

# Upper Great Plains Transportation Institute 2021-2023 Budget Request

Presented to  
the House Appropriations Committee  
Education and Environment Division  
by Denver Tolliver, Director  
Mar 9, 2021

# Major Statutory Responsibilities

- Established in 1967 to conduct research in transportation and logistics to facilitate a wider understanding of the marketing factors associated with the geographic location of the state (54-53-03)
- Findings, conclusions, and suggested solutions must be made public (54-53-03)
- Can contract for and accept private contributions, gifts, and grants-in-aid (54-53-04)

# Transportation Advisory Council

- A transportation council was created to serve in an advisory capacity to the Upper Great Plains Transportation Institute (54-53-02)
- Council shall consult with the Institute in matters of policy and the development of transportation in the state (54-53-02)
- Also review UGPTI's budget requests and make recommendations
- 19-member council includes the following state agencies and stakeholders

# Advisory Council Members

- Aeronautics Commission
- Associated General Contractors
- Association of Counties
- Chamber of Commerce
- Corn Council
- Department of Agriculture
- Department of Commerce
- Department of Transportation
- Farmers Union
- Grain Dealers Association
- Grain Growers Association
- League of Cities
- Lignite Energy Council
- Motor Carriers Association
- Public Service Commission
- Wheat Commission
- Dakota Transit Association
- Manufacturing Sector
- Railway industry

# UGPTI Centers/Programs

**Table 1. Centers, Programs, and Focus Areas**

- Advanced Traffic Analysis
- DOT Support Center
- Local Technical Assistance
- County Roads & Bridges
- Rural Transp. Safety
- Mobility
- Transp. Learning Network
- Commercial Vehicle Safety
- Real-time Simulation
- Agricultural Freight
- Rural Traffic Analysis
- Tribal Outreach

Mountain-Plains Consortium

# Audits

- UGPTI was audited by the Office of the State Auditor for the biennium ending 06/30/19
- UGPTI's financial transactions and expenditures were audited
- The audit did not identify any areas of concern
- This was the only audit of UGPTI during the 2019-2021 biennium

# Accomplishments, Challenges, Goals

## Challenges in 2019-2021 Biennium

- Adjustments needed in research, technology transfer, training, and administration
- Able to quickly shift to remote work/virtual delivery
- Research program largely unaffected
- Able to accomplish all research objectives
- COVID-19 accelerated distance-learning trends
- Successfully adapted most planned conferences and workshops to virtual events

# Accomplishments, Challenges, Goals

## Road and Bridge Investment Needs Study

- Biennial analysis of county, township, and tribal road investment needs
- 71,454 miles of road: incl. 5,682 miles of paved county road; 56,656 miles of gravel road
- Data, assumptions, and results presented to Interim Taxation Committee, WDEA, Township Officers, meetings of local government officials (2), NDDOT
- Feedback encouraged throughout the process

# Accomplishments, Challenges, Goals

## Road and Bridge Investment Needs Study

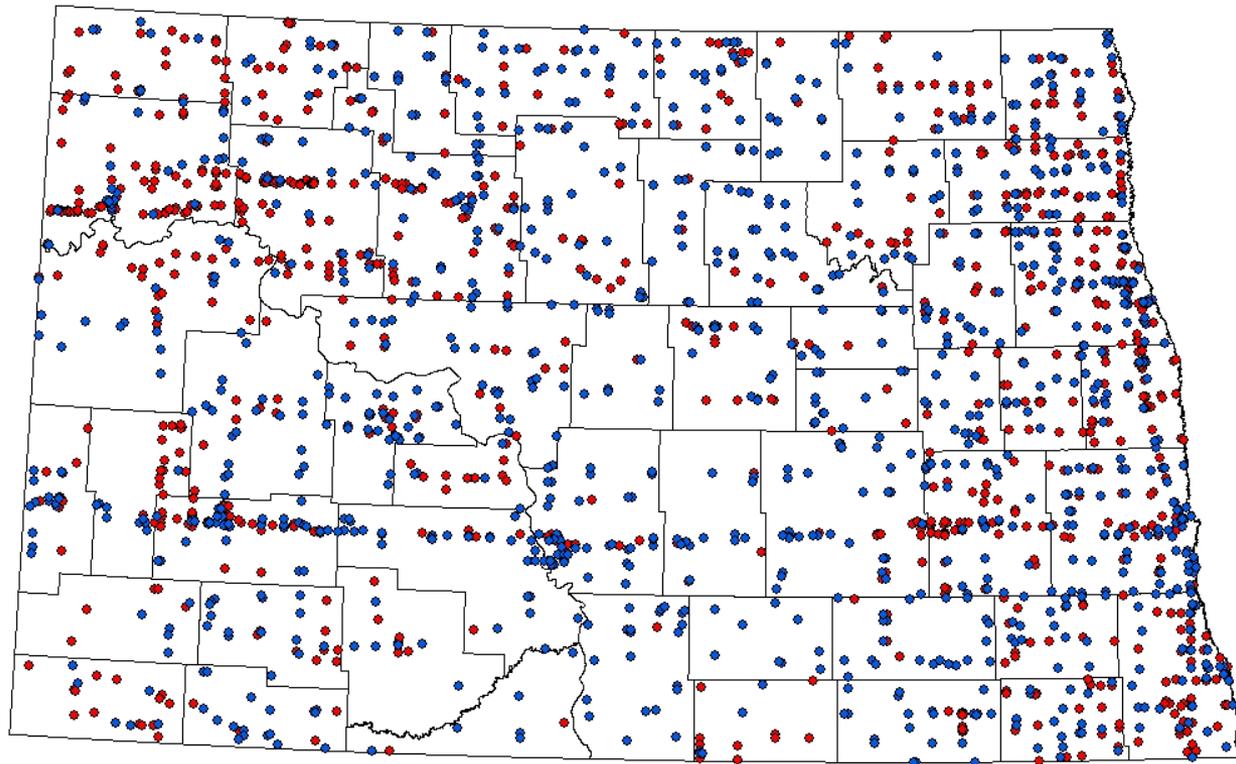
### Traffic Data Collection

UGPTI: 437 locations + NDDOT sites



Pre-COVID  
Data

Classification:  
Truck v. auto  
By truck size



# Accomplishments, Challenges, Goals

## Road and Bridge Investment Needs Study

- **Road Condition and Geometry Data**
- Road surface conditions on 5,000+ miles of paved county road
- Ride quality data collected using smart phones with special apps to measure road roughness
- Video images captured from phones → assess road conditions (e.g., cracking) and develop composite ride scores

# Accomplishments, Challenges, Goals

## Road and Bridge Investment Needs Study: Surveys

- **County road managers:** blading and gaveling practices, sources and costs of gravel, and other cost factors
  - All 53 counties responded to survey
- **Townships:** 75% response rate
- **MHA Nation**

# Accomplishments, Challenges, Goals

## Road and Bridge Investment Needs Study

- **Grain Elevator Truck Use Survey**
- Determine types of trucks used to haul grain from farms to elevators (e.g., tandem axle, tridem axle, and tractor-semitrailer), as well as the average distance of the inbound movements
- Information essential to forecasting road investment needs in the central and eastern parts of state

# Accomplishments, Challenges, Goals

## Road and Bridge Investment Needs Study

- **Bridge Condition Analysis**
- Current conditions of 2,261 bridges on county roads assessed during the biennium
- Condition forecasts developed using UGPTI's bridge deterioration model

# Accomplishments, Challenges, Goals

## Road and Bridge Investment Needs Study

- **Scenarios Analyzed**
- Original pre-COVID forecast of 1,440 new wells per year (60 rigs operating in state)
- Revised scenario: only 564 new wells added in 2020; number of new wells projected to increase annually, returning to 1,440 wells per year in 2025
- Lower bound scenario: drilling returns to original baseline level of 1,440 new wells per year in 2027

# Accomplishments, Challenges, Goals

## Road and Bridge Asset Management System

- Significantly improved the Geographic Roadway Inventory Tool (GRIT) for county road managers
- All data collected by UGPTI are uploaded to GRIT and combined with data entered by the counties
- GRIT stores and displays information on road surface type and current condition, shoulder width, subgrade strength, and other design features, as well as traffic, construction history, and improvement plans

# Accomplishments, Challenges, Goals

## Road and Bridge Asset Management System

- In the 2019-21 biennium, information on routine maintenance (e.g., seal coats), striping, and gravel road treatments were added
- A pavement condition forecasting procedure was included: allows counties to see expected conditions up to 35 years out
- Expanded reporting and mapping capabilities allow counties to view percentages of road miles in condition categories

# Accomplishments, Challenges, Goals

## Other Enhancements: Asset Management System

- Emergency related projects—e.g., flooding
- Load restriction webmap linked to NDDOT's Traveler Information map
- Counties can set and show active load restrictions (currently being added)
- Display bridge load postings
- Inventory of bridges and minor structures less than 20 feet in length

# Examples of Productivity 2019-21

- Thus far, 52 peer-reviewed transportation research reports published by UGPTI/MPC
  - Freely available from our website
- 460 training, e-learning, and outreach events, in which there were 13,170 participants.
  - Do not include expected events and participants during the remaining 6 months of biennium
  - Only the results as of December 31, 2020

# Goals & Plans for 2021-2023 Biennium

- Win critical grant competitions for Federal funds
- Road and bridge biennial study
- Enhancements to asset management system
- Tribal outreach/technical assistance
- Road safety and technology
- Remote sensing of surface transportation infrastructure

# Table 2. Base Budget and 2021-23 Request

Item	2019-2021 Base	2021-2023 Request	Change to Base
General Fund	\$4,396,329	\$4,621,329	+\$99,320
Federal Funds	\$12,663,210	\$12,663,210	\$0
Special Funds	\$6,232,684	\$6,232,684	\$0
Total: All Funds	\$23,292,223	\$23,517,223	+\$99,320
FTE	43.88	43.88	0

# General Funds: Needs and Purpose

- Essential to success and sustainability
- Needed to match federal grants
  - Many (such as UTC grant) require a 100% match
  - Non-federal source funds
  - UGPTI's general funds only dependable source of match
- Only hard dollars in UGPTI's budget
  - Federal and special funds provided at discretion of other agencies; subject to their budget limits
  - GF provide continuity in times of delay or disruption in federal funding

# Executive Recommendation

<b>Table 3</b>	<b>General Fund</b>	<b>Federal Funds</b>	<b>Special Funds</b>	<b>All Funds</b>
<b>2021-23 Legislative Base</b>	\$4,396,329	\$12,663,210	\$6,232,684	\$23,292,223
<b>Recommended reduction</b>	<b>-\$219,816</b>	\$0	\$0	<b>-\$219,816</b>
<b>2021-23 Base Budget</b>	\$4,176,513	\$12,663,210	\$6,232,684	\$23,072,407
<b>Reprioritize 5% Spec. Funds</b>			<b>\$311,364</b>	
<b>2021-23 FTE</b>				<b>43.88</b>

# Executive Recommendation (cont.)

- Impacts of recommended 5% cut
  - Harm existing state programs
  - Result in unmet demands in the state
  - Limit capability to match federal grants
- Advisory Council and SBHE recommend restoration of cut
- Senate bill 2020 restored the cut

# SB2020 Appropriation

Upper great plains transportation institute	Base Level	Enhancements	Appropriation
	\$23,292,223	\$258,164	\$23,550,387
Total all funds	\$23,292,223	\$258,164	\$23,550,387
Less estimated income	18,895,894	158,844	19,054,738
<b>Total general fund</b>	<b>\$4,396,329</b>	<b>\$99,320</b>	<b>\$4,495,649</b>
FTE positions	43.88	0.00	43.88

# Conclusion

Thank you considering UGPTI's 2021-23 Request

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**Table 6. Requested Changes to 2019-2021 Base**

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Item	Amount
2019-2021 Base	\$4,396,329
2021-2023 Request	<b>\$4,495,649</b>

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Note: this request does not include a supplemental request not considered by the Senate