How-To Webinar – Needs Study Survey

Local Road Infrastructure Needs Assessment
Webinar – September 23, 2015, 9 AM to 10 AM CT

The webinar will begin at 9 AM CT. Please use the chat box to provide input and ask questions.

Alan Dybing, Dale Heglund, Brad Wentz & Andrew Wrucke
Upper Great Plains Transportation Institute
Today’s Presentation:

- Review of local road/infrastructure 2015-2017 Needs Study (Dale Heglund)
- Review of the data collection survey for the Needs Study. Open format to ask questions, via chat box, for each survey data field (Alan Dybing)
- Update on the status of other data collection efforts (Brad Wentz & Andrew Wrucke)
- Questions
Local Roads Infrastructure
2015-2017 Needs Study Process

• **Data Collection**
  – Gravel costs and practices surveys
  – Traffic counts
  – Paved road condition assessment
  – Non-destructive pavement strength testing

• **Data Verification**
  – County Township Jurisdiction

• **Traffic Modeling/Forecasting**

• **Pavement Analysis**

• **Bridge Analysis**
Data Collected for 2013-15 Study

- Gravel costing surveys for 52 counties and 635 townships
- Jurisdictional data for 52 counties
- 1,000+ vehicle counts and classifications by NDDOT & UG PTI
- 5,600 miles of pavement video image, pavement distress and ride data
- 1,500 miles of pavement/subgrade strength and depth surveys
- NBIS data on 2,327 local bridges
Outlook for the 2015-2017 Study

- Legislative expectations for ever-improving data
  - Emphasis on uniformity of gravel costing submissions
  - Continued improvement to traffic data and forecasting
  - Updated costing and modeling concepts
  - Continued emphasis on maintaining system – not providing for major upgrades.
Gravel Cost and Practices Surveys

- Survey of both counties and townships
- Responses reflective of actual improvement and maintenance activities is critical
- Comparison between neighboring counties
  - Cost
  - Regional average
- Status
County Road Needs Study

County: ________________________________

Contact: _____________________________  _____________________________  _____________________________
        Name                  Phone                  Email

Preparer: _____________________________  Date Prepared: ________________________________

**Aggregate Description**

To determine the type and quality of aggregate used in your county, please check all boxes that apply. For example, if your county uses crushed, spec gravel – select crushed material and specifications.

- Gravel
- Scoria
- Pit Run
- Crushed Material
- Specifications
- Tested
- Other___________________________
**Placement Practices**

When aggregate overlays are placed in your county, please select the typical practice that is used to apply an aggregate overlay.

- Truck Drop and Blade
- Windrow/Equalize
- Water/Rolling/Compaction
- Other ________________
Operational Tasks

In this section, please provide a percentage of tasks that are done using county resources versus the percentage of work done by a contractor. For example, if your county owns the pit and does all of the crushing using county labor, 100% would be entered into the first column, and 0% in the second column.

<table>
<thead>
<tr>
<th>Task</th>
<th>Performed by:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>County</td>
</tr>
<tr>
<td>Crushing</td>
<td></td>
</tr>
<tr>
<td>Hauling</td>
<td></td>
</tr>
<tr>
<td>Placement</td>
<td></td>
</tr>
<tr>
<td>Blading</td>
<td></td>
</tr>
<tr>
<td>Dust Control</td>
<td></td>
</tr>
<tr>
<td>Base Stabilization</td>
<td></td>
</tr>
</tbody>
</table>
**Gravel Road Costs**

Please report costs for gravel for county roads in the table below. The table asks for unit costs for graveling, maintaining, and operating gravel roads. If you are quoting contractor prices, please circle “yes” in the right hand column.

<table>
<thead>
<tr>
<th>Gravel/Scoria Cost</th>
<th></th>
<th>Is this Contractor Price? (yes/no)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Average Gravel/Scoria Cost (crushing &amp; royalties at the pit)</td>
<td>Per cubic yd.</td>
<td></td>
</tr>
<tr>
<td>- Trucking Cost from Gravel Origin</td>
<td>Per loaded mile/Cu. Yard</td>
<td></td>
</tr>
<tr>
<td>- Average trucking distance for aggregate</td>
<td>Miles</td>
<td></td>
</tr>
<tr>
<td>- Placement Costs</td>
<td>Per mile</td>
<td></td>
</tr>
<tr>
<td>- Blading Cost</td>
<td>Per mile</td>
<td></td>
</tr>
<tr>
<td>- Dust Suppressant Costs</td>
<td>Per mile</td>
<td></td>
</tr>
<tr>
<td>- Base Stabilization Cost</td>
<td>Per mile</td>
<td></td>
</tr>
<tr>
<td>- Snow Removal Cost</td>
<td>Per mile</td>
<td></td>
</tr>
</tbody>
</table>
Gravel Road Practices

This section asks for information regarding gravel road practices based upon differing traffic levels. Under the “Daily Traffic” row, please enter what you would consider low, medium and high traffic levels on gravel roads within your county. In the example below, low is categorized as less than 50 vehicles, medium 50-150 vehicles and high 150-350. This is expected to vary significantly from county to county, so please use your own estimates of traffic levels. Following the traffic entry, please enter the regraveling thickness, blading frequency, regraveling frequency, and whether dust suppressant or base stabilization are used at each of these traffic categories.

<table>
<thead>
<tr>
<th>EXAMPLE</th>
<th>Traffic Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Daily Traffic</td>
<td>&gt;50</td>
</tr>
<tr>
<td>Average Regraveling Thickness</td>
<td>3 in</td>
</tr>
<tr>
<td>Blading Frequency (# per year)</td>
<td>8</td>
</tr>
<tr>
<td>Regraveling Frequency (years between overlay)</td>
<td>7</td>
</tr>
<tr>
<td>Dust Suppressant (yes/no)</td>
<td>no</td>
</tr>
<tr>
<td>Base Stabilization (yes/no)</td>
<td>no</td>
</tr>
<tr>
<td>County Entry</td>
<td>Traffic Levels</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Daily Traffic</td>
<td></td>
</tr>
<tr>
<td>Average Regraveling Thickness</td>
<td></td>
</tr>
<tr>
<td>Blading Frequency (# per month)</td>
<td></td>
</tr>
<tr>
<td>Regraveling Frequency (years between overlay)</td>
<td></td>
</tr>
<tr>
<td>Dust Suppressant (yes/no)</td>
<td></td>
</tr>
<tr>
<td>Base Stabilization (yes/no)</td>
<td></td>
</tr>
</tbody>
</table>

If you answered yes for Dust Suppressant – which type do you use?
____________________________________

If you answered yes for Base Stabilization – which type do you use?
____________________________________

How would you classify the average gravel road condition in your county?
☑ Very Good ☐ Good ☐ Fair ☐ Poor
Comments or Suggestions (please attach additional sheets if needed):

Please return this survey in the enclosed envelope by **October 15, 2015**. Please direct any questions to Alan Dybing at 701.231.5988 or alan.dybing@ndsu.edu.

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Unpaved Improvement Types

- Traffic Category Improvement
  - Low: low volume average
  - Baseline: county average
  - Elevated: county average increased by 50%
  - Moderate: county average increased by 100%
  - High: county average increased by 150%, dust suppressant
  - Very high: county average increased by 200%, dust suppressant
Jurisdiction and Maintenance Survey

- Township
- Township owned, but maintained by the county
- Minimum maintenance roads
- Private
- IRR – maintained by the tribes
- IRR – maintained by counties

- Municipal
- Forest Service
- Air Force
- Other Federal Roads
- Scenic Routes
- Wildlife/Conservation Routes
Data Collection Status/Schedule

• Pavement Condition
• Traffic Counts
• Pavement Strength - NDT
• Data Reporting
Pavement Data Collection

• Condition data collection
  – Collected data with NDDOTPathway van
  – Approx. 5,000 miles of paved county roads
  – Did not collect short segments
  – Van provides consistent pavement distress and ride information

• Status
  – Data collection completed August 2015
  – Data Processing to be completed by December 2015
  – Data Available on web map February 2016
Traffic Data Collection

• Data collection
  – Joint collection with NDDOT staff and NDSU students
  – NDDOT 14’-15’ counts cover approx 2500 cnty loc
  – 500 additional counts were taken across state.
  – Will supplement with other local counts

• Status
  – Data collection complete October 2015
  – Data processing complete December 2015
  – Data available on web approx February 2016
Pavement Data Collection

• Non-destructive testing
  – Purpose: Expand the number of sample sections collected
  – Falling weight deflectometer (FWD) and ground penetrating radar (GPR)
  – Should complete county paved section NDT

• Status
  – GPR Started 9/16, to be completed by end of month
  – FWD Started 9/21, to be completed by end of October
Assessment of ND County and Local Road Needs, 2015-2017

This effort responds to the North Dakota Legislature’s request for a study of the transportation infrastructure needs of all county, township, and tribal roads and bridges in the state. For this study, infrastructure needs are estimated using the most current crop and oil production forecasts, traffic estimates, and roadway condition data. Agricultural and oil-related traffic is modeled in detail at the sub-county level. Oil-related traffic is predicted for individual spacing units, whereas agricultural production is estimated at the township level.

Downloads

- Statewide Interactive Map
  - Note that the map will be updated with new data as it becomes available
  - Navigating the Interactive Map (PDF, 188K)
- Presentation to the Interim Transportation Committee of the ND Legislature on August 20, 2015: Status of 2015-16 County and Township Road and Bridge Investment Needs

2013-2015 Project Files

- View Supplemental Information
Created for the 2013-15 Study

• An on-line interactive map showing images and data collected for the study so that it was available to the counties.
On-Line Interactive Map

[Image of an interactive map with various road and map options highlighted]

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Upcoming Study Process/Major Steps

– Gather additional pavement data to improve pavement modeling thru Asset Inventory Tool
  • Roadway Width, Pavement Thickness, Pavement Age, etc.
– Review Jurisdiction Data - ownership and maintenance
  • Review past results with Counties through LTAP
– Model Traffic, Road Costs & Assess Needs
– Present Data via on-line map
  • Enhanced version of 2014 version
Questions about the Needs Study?
UGPTI Needs Study Contacts

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