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Prepared By: _____________________________________   Date: ____________
Jennifer L. Sharkey, PE
Steuben County Highway Engineer
Introduction
The Steuben County Highway Department is located in Angola, Indiana on County Road North 200 West. There are 28 employees including 1 Engineer, 1 Superintendent, 1 Clerk, 2 Mechanics, 1 Sign Technician, 12 Equipment Operators, 8 Truck Drivers, 1 Laborer, and 2 Part-Time Help/Operators. Responsibilities of the highway department can be separated into two categories; engineering and maintenance.

Engineering Duties
- Long-term transportation planning
- Design of bridge and road projects
- Construction, inspection, and management of both in-house and federally-funded projects
- Traffic management and count analysis
- Data and project management
- Development review

Maintenance Duties
- Road paving and chip seeding
- Road patching
- Gravel road grading
- Ditching and berming
- Bridge maintenance
- Snow plowing
- Roadside mowing
- Drainage control

These duties are performed to maintain and improve county infrastructure (640 miles of roadway) which includes:

<table>
<thead>
<tr>
<th>Description</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Paved Roadway Miles</td>
<td>390</td>
</tr>
<tr>
<td>Total Chip Seal Roadway Miles</td>
<td>30</td>
</tr>
<tr>
<td>Total Gravel Roadway Miles</td>
<td>220</td>
</tr>
<tr>
<td>Total Large Bridge Structures (over 20 feet)</td>
<td>49</td>
</tr>
<tr>
<td>Total Small Bridge Structures (under 20 feet)</td>
<td>13</td>
</tr>
<tr>
<td>Total Large Culverts (over 4 feet &amp; under 20 feet)</td>
<td>14</td>
</tr>
</tbody>
</table>
Funding
The Steuben County Highway Department receives funds from several local, state, and federal sources for both maintenance and project activities as well as day-to-day operations. The funds used include:

Motor Vehicle Highway (MVH)
These funds are administered and distributed by the State (IC 8-14-1). This is the largest source of state aid for road construction and maintenance activities. Revenue comes from a variety of sources with two-thirds coming from motor fuel taxes. Funds are distributed to all local government agencies within the State of Indiana based on a specific distribution formula. MVH funds are used for maintenance activities and associated expenses.

Local Road and Street (LRS)
Similar to MVH funds, local road and street funds are administered and distributed by the State using a specific formula (IC 8-14-2). These monies are collected from gas tax revenue and are used for maintenance activities and supplies.

Cumulative Bridge Funds
These funds are collected locally as part of the Steuben County property tax and are used for bridge maintenance and construction activities (IC 8-16-3).

County Economic Development Income Tax (CEDIT)
These funds are collected locally as part of the Steuben County income tax and are used for expenses related to highway equipment and maintenance (IC 6-3.5-7).

Major Moves Construction
These funds were generated based on the lease of the Indiana Toll Road in 2005. Funds were distributed by the State and are used for county projects related to infrastructure and economic development (IC 8-14-14).

Alternative Funding Sources
The Local Option Highway User Tax (LOHUT) was adopted in 2017 to begin collection in 2018. Additional funding sources such as state and federal grants as well as an increase in distribution from gas taxes and other revenue generators are expected in 2019.
Projects
There are many projects that are on-going and planned for the upcoming year. A brief outline of each project is provided with a more detailed plan of maintenance and construction activities for the next five years outlined in the Steuben County Asset Management Plan which has been approved by the Indiana Department of Transportation (INDOT) through the Local Technical Assistance Program (LTAP) and is available for review.

Federally-Funded Projects

Countywide National Bridge Inspection and Inventory Program (Des No. 1592938)

Location: All areas of Steuben County
Inspected By: Clark-Dietz
Contractor: Not Applicable
Phase I Inspections: October 2017
Phase II Inspections: October 2019
Estimated Cost: $91,140

Funded By: Federal Funds 80%
Local Funds 20%

This is a four year contract to inspect every Steuben County bridge structure over twenty feet in length every two years during the contract length. The new compliance month for bridge inspections is October with the next inspection due in 2017. The County selected Clark-Dietz to perform the next round of inspections. A complete bridge inspection report is available at the Highway Department.

[Image of Bridge Elevation Diagram]

STEUBEN COUNTY - BRIDGE NO. 76-00002
CR 700S over TURKEY CREEK
CR 200 N near SR 827 (Des No. 1400739)

Location: CR 200 N from Kellygreen Drive to 500’ east of SR 827
Designed By: American Structurepoint
Inspected By: GAI Consultants
Contractor: TBD
Construction: Spring 2018
Estimated Cost: $3.56 million

Funded By: Federal Funds 80%
Local Funds 20%

This project includes widening the roadway to include two 12-foot travel lanes with 10-foot shoulders (8-foot paved and 2-foot gravel) and provide open side ditches. A portion of the western part of this project will continue the urban roadway section with a two-way left-turn center lane and curb and gutter section for roadway drainage. The at-grade railroad crossing along this corridor will also be widened and improved to include additional safety measures such as gates. The total length of improvements is approximately 3,060 feet. The project is scheduled to be bid in January 2018.
CR 200 N near I-69 Overpass (Des No. 1600762)

Location: CR 200 N from CR 200 W to I-69 Overpass
Designed By: American Structurepoint
Inspected By: TBD
Contractor: TBD
Construction: Anticipated in Spring 2021
Estimated Cost: $3.59 million

Funded By: Federal Funds 80%
Local Funds 20%

This project includes continuing the improvements made as part of the CR 200 N and CR 200 W intersection project. The current roadway will be widened to two 12-foot travel lanes with 7-foot shoulders (6-foot paved and 1-foot gravel) and graded side ditches. A curb and gutter section is proposed to accommodate drainage along the I-69 overpass bridge approach. The existing culvert under CR 200 N at the John Croxton drain will be replaced and extended based on meeting vertical curve requirements and widened roadway typical sections. The County is finalizing contracts with the consultant and INDOT for preliminary engineering services.
Locally-Funded Projects

Steuben County Trail – Phase II

**Location:** SR 127 from CR 300 N to Pokagon State Park

*Designed By:* Butler, Fairman, & Seufert

*Inspected By:* TBD

*Contractor:* TBD

*Construction Anticipated:* Spring 2018

*Estimated Cost:* $2.22 million

*Funded By:* Local Funds 100% Partnership w/ City of Angola

This project includes continuing the bike trail from the existing trailhead along SR 127 at CR 300 N north to Pokagon State Park. The total estimated length of this path is 2.0 miles and will consist of an asphalt paved section that is 8 to 10-feet wide with 2-foot gravel shoulders. A wooden boardwalk section will be constructed just south of CR 400 N to traverse a wetland area.
Pavement Preservation and Upgrades

Utilizing available funds, the Steuben County Highway Department conducted pavement preservation and maintenance activities resulting in a recovery rate of 35%. Activities performed include:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot Mix Asphalt</td>
<td>7.22</td>
</tr>
<tr>
<td>Double Chip Seal</td>
<td>5.94</td>
</tr>
<tr>
<td>Crack Seal</td>
<td>1.29</td>
</tr>
<tr>
<td>Micro-Surface</td>
<td>3.37</td>
</tr>
<tr>
<td>Bioseal</td>
<td>1.14</td>
</tr>
<tr>
<td>Full Depth Reclamation</td>
<td>5.10</td>
</tr>
<tr>
<td>Gravel</td>
<td>16.0</td>
</tr>
</tbody>
</table>

Funds used to complete 24.06 miles of hard surface road work included MVH, LRS, Major Moves, and CEDIT, totaling $664,744.75. The 2018 budget has appropriated approximately $500,000 for road work. It is anticipated to request additional appropriations for road work from the MVH and LRS accounts due to the increase in disbursements from the State as a result of HEA 1002 passed via the 2017 General Assembly. Once funds are available, work will be scheduled appropriately. Additionally, funds will begin to be collected in January 2018 as a result of the Local Option Highway User Tax implementation. The intent is to allow these funds to build over time, however, it may be prudent to appropriate these funds as available to address current needs of our roadway infrastructure. Consultation with the County Auditor is ongoing and funding needs are currently being reviewed. Additional discussions with County Commissioners and County Council will commence to determine the most economical and efficient use of all highway funds.

Pavement Markings

To address citizen concerns and provide additional value to our residents, the Highway Department utilized painting equipment to apply pavement markings using county personnel. This allowed the department to control the schedule of applying pavement markings once road projects were complete. There has been a learning curve during this process with improvements made to application methods. The County uses paint material due to cost and ease of application and will be investigating the opportunity to procure a painting device in the future. To properly apply paint pavement markings, the ambient air temperature must be at least 40 degrees and the pavement must be dry. Currently, the County provides pavement markings on more roadway facilities than is mandated by state regulations. This is to provide safe routes for motorists during poor weather conditions. In 2017 approximately 10 miles of roadway were striped.
Traffic & Asset Management

A summary of sign work completed by the highway department as of October 10, 2017 is shown below.

<table>
<thead>
<tr>
<th>2017 New, Replaced, Repaired, or Inspected Sign Totals (By Type)</th>
<th>2017 New, Replaced, Repaired, or Inspected Sign Totals (By Reason)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulatory</td>
<td>Condition</td>
</tr>
<tr>
<td>Warning</td>
<td>Obsolete</td>
</tr>
<tr>
<td>Guide</td>
<td>Safety</td>
</tr>
<tr>
<td>Object Markers</td>
<td>Routine Inspection</td>
</tr>
<tr>
<td>School</td>
<td>Vandalized</td>
</tr>
<tr>
<td>Total</td>
<td>Missing</td>
</tr>
<tr>
<td></td>
<td>Accident</td>
</tr>
<tr>
<td></td>
<td>Ordinance</td>
</tr>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>59</td>
<td>32</td>
</tr>
<tr>
<td>63</td>
<td>0</td>
</tr>
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<td>75</td>
<td>36</td>
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<td>5</td>
<td>67</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>203</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>198</td>
</tr>
</tbody>
</table>

Sign Database

This database is updated by the Highway Sign Technician to keep an accurate inventory of all signs owned and maintained by the Steuben County Highway Department. A complete sign inventory with GPS coordinates has been investigated by the Highway Engineer. To accomplish this objective assistance is necessary from the GIS Coordinator and part-time help to collect data. This proposed database will aid highway personnel to monitor age, type, installation date, location, and reflectivity of all active signs as well as monitor the frequency and reason for sign replacement (i.e. safety, theft, condition, etc.). Funds to complete this task will be requested once a plan of action is developed and costs are further refined.
Bridge Database

The Indiana Bridge Inspection Application System (BIAS) is used to store information on county bridges from past and current bridge inspection and inventory reports. Bridges are evaluated on several criteria that yield a sufficiency rating (100 = new bridge construction, 0 = closed bridge). A bridge with a rating less than 80 is eligible to apply for federal funding assistance. Based on the results of the biennial reports and program funding, priorities are established and maintenance plans are coordinated to address bridge issues. These priorities are outlined in the 10 Year Bridge Maintenance Plan prepared by the Highway Engineer. Steuben County bridges were inspected in October 2017 with a full draft report to be provided by the bridge inspection consultant in February 2018. At that time, a revised 10 Year Bridge Maintenance Plan will be developed.

The County spent approximately $102,700 on bridge maintenance in 2017 and plans to spend approximately $120,000 on bridge maintenance activities in 2018.

Roadway Database

This database contains basic information for each roadway segment in the County including segment identification, right-of-way width, surface width, surface material type, length of segment, location of segment, and direction of roadway. The Highway Engineer began a survey of roadway conditions using the PASER rating system in 2014 and completed all asphalt and chip seal roads in the county. These ratings have been used to compile and prioritize roadway maintenance needs in the Steuben County Asset Management Plan to assist with future planning of roadway projects and maintenance activities. The ratings were updated in 2017 and compiled into the formally accepted format of an asset management plan which was approved by LTAP and INDOT in June 2017. Approval of such plan allows Steuben County to apply for additional funding via the Community Crossings Match Grant Fund as well as adopt a local wheel tax and excise surtax at the revised maximum rates as approved by the Indiana General Assembly in 2016.
Developments

When a new subdivision is being developed in Steuben County, the developer must receive approval from various departments including the Highway Department and the Plan Commission. Should the developer desire to have the subdivision accepted into the County road network, County standards and specifications must be followed. The Steuben County Code of Ordinances provides typical sections and guidelines for construction. It is proposed to establish a *Steuben County Highway Construction Standards* document to better assist local developers with appropriate procedures and construction specifications relating to roadway development and construction.

Upon completion of a development, a formal request must be made by the developer to have the roadway accepted into the County road network. The Highway Engineer and Highway Superintendent will inspect the finished product and make a recommendation to the County Commissioners of acceptance or provide suggestions for improvements for future acceptance. It should be noted that although a roadway may meet county specifications, automatic acceptance into the county roadway network is not guaranteed. The entire roadway network and available funding must be evaluated to determine if additional facilities will hinder the maintenance and improvement efforts of current county facilities.

In 2017, no additional subdivisions were requested/accepted into the county roadway network. Based upon discussions with local site developers, there are two planned minor subdivisions in future years. If these roadways are accepted and added to the network, the Indiana Department of Transportation Road Inventory Supervisor is to be notified via request of mileage certification change for Steuben County. Since funding is based on number of lane miles of roadway, it is important that the County inventory is accurate.
County Highway Permits

Work that is planned within county right-of-way requires a permit for construction and is issued by the Steuben County Highway Department. Some work requires the contractor to submit a bond to the County as well as a fee for the permit. Once work is completed, the contractor shall notify the County for a final inspection of the work and refund of the permit fee, if applicable. The following permits were issued in 2017 as of December 7th:

<table>
<thead>
<tr>
<th>Permit Type</th>
<th># of Permits</th>
<th>Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Cut</td>
<td>3</td>
<td>$300.00</td>
</tr>
<tr>
<td>Road Bore</td>
<td>24</td>
<td>$1,950.00</td>
</tr>
<tr>
<td>Public/Private Road Approach</td>
<td>0</td>
<td>$0.00</td>
</tr>
<tr>
<td>Construction in County R/W</td>
<td>27</td>
<td>$3,400.00</td>
</tr>
<tr>
<td>Oversized/Overweight Vehicles</td>
<td>4</td>
<td>$625.00</td>
</tr>
<tr>
<td>Driveway</td>
<td>57</td>
<td>$2,800.00</td>
</tr>
</tbody>
</table>

| Total                                | 115          | $9,075.00 |

Revenues from these permits are retained in the Motor Vehicle Highway fund to be used for day-to-day operations of the Highway Department.

A new permit manual for county roads was approved by the County Commissioners on August 17, 2015 via Ordinance #872 and was revised in June 2017. The purpose of this manual is to outline the permitting process of the county highway department and provide clear guidance for each permit type.
Winter Operations

Depending on the weather, winter operations can be a challenge. Typical activities during the winter months include snow plowing, snow removal, spreading of material (salt/sand mixture), cleaning out drainage structures, and patching potholes. This past winter was fairly mild in comparison to previous years. Fortunately, that allowed the Highway Department to address road segments as planned during the summer construction months.

Winter Preparations

To prepare for the winter months ahead, the Highway Department has taken many proactive steps including advertising and awarding salt bids, ordering salt in mid-October (approximately 150 tons of treated salt and 300 tons of untreated salt), hauling ice control sand and preparing salt/sand mixture for quick accessibility (600 tons of salt/sand mixed in barn).

The Highway Department has continued to utilize calcium chloride with Boost with the salt and sand mixture to accelerate the rate of implementation of the mixture on ice and snow covered roads. Also, use of this product decreases the amount of salt and sand needed to clear county roadways. This product is an organic based, liquid pre-wetting agent that can be used as an anti-icer (pre-treatment) or deicer (post-treatment) product. The Highway Department has developed a spray unit for this application that will provide better distribution of the product. It is planned to use this product with pure salt to reduce the amount of sand placed on roadway segments which will assist with reducing sediment runoff and will delay the buildup of roadside berms.

Summary

The Steuben County Highway Department continues to strive to provide safe, accessible, and well-maintained public infrastructure for the community. With limited budgets, manpower, and equipment, it is essential that the Highway Department make the most of its resources and efficiently and effectively operate daily activities. Continual evaluation and improvements are made throughout the year to better serve the greater Steuben community.