined TLN on July 1, 2013.

TLN continues to undergo significant change and growth during this reporting period. The increase in technical training is of note, as well as the addition of other delivery technologies such as web conferencing, video streaming, and online training modules. The following lists the work plan items in red bold and the progress and outcomes below for each of the areas identified in the current Scope-of-Work.

TLN obtained a new video conference bridge and as well as three digital codecs to modernize transmission.

Programming

As part of the work plan, TLN proposed to facilitate and introduce new programming including:

Technical Training:

"TLN will develop and identify new sources of technical training through innovative coordination of state DOTs and LTAPs. This effort is aimed at meeting the long-identified need for additional technical training for the DOTs. The purpose of this renewed program will be to provide TLN DOTs and LTAPS with training programs of a technical nature not otherwise available. New avenues for technical training include broader participation of the MPC universities in delivering research based training as well as partnering with other non-TLN sources including industry associations and vendors. A higher percentage of training hours will be pursued in the technical category. The technical training will be delivered in the most appropriate format – video conference, webinar or online module."

TLN successfully continued expanding its technical training offerings. During the two-year period, TLN continued to expand its coordination and programming activities to ensure members have a direct and ongoing role in the programming of training. Monthly meetings were held through the entire period with representatives from each state to identify technical and non-technical training. Technical training was categorized into 7 transportation categories of bridge, construction, design,

maintenance, materials, planning and safety. Topics were solicited from the members and this resulted in over 175 topics for review. The top 40 to 50 topics were pursued each year of the period. This resulted in approximately 80 offerings over video conference or webinar for the period. This was a significant increase over the prior period.

TLN also coordinated three roundtables amongst the four states within TLN during the reporting period. The roundtables took the form of each state preparing a presentation on the same topic and presenting to the audience. The roundtables provided an opportunity for subject matter experts from each participating state to share information to potentially improve procedures and practices.

TLN continues to offer 85 online technical modules in TLN's learning management system, LearnFlex, <http://tln.learnflex.net/include/login.asp?url=/users/index.asp>. These online modules offer individuals 24/7 access to topics from pavement construction to materials testing. The majority of the TLN-developed courses were given to NHI in trade for access to AASHTO TC3 modules for storing on their learning management system (LMS).

During the reporting period, TLN developed and uploaded six new self-paced online training modules to its LMS three of which were developed from a day-long TLN video conference. These online modules are on materials testing and seal coating. Additionally, the American Traffic Safety Services Association (ATSSA) gave TLN two online modules to make available on TLN's LMS. ATSSA's online modules are on the safe installation and removal of temporary traffic control devices and work zone safety performance measures.

LearnFlex LMS user accounts have also grown significantly – approximately 5,000 accounts exist at this time versus 3,000 accounts prior to this two-year period. This is an increase of about 67%. The LMS also provides a comprehensive training record for NDLTAP, NDDOT, and SDDOT staff. An export routine was created to update employee records in NDDOT Enterprise LMS.

Local Technical Assistance Program (LTAP):

“An emphasis on working with regional LTAP centers to develop and adapt LTAP training resources to provide and augment technical training.”

TLN and the North Dakota LTAP (NDLTAP) center continue to successfully work together to build and market the TLN program. For instance, the NDLTAP center assists the TLN program in topic and presenter research and coordinating TLN's learning events. The NDLTAP center also assists with improving processes and technical systems used to ensure the learning environment runs smoothly for the attendees and the presenters. The SDLTAP program continues to supply presentation material and market TLN presentations to their clients.

Marketing – The NDLTAP center aggressively markets TLN learning events in several ways. First, NDLTAP sends electronic notifications of upcoming events to all of their contacts. These contacts include contractors, engineers, DOT and local government staffers associated with the roadway system. A second way is marketing events to contacts based on their role or job title and past

attendance of learning events. The NDLTAP team uses an application called **Constant Contact** for electronic marketing. Third, the NDLTAP staff using their **Facebook** website, <https://www.facebook.com/ndltap> to market TLN learning events.

Webinars (Web Conferencing) – The LTAP center hosts TLN’s webinars using an application called **Instant Presenter**. During the reporting period, LTAP hosted 10 webinars.

Recorded Training – many of the presenters allow TLN to record their presentation and trainings. The videos are stored in TLN’s learning management system (LMS), **LearnFlex**. In 2013, SDDOT requested a form for viewing and crediting staff who watch recorded sessions. In 2014, the NDLTAP center initiated and launched an outreach program to encourage use of the LMS recorded trainings. These were delivered during their LTAP site visits. Attendee sign-in sheets and evaluations forms are available for people to earn credit through the NDLTAP’s Road Scholar program.

<http://www.ndltap.org/events/contentserver.php>

Altogether, TLN and the LTAP center continue a synergistic partnership.

Core Learning Topics:

“Professional development courses have been important and will be continued. Workshops focusing on leadership, management, and professional development will be pursued. These will be delivered through the most effective and efficient platform available – either video conference or webinar.”

In addition to offering presentations on conventional soft-skills topics like customer service, leadership and management, TLN offered presentations and workshops on new topics during the reporting period. For instance, training on presentation slide design and using distance technology for effective meetings and trainings were offered by TLN and prioritized by the multi-state programming committee.

TLN also utilized NDSU-Upper Great Plains Transportation Institute’s staff expertise (UGPTI) to present on topics prioritized by the multi-state programming committee over the past two years. In each year the UGPTI-DOTSC Engineering Training Manager presented on Construction Project Management/Contract Administration and in the last year of the reporting period, UGPTI’s Communications Coordinator presented on concise writing.

Graduate Courses:

“MPC graduate curriculums will be marketed through the TLN Learning Management System (LMS). A revitalization of course delivery will be pursued and evaluated.”

MPC Graduate Curriculums:

MPC graduate curriculums were marketed through TLN’s LMS. These include graduate courses in transportation and urban systems and leadership. The Transportation Leadership Graduate Certificate program is a national online education program that involves 13 major universities located throughout the United States, with participation from many others.

UGPTI's director used the TLN video conference equipment to record lectures for two online courses he teaches, Civil Engineering 456 and 656.

MPC Seminars:

TLN met with MPC representatives in November 2014 in Denver, Colorado. TLN has standing offers with South Dakota State University and the University of Wyoming to present MPC research results.

Non-TLN (Presenters):

"Programming from other organizations will be evaluated for TLN delivery. Examples include other DOTs, other universities, other transportation or distance learning organizations, or industry groups such as ATSSA, OSHA, AGC, North Dakota Health Department, North Dakota Agriculture Department, etc."

Over the period, several presentations were advanced through invitation or request from the presenters. For instance in 2013, the New Mexico DOT presented to TLN on ethics awareness in the transportation industry. In 2014, a two-day presentation on the mix design, construction and performance of warm mix asphalt was given by Dr. Raymond Bonaquist of Advanced Asphalt Technologies and Dr. Randy West of the National Center for Asphalt Technology. Also in 2014 the director of the Utah LTAP center presented on asphalt pavement maintenance. In both 2014 and 2015, ATSSA delivered a presentation on temporary traffic control as part of the FHWA Work Zone Safety and Mobility Grant. In 2015 Ron Eck, PE, of the West Virginia LTAP center, presented on designing, constructing, and maintaining pedestrian facilities in the public right-of-way to meet ADA requirements and presented on access management. OSHA and ARTBA were also presenters during the reporting period.

Organizational and Operational Structure

"TLN will examine and initiate the restructuring and reorganizing of its' organizational and operational structure. TLN will develop a new paradigm for providing TLN programming to non-TLN entities and evaluate alternative methods, mediums, or technologies for delivering information and expertise to fill the needs of its members."

Organizational:

"The relationship between the Executive Advisory Board and the TLN Board of Directors will be evaluated and considered for restructuring with appropriate modification to accommodate logical duties and responsibilities of committees and staff."

The Board of Directors was converted to an Executive Committee in FY 2011 with only one representative from the MPCs. TLN expanded its technical coordination capacity by sharing director role with the NDLTAP center director and UGPTI's Engineering Training Manager.

Operational:

"TLN will continue to examine restructuring its operational staff to streamline staffing levels while enhancing technical capabilities with increased emphasis on engineering and information technology."

TLN adjusted operational staff during the reporting period. UGPTI hired an Engineering Training Manager to serve as a trainer in the department. In addition to this capacity, the Engineering Training Manager provides assistance to the TLN program director in the areas of speaker recruitment and coordination and moderating TLN presentations. The partnership between the TLN program Direction and the NDLTAP Program Director continues to provide redundancy of engineering technical steering support. The part-time staff member added in Fargo recently left TLN, but will be replaced. UGPTI's instructional design specialist created presentation templates and improved the tip sheet on video conferencing for TLN speakers. The instructional design specialist also recruited speakers to present on the topics of presentation slide design and training design to TLN.

Non-Members (Viewers):

"TLN has provisions for allowing non-members to attend TLN events and will continue to develop policies for providing TLN programming to non-members in the hope of generating revenue."

The external requests for access to TLN events continues to be sporadic and not at the level originally anticipated. In order to showcase TLN for possible expansion, temporary access is given to specific courses or for a specific time to allow for an understanding of TLN.

TLN connected with a civil engineering assistant professor at the University North Dakota (UND) College Engineering and he has an LMS account. TLN has a standing offer with him to create an LMS account for any UND civil engineering student who wants to explore the technical trainings in TLN's learning management system.

DOT Expansion:

"TLN will provide a process and support for new DOT members to join TLN."

This continues to be an objective but logistical coordination of more than four states is a concern.

We have had recent inquiries from Washington DOT and will hold a conference call in the near future.

Montana DOT joined the pool fund on July 1, 2013. Montana DOT has 526 accounts in TLN's LMS and Montana LTAP has 60 accounts, so altogether 586 LMS accounts.

TLN expanded North Dakota DOT's use of TLN's LMS by coordinating registrations for the North Dakota DOT's Introduction to Construction Project Management, Erosion and Sediment Control – Construction, and the Introduction to Highway Construction for New Engineers & Engineering Technicians courses. Cost sharing reduced North Dakota DOT's and TLN's expenses.

Technology

TLN obtained a new video conference bridge that is compatible with member states Polycom equipment.

TLN created a **Twitter** account https://twitter.com/TLN_UGPTI to market TLN's learning events.

Web-Based Training:

"The equipment and software required to produce, host, and deliver web-based training and presentations will be enhanced. Over the past period, a web-based learning management system (LMS) was added to test LMS based registration, achievement tracking and access to past trainings as well as online modules 24/7. It is expected that this will become the primary delivery method for TLN in the future. A service that TLN will explore is videoconference and web conference delivery of the same event simultaneously."

TLN expanded its library of on-demand, self-paced learning resources during the reporting period.

For example, TLN developed three new self-paced training modules on materials testing. The modules are on the Wash Test, Lightweight Pieces in Aggregate Test, and the Sieve Analysis. The first two are available in the LMS and it is anticipated the Sieve Analysis module will be released in May 2015. A brochure was created listing all of the materials testing self-paced training modules to advertise the collection and a postcard was created to advertise the newest additions.

Also during the reporting period, three self-paced training modules were created out of a day-long video conference on seal coating. The modules have knowledge checks after short video segments so learners can check their learning as they progress through the presentation.

TLN created an evaluation survey using **SurveyMonkey**, <http://www.surveymonkey.com/s/HBY5MVC> to obtain feedback on the modules developed by UGPTI-TLN.

TLN obtained two online modules from ATSSA in 2014 and added two modules from the Transportation Curriculum (TC3) modules in 2013, which were all uploaded to TLN's LMS.

Additionally, TLN upgraded the Articulate Studio eLearning software used to develop self-paced training modules to take advantage of new features and to have the capability to publish the modules to multiple formats.

Mobile Training:

TLN staff designed and developed 10 video demonstrations on materials testing. The videos are hosted on a **YouTube** channel and are public; the address is <https://www.youtube.com/user/ugptindsu>

Materials Testing Video Demonstrations:

1. Fine Aggregate Angularity Test
2. Graduation/Sieve Analysis
3. Lightweight Pieces in Aggregate Test
4. Microwave Method of Drying Soil
5. Proctor Test, Method A
6. Rubber-Balloon Test
7. Sand Cone Test
8. Sand Equivalent Test
9. Speedy Moisture
10. Wash Test

TLN has received positive feedback on how easy it is to access them from smartphones. Altogether the 10 video demos received **66,664 views** as of April 22, 2015. The videos have closed captions.

TLN investigated if a presentation may be broadcasted simultaneously by videoconference and web conference and it is possible.

Technology Costs:

"TLN costs for supporting its technology will be monitored with the aim of identifying changes in cost and their causes, and reducing them when possible. Outsourcing some of these responsibilities will be explored."

Technology costs continue to be a big part of the TLN process but IP access fees have gone down over time. Three of the member states have their own video bridges and codecs, but the new TLN video conference bridge has been used to connect directly with two of the three state to reduce bridge to bridge conflicts. Webinars are pursued when logical for the topic. Video conferencing costs per access point also appear to be dropping as time goes on.

During the reporting period, TLN used free online applications such as Facebook and Twitter to market TLN's learning events and used another free application, YouTube, so video demonstrations on materials testing are easily to get to from mobile devices.