NDDOT Needs Beyond Pavements and Bridges

Presented at the Transportation Symposium on Funding

March 14, 2018
Like a House
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NDDOT Invests in Your

- Safety
- Freight & Personal Mobility
- Drivers Licensing
- MV Registration
- Snow & Ice Control
- Bike & Pedestrian
- Transit
- Maintenance
- Rail
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North Dakota Department of Transportation
NDDOT Invests in Your...

- **Safety**
  - **VISION ZERO**
  - NDDOT considers safety in every stage of a project and in every investment decision.
  - Measure: Total # of fatalities & serious injuries per calendar year

- **Drivers License**
  - Driver’s licenses enhance safety by ensuring roadway users have demonstrated knowledge of the rules.
  - Measure: Avg. counter wait time for customers.
NDDOT Invests in Your...

- **Motor Vehicle Registration**
  - Nearly 1M MV registrations & transactions per year.
  - Measure: Avg. time for vehicle titles to be processed.

- **Bike & Pedestrian Infrastructure**
  - Not everyone drives but still must travel; some are non-motorized.
  - Measure: % of state roadway miles in cities with such non-motorized options (sidewalks, bikepaths, etc.).

- **Transit**
  - Not everyone drives but still must travel; some use buses.
  - Measure: Total statewide ridership.
Freight & Personal Mobility

Unrestricted freight movement and uncongested roadways contribute to the economic vitality of the state.

Investments improve roadway services
- Increased load carrying capacity, more lanes, etc.

Measure: % of state system meeting expectations for:
- non-seasonal load carrying capacity,
- bridge vertical and horizontal clearance,
- seasonal load limit,
- traffic saturation, and
- roadway width.
NDDOT Invests in Your...

- **Pavement Management**
  - Keeping good roads good.
  - Measure: Avg. state system International Roughness Index (IRI)

- **Bridge Management**
  - Keeping good bridges good.
  - Measure: Avg. state system bridge health index
Rail

- Rail lines help move commodities throughout ND.
- NDDOT’s low-interest Rail Loan program helps short-line railroads & rail-dependent businesses with rail infrastructure needs (e.g. mainlines, sidings, etc.)
- Measure: Mileage of short-line rail with lightweight rail (rail less than 110 pounds per yard) in ND.
NDDOT Invests in Your...

**Operating Road & Bridge Maintenance**
- Day to day operations and maintenance of the state highway system is paid for with state funds.
- Measure: % of planned work completed per year.

**Snow & Ice Control**
- NDDOT ensures the transportation system is functional year-round, including in winter.
- Measure: Avg. travel speed recovery time after snow events.
Investment Scales

- Just like you can’t buy a new roof by mowing less
  - NDDOT can’t buy much pavement improvement by increasing Drivers’ License wait time or storing $220,000 plow trucks outside.
- However, it can increase the life of those trucks by storing them in good facilities, in turn reducing Snow & Ice Control costs.
Building a house takes time:

- Finding a lot
- Arranging financing
- Finding a builder
- Design
- Actual construction.
- 1-2 years and we only need to please our own family.

Transportation investments typically take 4-6 years (longer for major projects), with proper public input.
**Investment Timing is Critical**

- Long-term planning - known funding generates efficiencies.

![Graph showing the cost effectiveness of pavement preservation](image)

Source: National Center for Pavement Preservation.
Investment Timing is Critical

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Preventative Maintenance (preservation) treatment
Investment Timing is Critical

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Minor Rehabilitation (preservation) treatment
Investment Timing is Critical

- Long-term planning - known funding generates efficiencies.
Investment Timing is Critical

Structural Improvement (beyond preservation) treatment
Investment Timing is Critical

- Long-term planning - known funding generates efficiencies.

Source: National Center for Pavement Preservation.
Investment Timing is Critical

Major Rehabilitation/Reconstruction
Inflation

- UGPTI and NDDOT needs analyses ignore or minimize inflation, even though construction costs have risen:
  - 80% in approximately the last decade and
  - 117% since 2005, the last time ND raised the gas tax.
UGPTI talked about pavement & bridge funding needs
“Needs” are dependent on the desired service levels.

Like your house:
- How much landscaping costs depends on how often you water and mow.
- But, there are impacts to how that landscaping looks.
Funding Needs

• “Needs” typically are based on maintaining current service levels & optimal treatment timing.
  • That’s what UGPTI did for pavements & bridges, too.
• To maintain current service levels across all NDDOT services, over the next 20 years:
  • Would require investing $24.6 Billion
  • Current funding levels would generate $10.0 Billion
  • Equaling a gap of $14.6 Billion over 20 years.
• We’re in Preservation Mode and can’t even keep up with that.
The real question isn’t what are the funding “needs”

- It’s what service level are customers willing to pay for...
- If they’re unhappy with the current service level because:
  - It’s too expensive, NDDOT can reduce cost by lowering service
  - It’s not good enough, NDDOT can increase service for a price.
- It’s just like watering and mowing a lawn.
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Constraints are based on expected performance for the roadway level; lower level roads may have load restrictions & other limitations, even if not “constrained” on this map.
Summary

- Long-term predictable funding generates efficiencies:
  - Right fix, Right time, Right asset = lower life-cycle costs
  - Most transportation projects require 4-6 yr. lead time

- To keep up with Preservation Mode activities across all NDDOT services (e.g. roadways, maintenance, snow & ice control, motor vehicle, etc.), over the next 20 years:
  - Would require investing $24.6 Billion or $14.6 Billion more than today’s funding level would generate.
  - This won’t provide a system free of narrow shoulders, load restrictions, etc. but would meet guidelines on all levels of roadways and other services.
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