



Design Summary Report

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PRELIMINARY DRAFT

DRAFT

FINAL

DESIGN SUMMARY

Road

Bridge or Culvert

Project

November 3, 2016

Route: Des. No.: 1592194, CR 26 North Dearborn Road, CR 203 Whites Hill Road

Project No.:

Structure File: NA Over:

County: Dearborn

Federal Oversight: Yes No To be Determined

Location and Project Description

The proposed project is located in Logan Township in northeastern Dearborn County along the northern limits of the Bright area. The project limits are from the intersection of State Line Road and North Dearborn Road west approximately 1.9 miles to the intersection of North Dearborn Road and White Hill Road and then north 2.2 miles to the intersection of Whites Hill Road and SR 46 near MP 46-152.9.

Existing Conditions

The existing county maintained roadways consist of a rural cross section with two driving lanes, approximately 10 foot wide with minimal shoulders and open channel drainage. There generally is no dedicated highway right-of-way present at this time for the respective roadways within the proposed project limits. Side slopes vary by location. There are roadside obstructions (utilities, vegetation) in some locations.

CR 26 North Dearborn Road

There are three areas located along North Dearborn Road with substandard horizontal curvature representing approximately 35% of the alignment between Stateline Road and Whites Hill Road. Generally the vertical profile of North Dearborn Road does not have substandard grades. However there are five substandard vertical curves based on available elevation data. See attached Concept 1 – Component 2: North Dearborn Road Improvements for the locations of proposed geometric improvements along North Dearborn Road to address the restrictive horizontal curvature.

CR 203 Whites Hill Road

Two areas have been identified with substandard horizontal curvature on Whites Hill Road.

From south to north, the first area is located approximately 2,000 ft. south of North Dearborn Road. The horizontal radii in this area may be sufficient however the embankment on the east side of the roadway combined with a sag vertical curve inhibits sight distance.

The alignment and approach profiles at the intersection of Whites Hill and Gaynor Ridge Roads result in a sharp skew angle with restrictive site distance necessitating the current signed stop on Whites Hill Road.

The area from Price Lane to north of I-74 has a 20 mph advisory speed due to horizontal curvature. South of Price Lane for approximately 2,000 feet, there are two horizontal curves that have restrictive horizontal curvature. AECOM evaluated the grades and vertical profile along Whites Hill Road based on available Indiana map data. There are sixteen substandard vertical curves between North Dearborn Road and SR 46 that may have sight distance issues. This represents approximately 30% of the alignment between North Dearborn Road and SR 46.

Additionally, the profile grade exceeds 9% and for much of the length exceeds 11%. The steep grades can be difficult to climb during inclement weather. In general, access to the Bright Area by commercial vehicles can be challenging due to steep grades, substandard horizontal curvature and lack of shoulders on the existing county road network. See attached Concept 1 – Component 3: Whites Hill Road Improvements for the locations of the proposed geometric improvements along Whites Hill Road.

There are no bridge structures on North Dearborn or Whites Hill Roads. There are two bridges on SR 46 between Whites Hill Road and Interstate 74. The bridges span Lewis Creek and the White Water River. The bridge over the White Water River is in fair condition and structurally sound but is considered functionally obsolete due to substandard shoulders and roadside barriers. The bridges current sufficiency rating is 59 of 100. While not an immediate need, the bridge is a candidate for replacement at the end of the 20 year study horizon.

Need for Improvement

The OKI Bright I-74 Study Team in coordination with the Advisory Committee established the following Draft Purpose and Need for the Study.

“Provide improved travel between the Bright area and Interstate 74 that meets INDOT’s design criteria, reduces travel time, and enhances connectivity and traffic safety while preserving the rural quality.”

The following major goals were identified during the initial phase of the Study:

- Preserve rural quality of the area
- Minimize environmental impacts
- Improve travel safety
- Enhance roadway connectivity and economic vitality

The Study recommendations include a proposed project to correct the existing geometric deficiencies generally along the existing alignment of North Dearborn and Whites Hill Roads. The proposed improvements include straightening horizontal curves in some locations, flattening or lengthening of substandard vertical curves and intersection realignment as shown on the attached two maps. The proposed cross section would provide a minimum of 12 foot travel lanes and a minimum of a two foot paved shoulder. There may be constraints to widening on a parcel by parcel basis that require additional investigation. The extent of widening will be determined during future phases of project development.

Prior Studies and Considerations

OKI 2040 Long Range Transportation Plan
Dearborn County Transportation Assessment Parsons Brinkerhoff (2004)
Dearborn County Comprehensive Plan 2014
Dearborn County Subdivision Regulations

Fish and Wildlife Meeting Held: Formal coordination with Fish and Wildlife has not been conducted at this time and would be conducted during future phases of project development.

Environmental Document Type and Approval Date: A *Red Flag Summary and Environmental Overview Report* for the Study Area with a focus on potential corridors for roadway improvements. The Red Flag Summary was conducted within the Study Area to identify potential areas of environmental concern. Field Environmental Investigations are not included in the scope of this Study. Likewise, NEPA documentation, permitting and federal, state or local agency coordination is not included in the scope of services. These tasks may be initiated on a project specific basis in future phases of project development after this study is concluded. The *Red Flag Summary and Environmental Overview Report* is available at Bright74.oki.org.

Environmental Document Addendum Type and Approval Date: N/A

Preliminary Field Check Held: A formal preliminary field check has not been performed at this time. AECOM staff conducted a field review during August 2016 of the proposed improvements.

Environmental Permit Required, Date Received: N/A, Permit requirements will be determined during future phases of project development.

The proposed design is consistent with the approved environmental documents: The proposed design incorporated findings from the project *Red Flag Summary and Environmental Overview Report*. Specific Environmental Commitments will be determined during future phases of project development.

Design Data

Project Design Criteria: INDOT Design Manual (2013), The applicable “3R” geometric design criteria is provided in Chapter 55 and summarized on LPA Rural Collector Figure 55-3C.

Functional Classification: Rural Collector (FHWA), Note: Dearborn County utilizes a separate system which classifies North Dearborn as an Arterial Category II and Whites Hill as a Collector Category II.

- Terrain: Rolling
- Design Speed: 45 mph
- Posted Speed Limit: 45/40mph
- Access Control: By Permit
- Number of Lanes and Width: Two lanes at 12 feet

- Shoulders Width and Type: Two foot paved and six foot graded shoulders
- Maximum Right-of-Way Width: 80 feet (Dearborn County Arterial - North Dearborn Road)
- Minimum Right-of-Way Width: 60 feet (Dearborn County Collector -Whites Hill Road)

Traffic Data

No turning movement counts are readily available for the intersections within the Study Area. Study-specific field traffic counts were not in the scope of work for this Study but would be necessary during future phases of project development.

Traffic volumes for selected functionally classified roadways in Dearborn County have been provided by the Dearborn County Engineer’s office and obtained from the INDOT Traffic County Database System. The INDOT traffic volume data is generally from 2012-2015.

- AADT (2015): 5,000 North Dearborn Rd., 1,600 Whites Hill Rd.
- DHV (2015): Design Hour traffic has not been developed at this time.
- Comm. Vehicles: Specific Truck Classification Counts have not been conducted as part of the OKI Bright I- 74 Study. The percentage is estimated to be less than 5%

Based on available information, existing roadways provide adequate capacity for current and forecasted future traffic volumes. No significant congestion problems have been identified by the design team or general public. A small area travel demand model developed for the study does not indicate future capacity or congestion problems on the county roadway network in the study area.

Description of Right of Way

- The proposed project will not require additional permanent right of way.
- The proposed project will require approximately 40 acres of permanent right of way from 147 individual parcels. This includes right of way to accommodate the existing roadway which has not been dedicated at this time. It is assumed that a new right of way width of 80 feet will be established on North Dearborn and Whites Hill within the proposed project area in accordance with the Dearborn County Zoning Ordinance and Subdivision Regulations. Specific right of way takes on a parcel by parcel basis will be determined during future phases of project development.
- Relocations of businesses or residents will not be required.
- Relocations of businesses or residents will be required of the properties as follows: No relocations are anticipated this time. Some outbuildings or auxiliary structures may be removed.
- The proposed project will not require additional temporary right of way.
- The proposed project will require of temporary right of way.

The specific need for temporary construction easements etc. remains to be determined. Limits of temporary right of way will be determined based on the width of permanent right of ways to be

dedicated within the project area. In most locations work could be completed within the proposed 80' permanent right of way width. Additional temporary construction easements would be required especially at the lower portion of White Hill Road between Sta. 70 and Sta. 100 as shown on Figure 2.

<u>Estimated Costs</u>		Year*:
Preliminary Engineering:	\$1,770,000	2016
Right of Way:	\$2,060,000	2016
Construction:	\$8,990,000	2016
Contingency (20%)	\$3,560,000	2016
Total Cost:	\$16,380,000	2016

*Costs have not been inflated to a future year of construction at this time given the uncertainty regarding phasing and future project implementation.

Maintenance of Traffic During Construction

Specific maintenance of traffic limits and establishment of detours will be determined during future phases of project development and are dependent on specific phasing of construction. Local roadways could be utilized during short term closures.

During construction, traffic will be

- maintained by utilizing the existing or temporary pavement on North Dearborn and Whites Hill Roads.
- placed onto an official detour over Local routes can be used by local traffic, adding 5 to 20 minutes to a through trip.
- Delay to emergency and public services will be about 5 to 20 minutes using the detours.
- The cost to the public to use the detours will be \$120,000, assuming that 50% use the local detour, or 800 AADT, during a 30-day detour, and \$ 15.00 per hour user cost.

Mitigation Measures

The following project-specific mitigation measures are required.

- Woody revegetation will be placed in specific areas.
- "Do Not Mow or Spray" signs will be posted along the right of way.
- "Do Not Spray" signs will be posted along the right of way, since legume seed mixture will be used.
- Other Specific Mitigation Measures: Mitigation measures will be determined during future phases of project development.

Public Involvement

An extensive public involvement program has been undertaken by the OKI for the Bright I-74 Study. The Study included three public information meetings held at East Central High School in Saint Leon, Dearborn County, five advisory committee meetings, as well as hosting a study website (www.bright74.oki.org) with online surveys mirroring those provided at the public meetings as well as project documentation.

The Advisory Committee consists of Dearborn County OKI Board Members and other key stakeholders who represent 20 diverse and well-established governmental agencies, local businesses, emergency service providers and civic-based organizations in the area. Members represent large groups of people with whom they work and correspond regularly and from whom they receive feedback. The Advisory Committee members' broad reach and representation throughout the Study Area and region provides information and guidance as a working group to the OKI Bright 74 Study Team.

Advisory Committee responsibilities included the following:

- Provide study updates and disseminate information to community/organizational/agency members to encourage an exchange of information
- Share community/organization/agency members' questions, concerns and general feedback
- Assisting with public involvement and outreach efforts, as appropriate

Refer to the study *Public Involvement Plan* and *Public Comment Summary Reports* at www.Bright74.oki.org for additional information.

Several hundred residents attended the meetings and took the online surveys. The majority of residents did not feel that any new off alignment roadway connectors linking Bright with I-74 were needed. The majority of residents felt that maintenance to existing roadways and minimizing property and environmental impacts while preserving the rural quality of the area were the paramount needs. Based on this, the Study recommends enhanced maintenance to the existing roadways as a short-term priority with long-term reconstruction of North Dearborn and Whites Hill Road, as shown in the attached two maps, to meet the Study's purpose and need as funding becomes available. Specific impacts and costs associated with the reconstruction of the two roadways will be determined during future phases of project development.

No views or opinions other than those of the officials of the highway organizations and the affiliated workers have been expressed in this report.

- An opportunity for a public hearing will be offered through advertising in local newspapers. All opinions or comments received by the published deadline will be attached to this report.
- An opportunity for a public hearing will not be offered through advertising in local newspapers.
- A public hearing will be scheduled. All comments received at the public hearing will be attached to this report including their resolutions.
- A public hearing will not be scheduled.

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Attachments:

- Fish and Wildlife Meeting Report
- Field Check Report
- Public Hearing Transcript
- Public Comment Summary Report. The Public Involvement Plan and Public Comment Summary Reports for Phases One, Two and Three are available at Bright74.oki.org for additional information regarding the public involvement activities conducted during the study.
- Concept 1 – Component 2: North Dearborn Road and Concept 1 – Component 3: Whites Hill Road Improvement.