



City of Grand Forks Staff Report

Service/Safety Committee – December 12, 2016

Agenda Item: Geographic Roadway Inventory Tool (GRIT) Presentation

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For Information Only

BACKGROUND:

Through the efforts of the City's Engineering Department, Upper Great Plains Transportation Institute (UGPTI), and the North Dakota Department of Transportation (NDDOT), there is a new tool available to see the existing conditions of the non-regional classified streets within the City of Grand Forks. The Geographic Roadway Inventory Tool (GRIT) will allow the Engineering Department to have a reconnaissance level view of the condition of our classified streets and prioritize these streets for maintenance activities. This information can also be used by our state legislators in an effort to allocate more state funding towards street maintenance activities. This website is available to public viewing through a link available on the Engineering Department's webpage and contains information on these streets from their age, cross section, current Pavement Condition Index (PCI) which looks at the deterioration of the pavement, the International Roughness Index (IRI) which looks at the rideability of the pavement, and their related Pavement Serviceability Rating (PSR).

The PCI and IRI data gathered for GRIT were obtained at the same time using a van with specialized equipment to measure and record information from the streets. The combined information provides a more complete picture as to the condition of the pavement, and the perception of the traveling public. The costs associated with the data collection was \$17,949.99 and the intent to participate was approved during the February 16, 2016 City Council meeting. The NDDOT funded UGPTI staff time associated with the project.

PCI was originally developed by the US Army Corps of Engineers and is a numerical index from 0-100 with 100 representing the best possible condition, and 0 representing the worst possible condition. The PCI looks at a portion of the pavement in each segment as a representative sample and visually inspects pavement distresses and their severity. This inspection method is beneficial because it can provide information as to the condition of the pavement and can provide information of the type and severity of the deterioration for engineering staff to better determine a suitable method of maintaining the pavement.

IRI is obtained from measured longitudinal road profiles. It uses a profilometer which measures the street's profile along the entirety of the length of the street. This measurement starts at 0 and goes up. The lower the value the smoother the ride. As a statistical tool, IRI has an advantage of being repeatable, reproducible, and stable with time. This method of measurement provides information which is relatable to the driver's perception of the roughness of the street.

The program uses computer algorithms to take the information provided by the PCI and IRI and convert them into a PSR score which provides a more complete picture of the condition of the pavement. GRIT takes these PSR score for the streets and color codes them into Very Good, Good, Fair and Poor conditions.

Another important aspect of this program was researching and entering data relating to each of these streets. This included when the street was originally built, the pavement cross section, and any significant pavement rehabilitation that had been completed. For this task an engineering intern went through record drawings of construction projects and entered the relevant information into GRIT.

A walkthrough of the GRIT website will be provided at the Committee of the Whole meeting.

ANALYSIS AND FINDINGS OF FACT:

- A Link to the website is provided on the Engineering Department's webpage
- The website can be directly accessed at the following website http://dotsc.ugpti.ndsu.nodak.edu/GRIT_Viewer/
- The City costs associated with gathering

SUPPORT MATERIALS:

- N/A