

Draft Purpose and Need Statement 6/16/2016

Prepared for
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Background

History

In 2006 the Ohio Kentucky Indiana Regional Council of Government's (OKI) 2030 Long Range Transportation Plan indentified a project (No. 502) to construct a new two lane connector from North Dearborn Road to Interstate 74 (I-74). The potential need for improved access between the Bright Area and I-74 was identified again in the 2012 OKI 2040 Regional Transportation Plan (No. 803). Without having a comprehensive planning recommendation, OKI included a project concept for a new corridor between State Line Road and I-74, with an estimated cost of \$54.6 million, as a transportation planning "place holder." Discussion of the need for a study to determine the identity of the future improvement began in 2014. To confirm the feasibility and need for the proposed project, OKI was asked by Dearborn County to initiate the Bright 74 Study to evaluate existing conditions and connectivity between the Bright Area and I-74. The Bright 74 Study will investigate options for improvements to existing roadways, potential new roadways, and/or a combination of both to improve safety, access and other travel needs between the Bright Area and I-74.

A new connector is currently not included in the Indiana Department of Transportation's Statewide Transportation Improvement Plan (STIP) or Dearborn County's Comprehensive Plan.

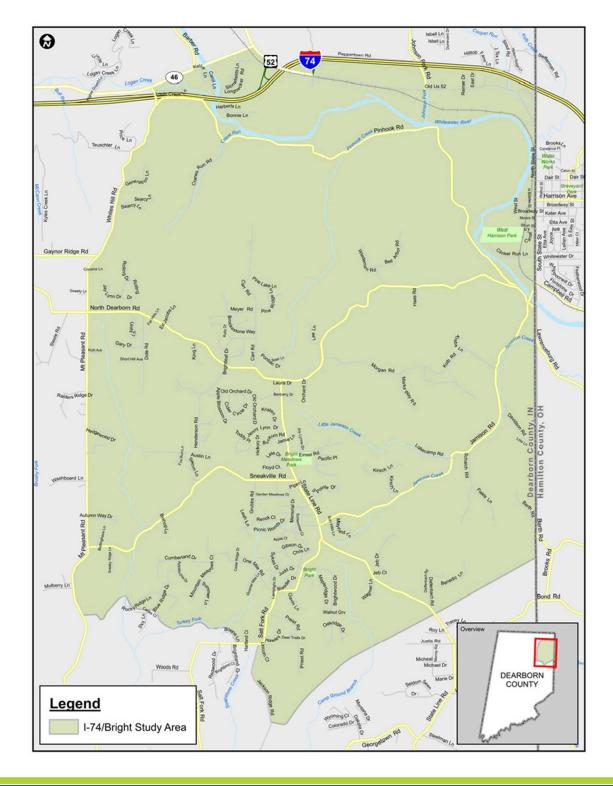
At this time there is no Federal, state, or local legislative mandate to proceed with a new connector.

Study Area

The study area is located in Harrison and Logan Townships in northeastern Dearborn County. Bright, Indiana is a census defined place but is not an incorporated municipality. The study area encompasses 19 square miles and is generally bounded by the Indiana/Ohio State Line to the east, Whites Hill Road to the west, I-74 to the north and State Line Road to the south (see Figure 1).



Study Area Map



The existing folded diamond interchange at I-74 Exit 169 (US 52-Harrison Brookville Road) is the closest interstate access point. From Bright, this interchange can be reached indirectly using North Dearborn Road, Whites Hill Road, SR 46 and US 52. Residents of the study area can also access I-74 via State Route 1 to the west, or at the New Haven Road, Dry Fork Road and Kilby Road interchanges in Hamilton County, Ohio to the east.

The topography of the study area is rolling, with State Line Road running north to south in the center of the corridor, following a ridge line that falls off to the east, west, and north. The Whitewater River runs along the north and east sides of the study area separating I-74 from Bright and the unincorporated areas to the south. State Line Road is the commercial spine of Bright. Connections to the east and west are provided by North Dearborn and Jamison roads. Remaining roads in the study area are generally local, low volume roadways serving residential developments.

Demographics

Bright is a largely residential community with a population of approximately 5,500 people and 2,000 households according to the 2013 American Community Survey. Bright functions as a commuter suburb for Dearborn County and the Cincinnati Metropolitan area. Total employment is approximately 600. Its population has remained virtually steady over the past decade while the number of households has increased approximately 10 percent. The study area has a largely homogeneous racial makeup with minorities comprising less than one percent of population. It also has a median household income that is among the highest in Dearborn County with two percent below the poverty line. Based on the OKI Travel Demand Model growth in population and employment in the study area is anticipated to be modest at approximately 20 percent over the period from 2010 and 2040.

A subarea travel demand model has been developed for the study. Based upon existing traffic count data and current year traffic forecasts from the Model, the majority of trips are internal to the study area. The majority of trips originating or terminating in the study area accessing I-74 are to and from the east using the existing interchanges in Hamilton County, Ohio. The estimated number of daily trips between the study area and the I-74 US 52-Harrison Brookville Road interchange is approximately 700.

The Dearborn County Comprehensive Plan has designated agricultural/green space and low density residential in as the predominant land uses within the study area. Few commercial and industrial facilities are currently located within the study area. Future land uses are generally planned consistent with existing conditions with the exception of Dearborn County's West Harrison Tax Increment Financing (TIF) District, located north of the Whitewater River along I-74 and the Brookville subdivision of the Indiana & Ohio Railway Company (IORY). At this time the TIF district is largely undeveloped, however two recent industrial development projects have been completed along Old US 52 in West Harrison. Future industrial development is planned in this area.

Modal Interrelationships

There are no fixed route transit services or dedicated bicycle facilities within the area. The IORY Brookville Subdivision runs generally parallel to Old US 52 in the northern portion of the study area and does not operate to Brookville at this time. There are no currently no industrial rail shippers on the IORY west of Whitewater Mill in West Harrison. The existing roadway network between North Dearborn Road and I-74 cannot easily accommodate dedicated bicycle or pedestrian facilities. US 52 within the study area is a designated bike route.

Purpose

Provide improved travel between the Bright area and Interstate 74 that meets the Indiana Department of Transportation's (INDOT) design criteria, reduces travel time, and enhances connectivity and traffic safety while preserving the rural quality.

Need

Existing Roadway Deficiencies

Existing Dearborn County maintained routes used to access the I-74 US 52-Harrison Brookville Road interchange from the Bright area are North Dearborn Road (CR 26) and Whites Hill Road (CR 203). These routes connect to state maintained SR 46 and US 52 and the interchange. The total distance from the Intersection of State Line Road and North Dearborn to the intersection of Old US 52 and I-74 eastbound ramps via these roadways is approximately 5.7 miles. Both roadways are functionally classified as Rural Major Collectors according to the latest INDOT functional classification map of Dearborn County. The posted speed limit is 45 mph on North Dearborn Road and 40 mph on Whites Hill Road. Several segments of these roadways do not satisfy current INDOT (rehabilitation, restoration, and resurfacing "3R") design criteria for grades, horizontal and vertical curvature, lane and shoulder width, as well as roadside INDOT conditions (see Design Manual Chapter 55 available http://www.in.gov/indot/design manual/files/Ch55 2013.pdf). There are several locations where the advisory speeds are lower than the posted speed limit due to horizontal or vertical geometry. Improvements should flatten steep grades and straighten curves.

The specified minimum width for a useable shoulder is three feet. In nearly all areas, the existing shoulders do not meet these criteria. Based on visual observations, trees, utility poles, mailboxes, or other items appear to be located within the specified Obstruction Free Zone for approximately 25 percent of the route. Guardrail appears to be substandard on the portion of White Hill Road between Searcy Lane and SR 46 (terminal section, height, offset and post spacing), and there is evidence of some impact damage at Pinhook Road. Roadside protection for the existing I-74 bridge piers over Whites Hill Road may also be needed

Approximately 35 percent of the North Dearborn Road between State Line Road and Whites Hill Road has deficient horizontal curvature. Approximately 30 present of Whites Hill Road between North Dearborn Road and SR 46 has deficient horizontal curvature and/or steep grades over 10 percent. The existing conditions generally do not allow for passing opportunities. Weather conditions and presence of slow or impassible vehicles can have a detrimental impact on travel time which can vary widely.

The state maintained routes generally meet current design criteria with the following exceptions:

- The existing bridge carrying SR 46 over the Whitewater River provides deficient shoulder width.
- The vertical profile of US 52 in the vicinity the I-74 westbound interchange ramps does provide intersection site distance for the current design speed.

Secondary Needs

Travel time

Overall travel time from the intersection of State Line Road and North Dearborn Road, via Whites Hill Road, SR 46 and US 52 to the existing I-74 US 52-Harrison Brookville Road Interchange including stop controlled intersections under normal conditions is approximately nine to 12 minutes based on travel demand model simulation and field driving trials.

Level of Service (Percent Time Following another Vehicle)

Based on existing traffic counts and travel demand forecasts there are no significant capacity or congestion problems within the study area based on the current volume to capacity ratios. Highway Capacity Software (HCS2000) analysis of North Dearborn Road, State Line Road and Jamison Road performed as part of the of the 2004 OKI Dearborn County Transportation Assessment resulted in a level of service (LOS) rating of E based on the percent time following another vehicles. It is anticipated that the existing roadway network linking the Bright Area to I-74 will continue to provide a substandard level of service based on the 2010 Highway Capacity Manual percent time following another vehicle. The substandard LOS is due to the limited passing sight distance resulting from the existing horizontal and vertical roadway geometry combined with density of access points. While not formally analyzed, steep grades on Whites Hill Road result in advisory speeds of 20 mph restricting travel time for following vehicles. It is anticipated that the existing roadway network linking the Bright Area to I-74 will continue to provide a substandard level of service based on the 2010 Highway Capacity Manual percent time following another vehicle due to the limited passing site distance resulting from the existing horizontal and vertical roadway geometry combined with density of access points.

Crash Rates

Crash data for the study area from 2009 to 2013 was used to estimate crash rates for all highway segment crashes on Whites Hill Road, North Dearborn Road, State Line Road, Jamison Road and SR 46. The overall rates are near or below the national averages of similar facilities. GIS mapping was used to identify abnormal accident trends or patterns. Some concentrations were noted along Jamison Road and US 52 in the vicinity of the I-74 west bound ramps. Run off the road crashes on Whites Hill Road and North Dearborn Road were located in areas of deficient horizontal curvature. A detailed analysis of individual accident reports will not be conducted during this study. Accidents on I-74 have not been evaluated given that mitigation of existing interstate operating conditions is not the focus of this study.

Other Goals/Objectives

Preserve Rural Character

Feedback received during public involvement activities, the most important goal of study area residents is to maintain the rural character area. Many residents have expressed concern about potential increases in traffic, truck volumes, noise and economic development pressures associated with improved connectivity to I-74. Minimize the property impacts associated with any transportation improvements.

Preserve and Protect Natural Resources and Hillsides

There are several streams, wetlands and ponds in the study area. The Whitewater River crosses west to east through the northern portion of the study area. Given the rolling terrain, and the rural nature of the study area, potential improvements to interstate connectivity could have result in significant impacts to waterways including a new crossing of the Whitewater River. Minimize the environmental impacts associated with any transportation improvements to the extent feasible.

Enhance Roadway Connectivity and Economic Vitality

Dearborn County has established the West Harrison TIF District north of Bright along Old US 52 and the Brookville subdivision of the IORY. At this time the TIF district is largely undeveloped, however two recent industrial development projects have been completed along Old US 52 in West Harrison. Future industrial development is planned in this area. There is currently no direct access from the Bright area to the TIF district. New or improved connectivity to the TIF District will enhance and sustain opportunities for economic development.