

Status of Transportation Infrastructure Needs Study

Pursuant to the language of SB 2325, the Upper Great Plains Transportation Institute is conducting an analysis of the “transportation infrastructure needs of all county and township roads in the state.” In 2010, UGPTI conducted separate studies of oil and agricultural haul roads. However, as indicated in the language cited above, the current study considers the combined effects of all economic activities on county and local roads throughout the state, including agricultural, manufacturing, and oil-related developments.

General Status

The overall study and its individual components are on schedule. A draft report with results will be ready in late June and a final document and results will be ready in September, in time for final budget planning.

Economic Data Collection and Input Meetings

Manufacturing

- We met with the Department of Commerce in August 2011 to discuss manufacturing trends and data sources, as well as additional impacts to agricultural and oil industries.
- The Department of Commerce’s “Company Background” survey (which was subsequently distributed) included questions concerning the number of inbound and outbound daily trucks at manufacturing sites in the state.
- This information is being included in the roadway investment study to estimate the numbers and types of trucks generated by manufacturers in North Dakota.

Oil Development

- We met with the Oil and Gas Division of the North Dakota Industrial Council to discuss changes in oil exploration practices and forecasted developments since the 2010-2011 study.
- Data regarding the location and number of saltwater disposal wells, existing producing wells, oil transload facilities, and supply locations were obtained from the Oil and Gas Division and the North Dakota Department of Transportation.
- The State Water Commission, Western Area Water Supply Project officials and AE2S were consulted to locate and establish capacities for existing and future freshwater supply locations.
- A series of meetings were held with county road supervisors and engineers in January 2012. In addition to mitigation strategies, specific traffic generation locations were identified by county officials.

- A series of GIS models were developed to assign individual drilling input and saltwater/crude movements to roadway segments. The results have been aggregated by roadway segment to estimate total traffic generated by oil development
- A 20 year traffic forecasting model is currently under development. The model utilizes the latest county-specific drilling forecasts obtained on March 6, 2012 from the Oil & Gas Division, which reflect a much larger number of forecasted wells than were identified in the 2010 study. Upon completion, the traffic forecasting model will assign oil specific truck movements to individual roadway segments.

Agriculture

- Township level production has been estimated from the National Agricultural Statistics Service (NASS) 2011 Crop Data Layer and combined with 2011 county-level production statistics to estimate the quantities of crops produced in nearly 1,900 land use zones in the state.
- Elevator throughput data has been obtained from the North Dakota Public Service Grain Movement Database and compiled for 2011.
- Demands at ethanol and processing plants have been estimated from industry data and reported plant capacities.
- Confidential information on sugar beet movements is being collected from American Crystal Sugar.
- A GIS-based crop distribution optimization model has been developed to route agricultural production from townships across the state to elevators, plants, and factories.

Roadway Data

Due to the short time frame for the 2010-211 studies, data collection efforts relied primarily on surveys of industry and county representatives. In contrast, independent traffic and roadway data have been collected in this study to ensure objectivity and increase the accuracy of the results. These efforts involve the collection of specific data elements, including:

- **Truck Weights:** The North Dakota Highway Patrol allowed UGPTI to collect data on truck configurations and weights at the Williston weigh station. This information will enable us to accurately calculate the equivalent single axle loads (ESALs) generated by agricultural and oil-related truck movements.
- **Roadway Conditions:** More than 1,000 miles of county major collector roads were independently scored using the NDDOT pavement distress guidelines.
- **Traffic Counts:** 107 traffic classification counts were conducted in western North Dakota to quantify the distribution, volume and classification of truck trips generated in the oil patch.
- **Local Input:** Meetings were held with oil impacted counties to discuss draft traffic model results, as well as to obtain information on the latest roadway maintenance practices being implemented on high volume county roads.

Roadway Maintenance Costs and Practices

It is important to establish county level component costs, since there are significant variations in gravel or scoria costs from county to county in North Dakota. To this end, surveys are being sent to each county in North Dakota requesting data related to the costs of component materials and maintenance practices. Similar surveys were distributed to township officials during the North Dakota Township Officers Association Workshop Tour in February and early March. The township survey responses are currently being analyzed.

It is important to note that investment needs are being estimated for all impacted roads: county, township, and tribal. Meetings have already been held with tribal planners to ensure that impacted roads on reservations are being properly represented in the study.

Remaining Timeline

- Survey of component costs and county practices – March 2012
- Roadway deterioration and needs estimates – April 2012
- Draft document and results – June 2012
- Final document and results – September 2012