



NTCPI

NATIONAL TRANSPORTATION CAREER PATHWAY INITIATIVE

TRANSPORTATION SAFETY

CAREER PATHWAY REPORT

SECTION 4 EXCERPT: IMPLEMENTATION PLAN

FEBRUARY 2019



STEVE ALBERT, DIRECTOR SUSAN GALLAGHER, ASSOCIATE DIRECTOR WEST REGION TRANSPORTATION WORKFORCE CENTER



SECTION 4.0 CAREER PATHWAY IMPLEMENTATION

4.1 Project Title

"Career Pathways to Safer Transportation Systems"



4.2 Workforce Priority

Research indicates that over 100,000 professionals have responsibilities that impact road safety. Yet remarkably, there is a lack of formal structures in place to ensure that future and incumbent transportation professionals possess road safety competencies.

Growing demand to enhance road safety competencies across the transportation sector—including infrastructure construction/maintenance personnel and transportation engineering, design, and analysis—is evidenced by an increasing level of industry-driven activity toward defining and implementing new professional transportation safety certification programs.

These certifications are exam-based and assess critical safety competencies based on an applicant's past learning and experience. However, for those interested in obtaining industry-recognized safety credentials, it may be difficult to identify a structured training road map or program of study to gain the requisite competencies to be tested.

While many professional development courses include some safety-focused content, they are scattered across training providers, organizations, delivery modes, and target audiences, making it difficult for staff to easily identify. Degree-level road safety curriculum is sparse and dependent on individual faculty or department interest.

Further complicating this picture is the challenge future/incumbent transportation professionals face in assessing the career value of obtaining road safety competencies. Labor market data shows a relatively small number of safety-titled occupations, and job posting analysis within the transportation sector reveal an overall focus on occupational health and safety related skillsets, with little attention paid to systemic road safety KSAs.

4.3 Project Description

To address these challenges, the West Region Transportation Workforce Center (WRTWC) proposes to create a nationally replicable structure for obtaining and incentivizing road safety training and competencies attainment, using a two-fold approach:

- 1. Deploy a pilot demonstration of a Local Road Safety Scholars recognition program.
- 2. Provide support to develop industry-education partnerships at higher education institutions and to disseminate a replicable process for integrating road safety experiential and problem-based learning into curriculum.

The purpose and expectations for this pathway implementation include:

- Highlight and disseminate industry-identified safety competencies (NTCPI research outcomes) to education/training providers to enhance curriculum.
- Provide a structured mechanism for incumbent/future transportation personnel to obtain core safety competencies and to achieve employer recognition, a professional credential, or a degree, which will help advance them on a safety career path.
- Provide adaptable models for integrating road safety awareness and problem-based learning experiences into existing training/education programs to build awareness, interest, knowledge, and technical skills related to road safety.
- Provide a mechanism for transportation employers to ensure staff have core road safety competencies and a way to incentivize and recognize these skillsets in career advancement or other career benefits.

Local Road Safety Scholar Recognition Program

NACE is pursuing the development of a comprehensive safety training curriculum and certificate program for local roads personnel, to include road supervisors, engineers, construction, and maintenance personnel. Their goal is to promote safety through professional development of local road officials. The curriculum will be designed to provide "the core knowledge, skills and abilities to begin functioning effectively in the local road safety field."

NACE has partnered with the National Center for Rural Road Safety (Safety Center) to begin laying the framework for a training program. This includes identifying leadership and safety training modules, core safety competencies appropriate for all occupations, and specialized training requirements for specific occupations. The Safety Center has contracted subject matter experts to develop new modules for topics not currently receiving adequate coverage in existing industry training offerings.

WRTWC's implementation plan leverages these ongoing partnership efforts and will coordinate with NACE and the Safety Center to deploy a pilot safety demonstration training program focused on frontline construction and maintenance personnel in Montana. This pilot will focus on implementing core safety training modules identified by WRTWC, NACE, and the Safety Center for all career pathways, plus specialized safety training courses targeted specifically to road construction and maintenance personnel.

Safety courses will be bundled into a program of study and integrated into the MT LTAP Road Scholars program. MT LTAP's implementation of a Road Safety Scholar recognition program will facilitate the integration of new road safety trainings into LTAP's existing course offerings, while also enabling MT LTAP to offer training participants additional opportunities to earn certificates between "Road Scholar" and "Road Master" levels. The Road Scholar program is both well-established and well-known by employers and employees. Implementation of a Road Safety Scholar program within this existing framework will facilitate program information dissemination and employee/employer buy-in for safety-focused programming.

MT LTAP will be the in-person training provider for this pilot deployment, and its curriculum will include options for on-line training through the Safety Center or other national training providers, providing access flexibility for full-time professionals. While MT LTAP offers non-credit coursework, WRTWC will identify community colleges where articulation agreements can be established to provide college credit to pathway participants for training completed.

WRTWC will work closely with FRCC—set to launch an online Highway Maintenance Management associate degree in 2019—to align safety training courses with eligible academic credit options for their degree. WRTWC's role in this pilot demonstration is to establish resources and processes that will enable national expansion and long-term viability of the program.

Where initiative year one will be dominated with start-up and pilot activities (detailed in the Section 4.8 First Year Workplan), the overall multi-year deployment effort includes:

- Assessment of employer buy-in; development of effective industry outreach materials.
- Development of program assessment tools targeted to participants and employers.
- Project outcomes evaluation (short-term).
- Funding identification / proposal development for long-term longitudinal outcomes assessment.
- Cross-sector coordination to develop articulation agreements between for-credit and non-credit bearing training programs.
- Development of national safety career pathway resources, including professional profiles, case studies, and "next step" opportunities for obtaining degrees or additional industry credentials.
- Coordination with NACE and other professional associations, and with national training/education providers (e.g. NLTAPA) to share pilot project outcomes, outreach materials, and training modules/roadmaps to facilitate adaptation and implementation nationally.
- Establishment of an industry advisory board to identify next steps, assess continuing relevance of training content, and identify emerging topics.

MT LTAP expects to offer 3-5 safety trainings to local roads personnel each year of the program. By the end of this 3-year pilot demonstration, an estimated 90-375 transportation staff are expected to complete safety training. This will provide adequate data to evaluate safety learning outcomes, recommend program revisions, and identify next steps for program expansion. Letters of agreement from pilot project partners (NACE, Safety Center, MT LTAP) are included in Section 6 of this plan report.

Transportation Agency / University Partnerships for Engaged Scholarship

Critical occupations in the "Transportation Safety Planning, Engineering, Design & Analysis" career cluster require completion of four-year or graduate-level degrees. Safety job specifica-

tions are increasingly interdisciplinary, requiring foundational knowledge of road safety science as well as skillsets drawn from engineering, the behavioral sciences, planning, mathematics, and data analysis fields. Interdisciplinary degree programs are emerging in increasing numbers, however many challenges exist for academic institutions to implement new coursework or degree programs. An underutilized tool for developing in-demand industry skillsets at the university level—without relying on new course/program development—is through the integration of project-based learning into existing courseware. Most university degree programs offer an array of opportunities to accomplish this through design courses, capstone courses, service-learning courses, and field courses.

Successful implementation relies on industry engagement with education providers. However, agencies may have little or no experience working with educators in this way. WRTWC will act as a facilitator to identify at least two university and transportation agencies and provide them with the support and resources needed to implement productive safety project partnerships.

Partnerships that involve multidisciplinary students. Initial deployment will focus on curricular partnerships: integrating project-based learning into degree coursework. Years two and three of this implementation will focus on "stacking" safety career development experiences through the addition of co-curricular research project partnerships.

The primary partner for this initiative of the implementation project is the Educational Partnerships for Innovation in Communities Network (EPIC-N). EPIC-N was established to provide insight, resources, and tools to universities and public agencies seeking to launch partnerships that bring agency-driven projects into university classrooms on a large scale.

This network is made up of universities nationwide that have successfully implemented the model through established community-engagement programs. EPIC-N will provide technical assistance to universities and public agencies to help them organize their partnership projects and agreements effectively. Universities within the network with established programs will be engaged to partner with transportation agencies on safety-focused projects.

WRTWC has already begun outreach and technical assistance activities. In November 2018, it brought transportation and other public agency representatives together with university representatives from Montana, Wyoming, Oregon, Idaho, and Washington for a workshop on the EPIC-N model. Cross-sector discussions and follow-up technical support have continued since.

WRTWC will build on these connections to identify and engage specific universities and transportation agencies in the deployment of safety career pathway partnerships. The partnerships will bring problem-based safety learning experiences into multidisciplinary university courses, thereby exposing students to road safety as a discipline and as a career.

While the first year of this initiative deployment are well documented in the Section 4.8 workplan, initiative goals and objectives for years two and three include:

- Launch safety project-based learning in classrooms at two universities.
- Develop assessment tools focused on outcomes for students, faculty, and industry partners.
- Evaluation of project outcomes for a Year-2 demonstration project.
- Continued outreach/technical support to universities and transportation organizations to identify and assist additional Year-3 partnerships.
- Outreach/coordination with Year-2 university/agency partners to develop additional co-curricular student engagement opportunities through the development of research partnerships.
- Project outcomes evaluation for three-year demonstration project (short-term).
- Funding identification / proposal development for long-term longitudinal outcomes assessment.
- Dissemination of project outcomes for the Year-3 demonstration and development of a guidebook for transportation organizations and universities to promote program expansion.

At the end of this three-year pilot, over 300 students from various degree programs will have been exposed to road safety as a discipline and a career and will have gained experience applying various tools/techniques to real-world transportation safety issues. The goal is for an additional 25 students at participating institutions to gain more intensive project experience on agency-sponsored safety research projects.

WRTWC will evaluate the impact these experiences have on student career choices and the safety skillsets they bring to the workforce, as well as the impact on employers in terms of recruitment and professional development strategies for road safety. Program assessment will be used to develop a guidebook for universities and agencies nationwide to facilitate national expansion of safety career pathways.

4.4 Implementation Partners

WRTWC thanks its partners for their continued engagement, contribution, and commitment to developing workforce solutions that positively impact the lives of students and the incumbent workforce. In their support of this career pathway pilot implementation for the transportation planning discipline, each of these valued partners have agreed to participate as key contributors to this plan's deployment, success, and long-term sustainability. WRTWC's partner organizations, including their roles and responsibilities, are presented below:

National Center for Rural Road Safety. The Safety Center will assist in defining learning objectives for core safety training courses, provide support to develop new training, work with training providers to pilot new courses, and coordinate with NACE. Long-term, the content/process of the Local Roads Safety Scholar Program will be integrated into a scaled-up national deployment of a Local Road Safety Certificate Program, which NACE will lead.

National Association of County Engineers. NACE will provide guidance, through consultation with its membership, in defining core safety content and learning objectives for the Safety Scholars pilot. NACE will work with WRTWC and the Safety Center to create a cohesive training curriculum that addresses the core safety competencies identified by the safety career pathways initiative, infused with a "local roads" perspective. NACE will additionally provide outreach support to promote and incentivize participation in the pilot project.

Montana Local Technical Assistance Program. MT LTAP will coordinate with WRTWC to adapt existing training and integrate new content that meets targeted safety learning objectives, into its on-site/blended training program. MT LTAP will assist WRTWC with outreach to employers, employees, and professional associations to market the program and encourage participation.

MT LTAP will lead in-person training, track participation, assist with program evaluation, coordinate participant recognition awards, and work with FRCC in Colorado to develop articulation agreements to provide a path for training participants to obtain college credit and advance towards an associate degree in Highway Maintenance Management.

Educational Partnerships for Innovation in Communities Network.



EPIC-N is a consortium of universities utilizing a proven, replicable, and adaptable model for building partnerships between universities and government agencies to integrate project-based learning experiences into university coursework, thus transforming

higher education into an arena where students learn through real-life problem solving. WRTWC will continue to work with EPIC-N and transportation agencies to foster partnerships that provide students with exposure to transportation safety problems, projects, and solution-building, through peer-to-peer networking, collaboration forums, and technical support.

4.5 Partner Commitments

In an expression of their commitment to the deployment and mission of this implementation plan, WRTWC partners have "signed-on" as key contributors of time, expertise, resources, and in some cases funding, through the authorized letters of agreement presented below. It is this level of engagement that makes a program of this scale possible.







December 2 2018

Steve Albert, Director West Region Transportation Workforce Center Montana State University PO Box 174250 Bozeman, MT 59715

RE: National Transportation Career Pathways Initiative Safety Career Pathway Implementation Partnership

Local Technical Assistance Program

The Montana Local Technical Assistance Program (MT LTAP) is The Montana Local Technical Assistance Program (MT LTAP) is pleased to partner with the West Region Transportation Workforce Center (WRTWC) in the deployment of a career pathway program for the transportation safety workforce. LTAP is committed to serving the needs of local transportation providers through training and technical assistance. LTAP trainers provide in-person training to transportation personnel across the state and also serves as a resource to identify online training and other professional development materials that may be beneficial to our customers.

Montana LTAP additionally and ministers the Montana Roads Scholar program, which provides an incentive for city and county road personnel to pursue professional development, much of it focused on safety of both workers and roadways. The WRTWC's plan to implement training and career pathways for local road safety supports LTAP's mission of fostering a safe, efficient, and environmentally sound transportation system by improving the skills and knowledge of local transportation providers.

We understand the proposed project seeks to elevate professional practice in the local road safety field by developing and implementing a comprehensive training curriculum that provides career advancement incentives for local roads personnel to obtain core safety competencies. The project will provide a mechanism for employers to incentivize road safety professional development for staff, and it will provide formal recognition to personnel completing the training, In this way, it is very similar to the Montana LTAP Road Scholar program.

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As a lead project partner, we intend to participate in the following

- Act as the primary in-person training source in the state of Montana for a pilot demonstration project of the road safety
- Montana for a pilot demonstration project of the road safety recognition program.

 Provide information on and facilitate access to other training sources (blended/online) that can be used to obtain safety recognition through the program.

 Participate in the development process for new training curricula.
- Act as a focal point for statewide outreach to local, city, and Act as a local point for statewide outreach to local, city, county transportation staff and organizations to dissem information about the safety recognition program.
 Track training participation and provide certificates of
- work with the project team to evaluate the pilot implementation project and to identify opportun expand nationally.

Montana LTAP supports this initiative as an important component in ensuring that local roads maintenance and engineering staff possess the necessary road safety competencies to enhance statewide transportation safety. We look forward to assisting as training providers for the pilot demonstration project in Montana.

With SS Matthew A. Ulberg, PE Director, Montana LTAP

P.O. Box 173910 Rozeman, MT 59717-3910

National Association of County Engineers

THE VOICE OF COUNTY ROAD OFFICIALS

December 7, 2018

Steve Albert, Director West Region Transportation Workforce Center Montana State University PO Box 174250 Bozeman, MT 59715 RE: National Transportation Career Pathways Initiative Safety Career Pathway Implementation Partnership

The National Association of County Engineers (NACE) is pleased to partner with the West Region Transportation Workforce Center (WRTWC) in the deployment of a career pathway program for the transportation safety workforce NACE is committed to serving the needs of local roads maintenance and engineering staff and to advancing professional practice through the development of professional equacity building opportunities. The WRTWC's plan to implement training and career pathways for local road safety directly aligns with NACE's vision of climanting final and serious strahes from public roads.

We understand the proposed project seeks to elevate professional practice in the local road safety field by developing and implementing a comprehensive training curriculum that covers core safety competencies for local roads personale. After the plot period we also understand the goal is that any organization (NLTAPA, NACE, etc.) would be able to freely usedeliver the materials local roads.

The project will provide a mechanism for employers to incentivize road safety professional development for staff, and it will provide formal recognition to personnel completing the training. The project will create additional opportunities for educational and career pathway advancement by making connections to degree-granting programs and to industry-recognized professional certification programs, which attest to the attainment of ore road safety knowledge, skills, and abilities.

As a lead project partner, we intend to participate in the following ways

- Provide leadership in developing workforce solutions.
 Identify existing training and partners and participate in the review and development process for new training curricula.
 Work with membership to identify graduated learning levels based upon need and to design a modular format for training.
 Provide outreach to NACE membership to disseminate information about the
- Provide outstant to NACE inclinership to disseminate information about the program.
 Work with the project team to evaluate the pilot implementation project and to identify opportunities to expand nationally.

Kevan Ho

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December 20, 2018

Steve Albert, Director West Region Transportation Workforce Center Montana State University PO Box 174250 Bozeman, MT 59715

RE: National Transportation Career Pathways Initiative Safety Career Pathway Implementation Partnership

As you are aware, the mission of the National Center for Rural Road Safety (Safety Center) is to provide coordinated, multidisciplinary, scalable, and accessible safety resources in order to empower rural road users to accelerate road safety improvements and save lives. The Safety Center is therefore pleased to partner with the West Region Transportation Workforce Center (WRTWC) in the development and deployment of a safety-focused career pathway program for the transportation workforce souced on local roads personnel. We understand the proposed project seeks to elevate professional practice in the local road safety field by developing and implementing a comprehensive training curriculum that provides career advancement incentives for local roads personnel to obtain core safety competencies. The project will provide a mechanism for employers to incentivize road safety professional development for staff, and it will provide formal recognition to personnel completing the training. As you are aware, the mission of the National Center for Rural Road Safety (Safety Center) is to

The Safety Center has devoted considerable resources to identifying local roads safety training needs, outlining a potential recognition program for local transportation professionals, and developing training modules to fill gaps in available professional development opportunities in this area. The WRTWC and Safety Center's plan to implement a demonstration pilot project that will disseminate this training program widely while offering career advancement incentives and recognition to local transportation providers who complete the safety training program provides an excellent opportunity for the two FHWA-supported Centers to leverage resources and expertise to the benefit of local transportation providers and the safety of transportation system users

- Assist in the framework creation for the pilot project.
 Act as the primary liaison to other collaborating national organizations, particularly NACE to ensure that the training program meets their needs.
 Identify and/or provide training resources (blended/online) that can be used to obtain safety recognition through the program.

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National Center for



- Support the development of 2-4 new training modules focused on safety competencies to
- gaps.

 Provide national outreach to disseminate information about the program nationally and support expansion of the pilot.

The National Center for Rural Road Safety supports this initiative as a mechanism to ensure that local roads maintenance and engineering staff possess the necessary road safety competencies to enhance transportation safety on rural roads. We look forward to assisting as a training developer and provider for the pilot demonstration project in Montana and as an outreach partner in supporting the expansion of the pilot antionally.

Jaime L Sullivan

Jaime L Sullivan Center Manager National Center for Rural Road Safety

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4.6 Project Outcomes

During the first year of deployment, WRTWC and its implementation partners will deliver the following project outcomes:

- 1. MT LTAP and its training partners will offer 3-5 core safety trainings to local roads maintenance, construction, and engineering personnel in Montana over the first year of the pilot deployment, affecting an estimated 30-125 participants.
- 2. Develop/assess the effectiveness of recruitment and employer outreach.
- 3. Track participation in the Safety Scholars program and gather evaluation data on safety competency learning outcomes.
- 4. Develop a long-term plan for assessing training impact on participant career paths and on-the-job safety performance.
- 5. All training courses identified/created will be shared with NACE and other national training organizations to facilitate national-level implementation.
- 6. Coordinate with degree-granting institutions to develop articulation agreements to award course credit for training completion.
- 7. Identify two universities to partner with transportation organizations to provide multi-disciplinary students with a course-based road safety problem-based learning experience. All project deliverables, course learning objectives, and partner MOUs will be completed for course implementation in academic year 2020-2021.

Additional long-term workforce impact includes:

- Career pathway participants will develop core safety competencies, additional professional credentials, and career benefits through program participation.
- Transportation organizations will engage with education institutions to foster safety workforce development efforts.
- The number of prospective hires and incumbent staff possessing road safety competencies will continue to increase.
- Safety performance outcomes for state/local roads will improve under the care of a well-trained safety workforce.

4.7 Project Timeline

Major milestones are listed below for the first-year of the pilot deployment. A project work-plan (Gantt chart) is also attached below for Year 1. Additional details on the full three-year deployment are provided in Section 4.3 of this implementation plan.

Deployment: Safety Scholars Program

1.	Develop program of study through MT LTAP	July – September 2019
2.	Develop/disseminate recruitment materials	August – October 2019
3.	Develop participant tracking & course eval tools	August – October 2019
4.	Begin Safety Scholars Recognition program	November 2019 – June 2020
5.	Track participants; evaluate learning outcomes	November 2019 – June 2020
6.	Plan to develop/modify preparatory curriculum	April 2020
7.	Report on project status	Quarterly
8.	Meet with DWG	Quarterly

Deployment: Higher Ed Project-Based Learning

1.	Continue networking/collaboration with EPIC-N	July 2019 – June 2020
2.	Identify university partners (road safety project)	July – August 2019
3.	Est. university/agency MOUs; identify courses/faculty	Fall 2019
4.	Faculty/agencies define SOW, SLOs, & evaluations	Spring/Summer 2020
5.	Project kick-off scheduled; courses begin Fall 2020	Spring/Summer 2020

4.8 First Year Workplan



PROJECT TITLE: Integrating Safety Competencies into Transportation Training, Education, and Career Pathway Streams

ORGANIZATION: West Region Transportation Workforce Center

	j	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20
Develop Safety Scholars program of study													
Define learning objectives													
Identify existing courses; adapt new content													
Define competency-based program of study													
Develop Articulation Agreements with FRCC													
Draft Pathway Phase 2 "Scale-Up" Plan													
Implement Safety Scholars Pilot													
Develop marketing/outreach													
Offer safety training courses (MT)													
Develop participant tracking system													
Develop program evaluation instruments													
Track participants; evaluate outcomes													
Complete Year 1 pilot evaluation													
Road Safety Integration into Coursework													
Partnership coordination for EPIC safety pilot													
Identify university/agency pilot partners													
Identify project & course learning objectives													
Develop MOUs													
Develop pilot evaluation instruments													
Pilat kick-off events for AY 2020-21													
Meet Quarterly w/ Implementation Team													
Prepare, Meet, Summarize													
Report on Project Status													

