

NDSU LEGISLATIVE UPDATE

Upper Great Plains Transportation Institute

NORTH DAKOTA STATE UNIVERSITY
FARGO, ND



2005-2007

Upper Great Plains Transportation Institute North Dakota State University

The Upper Great Plains Transportation Institute educates people, conducts research, and provides outreach in the areas of small urban and rural transportation and logistics to enhance the mobility of people, goods, and agricultural commodities. It accomplishes this mission by:

- Developing and applying knowledge, information and innovation in the public and private sector to improve competitiveness, efficiency, safety, and personal mobility.
- Educating, training and mentoring transportation practitioners and leaders in a rapidly advancing and increasingly complex field with sophisticated technology applications.
- Excelling as one of the premier transportation centers in the United States so that it can continue to attract the talent and funding to enhance North Dakota's economy and quality of life.

Advisory Council

Dave Sprynczynatyk - Chair
ND Dept of Transportation

Judge Barth
North Dakota Wheat Commission

Jim Boyd
ND Dept of Commerce

Tony Clark
ND Public Service Commission

LeRoy Ernst
ND Motor Carriers Association

Roger Johnson
ND Dept. of Agriculture

Bob Kjelland
North Dakota Farmers Union

Dave Maclver
Greater North Dakota Chamber of Commerce

John Mittleider
ND Farm Bureau

Greg Nelson
ND Grain Growers Association

Gary Ness
ND Aeronautics Commission

Curt Peterson
Association of General Contractors

Steve Strege
ND Grain Dealers Assoc

Mark A. Wolfe
Phoenix International, Inc.

Dan Zink
Red River Valley & Western Railroad

Selected Program Accomplishments

Agricultural Transport Center

- Developed information on U.S. grain market modal share (cooperatively with USDA). The information reflects changes in the competitiveness and relative efficiencies among transportation modes and provides a framework to assess public policies that affect the nation's transportation infrastructure.
- Completed willingness to pay for rural road services project. As more producers ship grain to rural processing facilities and terminal elevators, the demand on rural gravel roads becomes heavier. This study evaluates road users' willingness to pay for improvements and their perceptions of rural roads.
- Organized Rural Freight Conference to highlight economic, planning and policy issues related to promoting multi-modal export alternatives for rural economies. The event focused on financing multimodal transportation needs, making global market access competitive and identifying key policy and industry forces.
- Published report on non-metropolitan cities' transportation service quality indices. The research created two indices – a freight transport index and a business traveler mobility index – that are a measure of the quality of transportation in non-metropolitan areas and can be used in economic development efforts.
- Provided background to the N.D. Public Service Commission as it explored the possibility of pursuing a rail rate complaint. Researchers developed revenue-to-variable cost ratios, modal share data, and carrier market share analysis that were used in assessing North Dakota rates in the context of the criteria the U.S. Surface Transportation Board uses in its rate reviews.

Strategic Transportation Analysis Program

- Provided motor carrier cost analysis for several businesses in the state and region to help them make decisions about expanding service or whether to purchase trucks or contract for shipping.
- Conducted research analyzing uniform truck size and weight regulations for North Dakota and the neighboring states and provinces. Uniform regulations could facilitate faster, more efficient shipping corridors in the northern plains.
- Provided benefit/cost analysis for North Dakota DOT doing flood mitigation efforts for Devils Lake for use in making decisions regarding road improvements and rerouting.
- Helped communities, consultants and businesses as they evaluate the potential for intermodal shipping in North Dakota.
- Analyzed the feasibility of establishing intermodal service in eastern North Dakota.

Small Urban & Rural Transit Center

- Conducted a workshop to give transit managers, board members and other personnel practical ways to design and implement performance-tracking systems to help manage their systems and report performance to customers, policymakers and funding agencies. The “Managing by the Numbers” workshop was offered over the TEL8 telecommunications network.
- Offered an “Introduction to Public Transit” course to a dozen students in five states via the TEL8 telecommunications network. The course featured lectures by transit experts including administrators from the Federal Transit Administration and the American Public Transportation. In addition students presented research on transit projects across the country. The course will be offered again in 2005.
- Cooperated with the ND DOT to look at transportation methods, demographics and geography to improve mobility for the state’s residents. The goal of the study, expected to be complete in June, is to compare existing services with needs to identify gaps and develop a plan to fill those gaps. The effort has included input from nearly two dozen transportation-related organizations and agencies.
- Completed a one-year study of transportation coordination among social service agencies in North Dakota, and recommended establishing a state-level coordinating council and regional coordinating councils. The DOT-commissioned study sought to find ways of using existing transportation resources more effectively to meet increasing needs for service, especially in the rural areas.

Coordinated a bus shelter design competition for students in an NDSU architecture design class. The students created innovative shelter designs while learning about transit and related issues. The project involved input from state and local transit and architecture professionals who gained new perspectives from the students creative approaches. The winning design is expected to be constructed on the NDSU campus in 2005.

Advanced Traffic Analysis Center

- Completed North Dakota’s Strategic Intelligent Transportation Systems (ITS) Plan. The plan identifies four main areas of potential application of ITS: travel and traffic management, commercial vehicle operations, emergency management, and maintenance/construction management.
- Completing Regional ITS Architectures for Bismarck-Mandan MPO, Fargo-Moorhead, and Grand Forks-East Grand Forks to meet federal requirements and guide future ITS deployment.
- Updated and calibrated the Fargo-Moorhead Metropolitan Council of Government Travel Demand Model, which is used to support future corridor investment plans, evaluate land use decisions and support new development.
- Sponsored training workshops on hot transportation technology topics including: ITS architecture, fiber optics, smart work zone technology and traffic simulation.
- Assisted NDSU on several safety studies and traffic circulation.

Department of Transportation Support Center

- Provided technical support for the N.D. DOT's strategic plan – specifically to meet the objectives of improving ride quality by 10 percent ride and load capacity by 20 percent.
- Continued to train civil and construction engineering students in highway design. Approximately 25 students have been in the program since its inception in 2001; 13 have graduated; 11 are working with the DOT.
- Worked on a potential expansion of the program to include a DOTSC West located at the Bismarck Junior College campus with possible collaboration with the United Tribes Technical College.
- Provided information technology support to the DOT, primarily in the conversion or updating of existing small applications.

Transportation Safety Systems Center

- Continued to develop high-quality software in use by Federal and State commercial vehicle safety specialists nationwide.
- Conducted leading-edge research into the development and implementation of a driver safety indicator based on the number of traffic convictions of the drivers that companies hire. This indicator will assist enforcement personnel in the focusing of their inspection efforts.
- Continued work on a project with the Department of Homeland Security's Customs and Border Protection to ensure inspectors will have the ability to identify and contain unsafe commercial motor vehicles and drivers at the borders before they reach our nation's roads.
- Conducted numerous presentations at national meetings regarding the research and software development we have completed.

TEL8

- Held an eight-hour instructional program on updates to the FHWA's Manual on Uniform Traffic Control Devices. The training session was viewed in North Dakota, Wyoming, Montana, Colorado and Utah by over 200 professionals ranging from police officers to traffic engineers. The program featured a specialist in traffic control devices from Louisiana State University.
- Hosted "Marketing on a Shoestring" for about 30 transit managers across the Dakotas. The program featured tips for improving funding and visibility for small urban and rural transit operations. The effort marked another event in TEL8's collaboration with transit professionals.
- Extended reach to the district level in participating states. The network reaches 20 sites in Montana and Wyoming with another 8 sites in North Dakota scheduled to come online soon. By broadcasting to more sites, TEL8 broadens its reach and reduces the cost of professional development for participating transportation departments.

Mountain-Plains Consortium

- Conducted a distance education graduate course in Intelligent Transportation Systems to students from Wyoming, North Dakota, Colorado and Utah. Course materials were developed by 12 specialists from across the nation and the course was taught by the head of the University of Utah's traffic laboratory.
- Partnered with the Northern Plains Tribal Technology Center in Bismarck to make highway planning and safety tools available to tribal transportation planners in the region. MPC also sponsored a half-day workshop on low-volume road safety at the Tribal Workforce and Transportation Conference.
- Hosted officials of the Research and Special Projects Administration of the U.S. DOT. The visit was the first such conducted under the Federal Highway bill enacted in 1998.
- Expanded the interdisciplinary doctoral program in transportation and logistics. The program was first offered in 2002. There are now 13 students in the program. The program allows students to develop advanced knowledge and research skills in the rapidly growing fields of transportation and logistics.

Future Direction

The UGPTI continues to evolve to address emerging transportation and mobility challenges and opportunities in the region. These issues are spurred by new technology, demographic changes and changes in the ways people live and work. Programs under development include:

School Bus Routing Program will address the challenges posed by a shrinking number of school-aged children and the growing distance between schools as districts consolidate. The program will offer expertise to school administrators, identify widespread problems and opportunities, help school districts develop bus routes to maximize efficiency and explore policy issues associated with school transportation funding.

The Center for RFID Transportation Applications will increase freight mobility and improve transportation system performance through research and outreach programs related to radio frequency identification (RFID) technology applications in infrastructure, fleet management, supply chain management and human mobility. Improved application of the technology to transportation will assure the region remains competitive in the global marketplace.

An associate's degree program being proposed in cooperation with Bismarck State College will help students develop technical and management skills that are needed by transportation service providers and their customers in North Dakota. It is anticipated that program graduates will either enter the work force or pursue a related four year degree at NDSU. This program will hopefully become available starting this fall and will be self-sustaining from income generated from student tuition.

The Joint Military Logistics and Transportation Graduate Program will be designed specifically for U.S. military and related personnel to enhance joint logistical effectiveness and efficiency. This master of science program would provide new approaches and apply evolving technology to meet the changing and complex battlefield, peacekeeping and rebuilding environments.

The Regional Center for Freight Mobility will develop information on the dynamics of freight transportation needs on a regional basis to develop a more efficient effective and secure freight transportation system. A regional approach will address the interstate nature of commerce and the resulting inter-jurisdictional issues. The center will be developed in collaboration with Washington State University and the University of Washington and include research and outreach on supply chain management, technology applications, logistics, and network economics and modeling.

The **Transportation Learning Network** is an evolution of the TEL8 network. It unites states and universities in a unique partnership using technology to help people work together on transportation issues in the region. Each partner provides transportation programming, training and technology transfer to the network. Efforts will include technical training, transportation short courses, peer sessions, graduate-level classes, professional management and leadership courses and seminars. The network connects the North Dakota, Wyoming and Montana departments of transportation and the four Mountain-Plains Consortium universities – Colorado State University, North Dakota State University, University of Utah and University of Wyoming.

The **North Dakota Business Logistics Research and Support Center** will enhance the competitiveness of North Dakota firms and enhance business volume by providing transportation and logistics training, analysis, and human capital. The program will generate information, promote public private partnerships, and assist in the development of public policy that improves supply chain management through increased efficiency and effective-ness. This program will meet the needs of rural businesses that are not located in major urban areas that have access to firms that supply this type of support, and are in areas where a concentration of business leads to best practices simply by being around other firms that are on the cutting edge of supply chain management.

BUDGET REQUEST

REQUEST / RECOMMENDATION COMPARISON

Date: 12/17/2004

SUMMARY

627 UPPER GREAT PLAINS TRANS INST
Biennium: 2005-2007

Bill#: SB2020

Time: 12:30:02

Description	Expenditures Prev Biennium	Present Budget	2005-2007 Requested		Requested Budget	2005-2007 Recommended		Executive Recommendation
	2001-2003	2003-2005	Incr(Decr)	% Chg	2005-2007	Incr(Decr)	% Chg	2005-2007
BY MAJOR PROGRAM								
CORE PROGRAM	8,178,767	10,888,246	4,420,659	40.6%	15,308,905	4,875,827	44.8%	15,764,073
TOTAL MAJOR PROGRAMS	8,178,767	10,888,246	4,420,659	40.6%	15,308,905	4,875,827	44.8%	15,764,073
BY LINE ITEM								
TRANSPORTATION INSTITUTE	8,178,767	10,888,246	4,420,659	40.6%	15,308,905	4,875,827	44.8%	15,764,073
TOTAL LINE ITEMS	8,178,767	10,888,246	4,420,659	40.6%	15,308,905	4,875,827	44.8%	15,764,073
BY FUNDING SOURCE								
GENERAL FUND	544,054	526,595	-43,496	-8.3%	483,099	-25,550	-4.9%	501,045
FEDERAL FUNDS	4,634,713	7,432,755	3,113,074	41.9%	10,545,829	3,465,971	46.6%	10,898,726
SPECIAL FUNDS	3,000,000	2,928,896	1,351,081	46.1%	4,279,977	1,435,406	49.0%	4,364,302
TOTAL FUNDING SOURCE	8,178,767	10,888,246	4,420,659	40.6%	15,308,905	4,875,827	44.8%	15,764,073
TOTAL FTE	27.75	31.50	17.00	54.0%	48.50	17.00	54.0%	48.50

OPT 20 PCT INCR - \$96,620 - The UGPTI is requesting additional general funds to develop a ND School Bus Routing program. An additional \$158,503 in federal funds will also be used to fund this program.

NDSU proposes to establish a *School Bus Routing Support Program*. This program is in response to several factors including consolidation of school districts resulting from declining enrollment, growth in a very limited number of districts, increased complexity in school busing issues, availability of complex routing software, and the potential underutilization of personnel at the district level trained to use this software. This program would assist North Dakota school districts in analyzing their routing issues on an as needed basis within the limits of the resources available for the program. Further, it would explore the policy issues associated with school transportation funding. Additionally, the program would interface with the *Small Urban and Rural Transit Center (SURTC)* to explore ways in which public transportation and school transportation could be coordinated and share resources if possible. The ultimate goal of the program is to provide better transportation for students while making better use of the scarce resources available for school and public transportation.

Presently, there are 213 school districts in North Dakota which transport nearly 68,000 students every school day. Districts range in size from 15 square miles (Williston 1 School District), to 1450 square miles (McKenzie Co 1 School District). Thirty-five North Dakota School districts cover 500 square miles or more while 28 North Dakota school districts encompass less than 100 square miles. This large range in geographic size makes school bus routing unique on a district to district basis.

Rural communities are faced with declining populations and school consolidations, which force students to spend hours on the bus everyday. Urban communities are faced with rapid growth of communities and school districts, which often force students to transfer between buses once or more on their way to and from school. Rather than developing new bus routes, existing ones are often altered in an attempt to solve the problem. This may work in the short run, but in the long run greater sophistication is necessary.

Advanced school bus routing software programs are very helpful to school districts, but also expensive. Most school districts are unable to bear the costs themselves. Also, school districts do not possess either the expertise or technology necessary to solve complex school bus routing problems. They are also involved heavily in day-to-day activities, which leave little time to spend developing advanced routing schedules for their respective school districts. Within the school bus routing program, software cost can be shared between the school district and the program. The program will be administered by transportation professionals at the Small Urban & Rural Transit Center (SURTC), minimizing the cost and eliminating the time necessary for school districts to perform advanced routing tasks themselves.

A 20% increase in the general fund base of UGPTI (or \$96,620) is requested to develop this program. An additional \$158,503 in federal funds will also be used to fund this program.

CHANGE PACKAGE SUMMARY
627 UPPER GREAT PLAINS TRANS INST
Biennium: 2005-2007

Bill#: SB2020

Date: 12/27/2004
Time: 13:08:39

Description	FTE	General Fund	Federal Funds	Special Funds	Total Funds
AGENCY BUDGET CHANGES					
Cost To Continue	10.00	-43,496	-943,165	1,143,438	156,777
OPTIONAL REQUEST					
01 Equipment Over \$5,000	.00	0	181,000	100,000	281,000
02 Mountain-Plains Consortium - Grant	.00	0	1,290,000	0	1,290,000
07 OPERATING INFLATION	7.00	0	2,585,239	107,643	2,692,882
Agency Total	17.00	-43,496	3,113,074	1,351,081	4,420,659
OPTIONAL REQUEST					
28 OPT 20 PCT INCR	2.00	96,620	158,503	0	255,123
Optional Total	2.00	96,620	158,503	0	255,123

Supplemental Budget Needs

The Upper Great Plains Transportation Institute has leveraged a talented staff and an investment from the State of North Dakota to become a diverse and flexible resource for individuals, businesses and agencies facing transportation and mobility issues and opportunities in North Dakota and the region. Continued growth of that resource is in jeopardy because its foundation, North Dakota’s investment, is stressed beyond its carrying capacity.

Shortfalls

- As our programs have expanded, our *base administrative level* can no longer support the institute. While contracts and grants include administrative funds, those funds are restricted to uses that support those contracts and grants. Meanwhile, an infrastructure of administration must be maintained to keep the institute functioning efficiently. The Upper Great Plains Transportation Institute will continue to address the transportation and mobility needs of North Dakota with research and outreach programs. North Dakota’s investment will help determine how successful we will be. An additional investment of \$200,000 could make the difference between and failure of some of the programs under development that have been outlined elsewhere in this document.
- It appears likely that Congress will pass the Surface Transportation Bill. The research title of the House bill, which the Senate will likely accept in the near future, includes an estimated \$3.5 million budget for each of the 10 required University Transportation Centers (that includes the UGPTI). Unfortunately, the criteria for those centers have changed to include a requirement that they receive at least *\$400,000 in regularly budgeted funds* from non-federal sources. With its current funding structure, the UGPTI would not comply with that requirement.
- Finally, the UGPTI’s optional request for *\$98,000 to fund the School Bus Routing Program* was not included in Governor Hoeven’s budget. This program is particularly timely as school districts face increasing costs, more complicated routes and regulatory issues that will force their transportation programs to become more efficient.

