



Noblesville East- West Corridor

Alternatives Screening Memo

Introduction

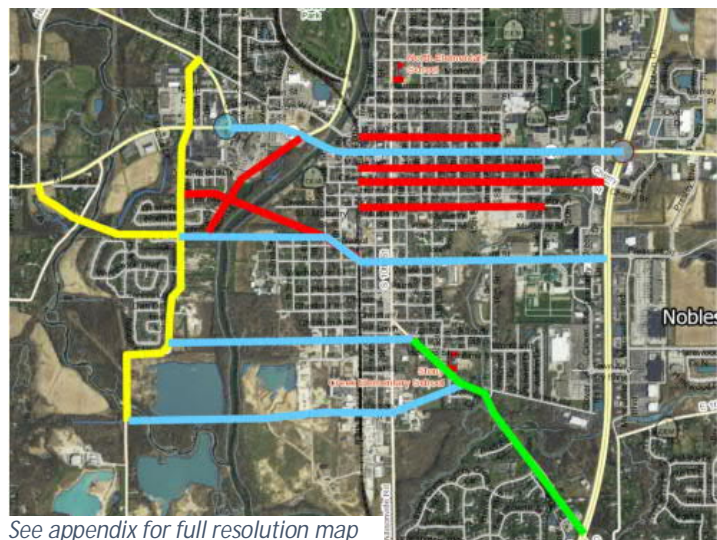
The City of Noblesville is proposing to advance a state-sponsored Environmental Assessment for an east to west corridor project through the city, from S.R. 37 to S.R. 32 across the White River. As the project anticipates receiving funding from the State of Indiana, environmental study for a reasonable range of alternatives is required by 329-IAC-5-1-4. The project may also be funded fully with local funding. If at a later date federal funding by the Federal Highway Administration (FHWA) is secured for the project, the environmental assessment will be re-visited in the context of National Environmental Policy Act (NEPA) guidelines. CHA Consulting, Inc., in partnership with American Structurepoint, Inc., is advancing this documentation on behalf of the City of Noblesville.

The purpose of this Alternatives Screening Memo is to present the Project's range of alternatives to be considered, referred to as corridors at this stage, discuss the results from the screening analysis, and identify the corridor recommended to be carried forward as the Preferred Alternative (see attached maps).

Previous studies

All corridors under consideration for the proposed project would begin at S.R. 37 and extend to the west, traveling over the White River and terminating at S.R. 32. This corridor has been the subject of study since the 1995 Noblesville Comprehensive Plan and Thoroughfare Plan. In 1999 Hamilton County studied various White River Bridge crossings. In 2008, an analysis of a Pleasant Street Bridge was conducted and in 2015 a feasibility study of the Pleasant Street Corridor was conducted (available upon request). In addition to these studies, consideration of the Metropolitan Planning Organization (MPO) Travel Demand Modeling, Traffic Impact Studies, historic traffic data, and other facility improvements have been undertaken by the city and the county. The city also considered input informally provided by the Southwest Quad Neighborhood Action Team.

East-west corridors considered to date include (shown to the right in red, blue, green, and yellow): 191st Street, 186th Street (Field Drive), Pleasant Street, Carbon Street, Irving Street, and 161st Street. Additional alternative corridors considered previously included: Cherry Street, Logan Street, Maple Street, Hannibal Street, and



See appendix for full resolution map

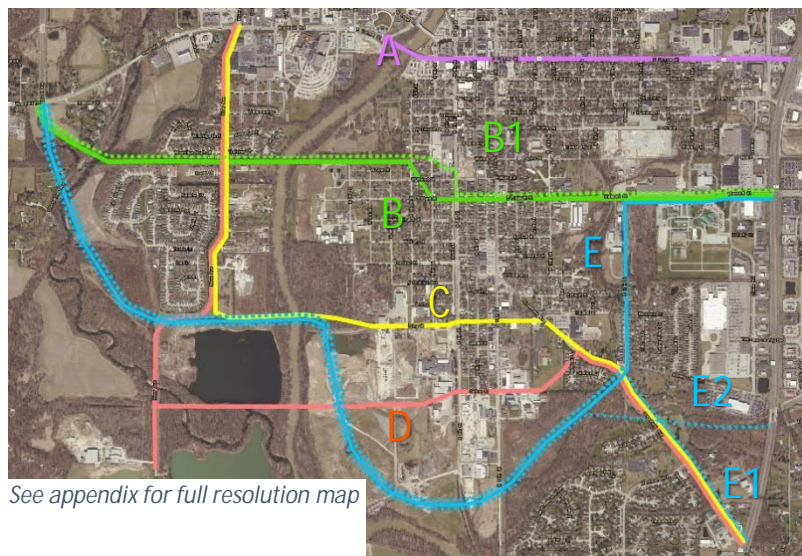
Division Street. Of the alternative corridors considered, the 186th Street/Field Drive extension and crossing was completed in 2003 and connects S.R. 37 in the east to S.R. 19 west of the White River. The 191st Street corridor was determined to have limited effect on traffic patterns within Noblesville and was not considered further. Due to constructability concerns with local gravel quarries and the limitation in connecting to S.R. 37, the 161st Street corridor was not considered further. Due to limitations in connecting east to S.R. 37 or in crossing west over the White River, Logan Street, Maple Street, Cherry Street, Division Street, and Hannibal Street were also eliminated from further consideration. The city determined that the following alternative corridors would move forward for further consideration; Conner Street, Pleasant Street, Irving Street, and Carbon Street.

More recently, alternative corridors were suggested by the Southwest (SW) Quad Action Team, a group representing the Noblesville Southwest Quad neighborhood. These corridors were added to the alternatives (Alternatives E, E1, and E2) under consideration and can be found described in greater detail below.

The east-west corridor project will meet S.R. 37 at-grade and is not associated with the S.R. 37 Improvement Project, as outlined in the SR 37 Mobility Study, led by Hamilton County and presented to the Indiana Department of Transportation (INDOT), Hamilton County, City of Fishers, and City of Noblesville. The S.R. 37 and Greenfield Avenue, Town and Country Boulevard, Pleasant Street, Cherry Street, and S.R. 32/S.R. 38 intersections were included in that study. Environmental impacts associated with the placement of an interchange at these locations have been documented under separate environmental planning documentation prepared for the S.R. 37 Improvement Project. The City of Noblesville is now considering the scope of the design for these intersections, which will be conducted separate from this project.

Considered Alternatives

The alternatives considered for the proposed project (shown below) can be found in full detail in Appendix B of this document. Each corridor is considered conceptual and alignments are presented for the purposes of preliminary impact comparison.



Corridor A – Conner Street

Corridor A would begin near the intersection of S.R. 37 and S.R. 32/Conner Street and would continue through to State Road 19, over the existing White River Bridge. This corridor would travel through downtown and two National Register listed districts, the Conner Street Historic District and Noblesville Commercial Historic District (see attached Historic Resources Map).

Corridor B – Pleasant Street

Corridor B would begin near the intersection of S.R. 37 and Pleasant Street. From the 10th Street and Pleasant Street intersection, the route would curve north to meet the former east-west Midland Trace railroad bed that crosses the White River between Vine Street and Mulberry Street at 5th Street. Before crossing west over the White River, this corridor traverses the National Register listed Plum Prairie Residential Historic District (see attached Historic Resources Map). Corridor B would then continue west of the White River on the same railroad bed, until crossing Little Cicero Creek, where it would veer northwest to meet S.R. 32 and Hague Road.

Corridor B1 – Pleasant Street

Corridor B1 would also begin near the intersection of SR 37 and Pleasant Street. The route would also follow Pleasant Street and curve north to meet the former east-west Midland Trace railroad bed. However, this corridor would attempt to travel around the National Register listed Plum Prairie Residential Historic District (see attached Historic Resources Map). Corridor B1 would then continue on the same path across White River as Corridor B, joining with SR 32 and Hague Road.

Corridor C – Irving Street

Corridor C would begin at the intersection of S.R. 37 and Greenfield Avenue and would continue along Greenfield Avenue, before veering west near Holland Street and Stony Creek Elementary School. This portion of the corridor would cross Stony Creek. Corridor C would travel west through existing commercial/industrial development to meet with the remnants of Irving Street, before crossing the White River. This industrial and commercial area is documented with multiple hazardous materials sites and landfills (see attached Hazardous Material Concerns Map). The corridor would then continue west of the White River to meet with River Road and follow it north to S.R. 32.

Corridor D – Carbon Street

Corridor D would begin at the intersection of S.R. 37 and Greenfield Avenue, sharing the same course as corridor C, though veering west near Overland Court. This portion of the corridor would also cross Stony Creek. Corridor D would then travel southwest through residential development, to meet the existing alignment of Carbon Street. From Carbon Street, the corridor would continue through an industrial and commercial area documented with multiple hazardous materials sites and landfills (see attached Hazardous Material Concerns Map). The corridor would continue west over the White River and between existing quarry pits and Little Cicero Creek, before eventually meeting with River Road. The corridor would then follow River Road north to S.R. 32.

Corridor E – SW Quad, 16th Street

As proposed by representatives of the SW Quad Action Team, Corridor E would begin at the intersection of S.R. 37 and Pleasant Street, follow 16th Street south to Stony Creek Road and Greenfield Avenue, crossing Stony Creek and heading southwest to 10th Street/Allisonville Road. Corridor E would then travel west and follow the eastern side of White River to cross the White River at the same location as Corridors C and D. Corridor E would follow the same path as Corridors C and D and diverge at River Road, crossing Cicero Creek, before continuing northwest to meet S.R. 32 and Hague Road.

Corridor E1 – SW Quad, Greenfield Avenue

Alternatively proposed by representatives of the SW Quad Action Team, Corridor E1 would begin at the intersection of S.R. 37 and Greenfield Avenue, would continue northwest along Greenfield Avenue and continue southwest at the intersection with 16th Street. Corridor E1 would then travel across 10th Street and loop north along the east bank of the White River, where it would meet the alignments of Corridors C, D, and E, to cross the White River. Corridor E1 would then follow the same alignment as E to meet up with S.R. 32 and Hague Road.

Corridor E2 – SW Quad, 166th Street/New Terrain

Alternatively proposed by representatives of the SW Quad Action Team, Corridor E2 would begin at the intersection of S.R. 37 and the approximate location of 166th Street, would then continue west along the general path of Stony Creek, until reaching a shared alignment with E. Corridor E2 would continue west following the same alignment as E, past 10th Street and across the White River at the same location as Corridors C, D, E, and E1. E2 would also meet with S.R. 32 and Hague Road at the same location as E and E1.

Screening Approach

To ensure a full range of reasonable alternatives were considered, the screening process was developed to evaluate the full suite of impacts for each alternative equally. Since the alternatives were established at a conceptual level, general alignments were drawn based on remotely gathered information (mapped features that have not necessarily been confirmed on the ground) available at the time. For the sake of equal comparison amongst alternatives, all corridors were considered to have a 120-foot-wide conceptual right-of-way impact. The conceptual cross-section included up to four 11-foot travel lanes, with a 12-foot median, curb, and gutter, as well as pedestrian facilities, which would resemble a boulevard style roadway. This would not represent the final alignment, right-of-way width, cross-section width, number of lanes, etc. for the roadway. The outcome of this alternatives screening will assist in determining the Preferred Alternative.

In addition to environmental features, evaluation criteria included construction costs, engineering feasibility, constructability (or the level of construction complexity), and conceptual level right-of-way relocation determinations. Environmental features were each considered by the level of impact to the resource, generally in acreage disturbance for the natural environment and number of impacts for the human environment. The features considered in this screening are discussed

in greater detail below. Ultimately, the screening process was used to identify the reasonable alternative that satisfied the Project's purpose and need, while also presenting the least environmentally impactful alternative.

Purpose and Need

The City of Noblesville has seen tremendous growth, both residential and commercial, over the past three decades and is the 14th largest community in Indiana (based on 2010 data). U.S. Census data reports that Noblesville had an approximate population of 12,250 in 1980, 17,650 in 1990, 51,970 in 2010, and 63,133 in 2018.

Noblesville East-West Corridor Project - Des. No. tbd Alternatives Screening Matrix <i>estimated within 120 foot wide corridor, 60 feet either side</i>									
Criteria	Alternatives								
	No Build	A Conner St.	B Pleasant St.	B (1) Pleasant St.	C Irving St.	D Carbon St.	E 16th St.	E (1) Greenfield Ave.	E (2) 166th St.
PURPOSE AND NEED CONSIDERATIONS									
Does alternative significantly reduce the volume of traffic along the SR 32/SR 38 corridor through downtown?	NO (+30%)	NO (0%)	YES (~24%)	YES (~24%)	NO (~10%)	NO (~8%)	NO (~10%)	NO (~10%)	NO (~10%)

There are currently only two White River crossings in downtown Noblesville, one at S.R. 32/Conner Street and the other at Logan Street. The S.R. 32/Conner Street river crossing provides two through lanes in each direction and the Logan Street river crossing provides one through lane in each direction. This limits the mobility within the Noblesville transportation network. This also increases congestion within the S.R. 32/Conner Street corridor through downtown Noblesville. The existing volume of Average Daily Traffic (ADT) along S.R. 32/Conner Street is 15,000 vehicles per day and is anticipated to increase to as much as 19,000 vehicles per day in the design year 2045.

The project is needed due to limited mobility through downtown Noblesville on S.R. 32/Conner Street, as outlined in the 2009 Noblesville Thoroughfare Plan and evidenced by increasing traffic volumes. The purpose of the project is to provide a significant volume reduction of S.R. 32 downtown Noblesville traffic, defined as 20% reduction. A 20% reduction in traffic volume results in 2045 traffic volumes on S.R. 32/Conner Street that are no greater than existing (year 2025) traffic volumes.

The "No Build" alternative would utilize the existing road network and would not include the expenditure of capital funds or improvements. This would not address the purpose of the project, which is to provide a significant traffic volume reduction (20% or greater) in downtown Noblesville. Additionally, Conner Street (Alternative A) conceptual design would not provide a significant reduction in downtown traffic volume. The Conner Street Alternative did not meet the project purpose and need and therefore was not considered further. Although the "No Build" Alternative did not meet the project purpose and need, the alternative will act as a benchmark to compare the preferred alternative, going forward.

Evaluation of Impacts

The evaluation described in this memo is made possible by utilizing the most recent geographic information systems (GIS) data available from the Indiana Geographic Information Office (GIO), Indiana Geographic Information Council (IGIC), IndianaMap, Hamilton County GIS, and the City of Noblesville GIS. GIS is a collection of electronic tools used to build and maintain electronic maps and the associated databases of information tied to those maps. The GIS data obtained for this screening provided an equal consideration of environmental impacts across the alternative corridors considered. All GIS data collected at the time of this memo was considered to be complete and to be the best available data at that time. This data is made publicly available and can be obtained from the Indiana GIO, IndianaMap, or local GIS offices in Hamilton County or Noblesville.

The GIS information provided a representative overview of impacts to resources within the considered corridors. An overview of the impacts is provided below in the [Summary of Potential Impacts](#), which highlights the resource impacts deemed to have the most potential for determining the least environmentally impactful alternative and thus choosing the Preferred Alternative. The full Alternatives Screening Matrix can be found in Appendix A of this document.

Summary of Potential Impacts

Ecology

Waterways

A review of the United States Geological Society (USGS) National Hydrography Dataset (NHD) provided estimates of impacts to waterways. The White River, Cicero Creek, Stony Creek, Elwood-Wilson Drain and a few unnamed tributaries were identified within the path of the proposed alternatives, generally flowing from north to south. Stony Creek and tributaries enter the review area from the east-northeast and flow to the White River south of the E Alternatives. Cicero Creek and tributaries flow south to join the White River south of the D Alternative. Elwood-Wilson Drain flows south from the general vicinity of the old Firestone facility, north of the B Alternatives. The White River flows from north to south through Noblesville and would be impacted by any of the alternatives considered. Cicero Creek would be impacted by the B and E Alternatives, and Stony Creek would be impacted by the C, D, and E Alternatives. A few alternatives considered would impact multiple waterways or a single waterway in multiple locations. The E Alternatives would

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ENVIRONMENTAL CONSIDERATIONS									
Forest Impacts (net loss in acres)			12	13	8	12	24	25	27
Mineral/Geological Resource Impacts (total acres)			0	0	6	11	11	11	11
Potential Hazardous Material Sites			1	1	5	9	4	6	4
Waterway Crossings			3	3	3	5	5	5	6
Open Water Resources Impacted			0	0	0	1	2	2	2
Floodplains (total acres)			7	7	8	18	29	29	35
Wetland (NWI) Impacts (total acres)			0.4	0.4	1.5	5	6	6	10

impact Cicero Creek and an UNT, whereas; E and E 1 would impact Stony Creek in two locations as well, E2 would impact Stony Creek in three locations. Alternative D would impact Stony Creek in two locations, as well as Cicero Creek in two locations. The B Alternatives would impact Elwood-Wilson Drain in one location and Cicero Creek in one location. Alternative A would impact only the White River.

Open Water

The USGS NHD was also used to provide estimates of impacts to open water, though aerial imagery supplemented this review. The NHD for open water was noted to conflict with recent (2018) aerial imagery and in those cases, imagery was considered the most current data. Previous quarries, now ponds, occupy the White River floodplain, south of the C Alternative. Additionally, small storm water detention basins were identified throughout Noblesville. Alternatives C and D would have an edge impact on the open water quarries located adjacent to the White River between the alternatives. The B Alternatives would impact a small detention pond near the Hamilton County Fairgrounds. The E Alternatives would impact an open water pond near SR 32 and Hague Road, as well as an open watery quarry between Alternatives C and D, east of the White River.

Floodplains

The Indiana Department of Natural Resources (DNR) digital Flood Rate Insurance Maps (FIRM) and Flood Hazard Zones were used to provide impact estimates to floodplains. Floodplain impacts are encountered by all of the alternatives considered. As with the White River, its floodplain is impacted by all of the alternatives considered. The floodplains of the remaining waterways are impacted in proportion to the waterway impacts listed above, with a few notable deviations. Alternatives A, B, B1, C and D impact the floodplains by crossing or transecting them. Of those that transect the floodplain, the B Alternatives impact the floodplain the least by utilizing the existing railroad bed from the former Midland-Trace railroad, which is situated above the regulatory flood elevation of the White River. The E Alternatives propose impacting the floodplain of Cicero Creek, the White River, and particularly Stony Creek (through the E2 Alternative) by longitudinal or lengthwise impact. The impacts considered here are for physical occupation of the floodplain (in acreage), however, hydraulic impacts from longitudinal impacts in a floodplain typically amplify the impact, as flood storage and conveyance is reduced or eliminated entirely. Accounting for indirect impact to floodplains requires extensive hydraulic modeling and is not prudent for comparison of all alternatives. Hydraulic engineering is required for the Preferred Alternative to obtain the necessary permits from the Indiana DNR Division of Water.

Forests

The 2017 Hamilton County aerial imagery was used to provide impact estimates to forests, which were defined as contiguous wooded area. All alternatives considered were determined to impact forests, much of which are located in the undeveloped floodplain. The greatest forest impacts were determined to be caused by the E Alternatives, which rely on development of forested floodplain for each general alignment. The A, B, B1, and C Alternatives impacts result from narrow riparian forest crossings over the White River. Alternative A would require the least forest impact, due to the greater degree of development along the corridor. The B Alternatives primarily impact

a thin, linear forest that now occupies the former Midland-Trace railroad bed. Multiple crossings over the forested floodplain of the White River and Cicero Creek account for forest impacts for Alternative D. The C, D, and E Alternatives impact forests by bisecting larger, contiguous forests.

Wetlands

The U.S. Fish and Wildlife Service (USFWS) Nationwide Wetland Inventory (NWI) map was used to determine the impacts of the alternatives on wetlands. The methodology for mapping the NWI allows for a relative comparison of the alternatives, however, further field investigation will be conducted for the route of the Preferred Alternative to verify features on the ground. The majority of the wetlands identified were the palustrine forested category of wetland commonly associated with riparian and floodplain areas. A few lacustrine wetlands were mapped where open water features and/or quarries exist. Wetlands are encountered by all of the alternatives considered, though impacts from the A and B Alternatives are substantially lower, due to the greater degree of development present along these corridors. Although Alternative D is transecting the floodplain, the impacts are substantial, due to the width of the floodplain at the confluence of Cicero Creek and the White River. Impacts are greatest from the E Alternatives, in particular the E2 Alternative, which follows undeveloped floodplain property for the majority of its path.

Mineral and Geological Resources

Data accessed from the IndianaMap regarding geological resources, mining and mineral sites, and petroleum wells past and present were used to determine impacts to geologic resources. In particular, the A and B Alternatives do not include impacts to these resources. Impacts to geological and mineral resources are most pronounced in the southern alternatives (C, D, E, E1, and E2). Due to the history of sand/gravel mining in the White River floodplain in this southern region of the City, additional engineering feasibility assessments would be required to provide specific impact evaluation. Impacts are considered on the number of known features encountered.

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ENVIRONMENTAL CONSIDERATIONS									
Mineral/Geological Resource Impacts (total acres)			0	0	6	11	11	11	11
Potential Hazardous Material Sites			1	1	5	9	4	6	4

Hazardous Materials/ Site Assessment

Hazardous Materials and Industrial Site regulatory records were queried through the GIS database provided by the Indiana GIO. During agency coordination, the Hamilton County Surveyor made the project team aware of the mapped records of landfills in the investigation area of the alternative corridors. Records in the GIS were then researched in the Indiana Department of Environmental Management (IDEM) Virtual File Cabinet (VFC) to determine whether each facility/site/property presented a "red flag" for the alternative corridors considered. These

records represent regulatory records, known releases of contaminants, document a legacy use of regulated chemicals/materials, and provide context to whether a site may require additional environmental investigation. The data used in this portion of the screening is limited to the records available at the time of the screen. Unknown hazardous sites or sites with unknown release of contaminants are not considered.

Records in the IDEM VFC reflect the industrial legacy of the 8th and 10th Street corridor, as well as the Firestone Industrial Products Company facility on Pleasant Street. Contaminate release on Pleasant Street is well studied, remediation has been conducted, and impacts are well known and low. Alternative C encounters the Indiana Ductile castings facility on the northern property boundary. Investigation of VFC records indicate that the site has a legacy of volatile organic compounds ("VOCs"), polycyclic aromatic hydrocarbons ("PAHs"), and metals. Further information can be found in the Environmental Restrictive Covenant (ERC) recorded on the property on June 12th, 2015. According to VFC records, there is also a private landfill on site on the western boundary of the property. Alternative D would also potentially encounter this site, as well as encounter two historic landfills, Staton Landfill and Noblesville Castings, on the eastern bank of the White River. The E Alternatives would require construction of their shared alignment within the boundary of the Staton Landfill. Hazardous Materials concerns in these southern corridor alternatives would require special design considerations to ensure a stable roadbed, as well as exposure precautions for construction worker safety during excavation and construction within these sites.

Historic Resources (above and below-ground)

For the purposes of the state environmental planning process, only those above-ground and below-ground historic resources listed on the National Register of Historic Places (NRHP or National Register) were considered. This information was provided by a Qualified Professional Historian, using the Indiana Historic Buildings, Bridges, and Cemeteries Map and State Historic Architectural and Archaeological Research Database (SHAARD), provided by the IDNR, Department of Historic Preservation and Archaeology (DHPA). Only above ground resources are made publicly available in the SHAARD GIS, per state law. These features were determined through an informal assessment of previously identified resources in or adjacent to the considered alternatives. These results are preliminary for the purposes of relative comparison of the considered alternatives. A ground survey will be conducted to confirm these findings during the development of the Preferred Alternative.

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ENVIRONMENTAL CONSIDERATIONS									
Listed Historic Properties/Districts Affected		1	0	0	0	0	0	0	0
Listed Archaeological Sites Affected		0	0	0	0	0	0	0	0
ENGINEERING CONSIDERATIONS									

These preliminary findings did not identify listed historic resources (below or above-ground) for the southern alternatives, including the C, D, and E Alternatives. Alternative A would affect the

Conner Street Historic District and the Noblesville Commercial Historic District. Alternative B would affect the Plum Prairie Residential Historic District. Alternative B1 was developed in an effort to minimize or avoid effect to the Plum Prairie Residential Historic District.

Community Impacts

Property Acquisition/Relocations

For the preliminary purposes of alternatives screening, land parcel data available on IndianaMap was examined in context of the conceptual alternatives alignments to determine potential residential and/or business relocations required. Individual level property acquisition estimates were not made. The results from this analysis follow the general divide between alternatives considered within existing development and those considered outside of development. The total estimated number of relocations required for the B Alternatives was higher than those of

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ENVIRONMENTAL CONSIDERATIONS									
Right-of-Way (combined acres)			29	30	26	34	47	43	45
Business Relocations			8	8	7	8	5	0	0
Homes/Apartment Unit Relocations			68	46	20	21	30	5	2
Environmental Justice Populations			2	2	3	3	3	3	3

Alternative C or D. The E1 and E2 Alternatives had the least anticipated relocation impacts. In an effort to avoid or minimize impacts to the Plum Prairie residential neighborhood (also known as Southwest Quad), the B1 Alternative reduced anticipated relocation impacts. Anticipated business relocation impacts for the B, C, and D Alternatives were similar, while E1 and E2 did not result in any anticipated impacts.

Environmental Justice

American Community Survey data for the year 2017 was examined for demographic insight regarding minority or low-income populations within the City of Noblesville. These Environmental Justice (EJ) populations are identified based on their relative representation within the overall reference community (Community of Comparison). An EJ population of concern exists if it comprises more than 50% of the Affected Community (AC) population or 125% of the COC.

Five Affected Communities (AC) were identified as Environmental Justice populations of concern (Census Tracts 1105.06, 1105.08, 1105.09, 1106, and 1107). Together these tracts encompass the entire area considered for the East-West corridor and some portion of the corridor for each alternative exists within one or more of these Affected Communities. Therefore, impacts to an EJ population from the project were considered comparable across all alternatives. Efforts have been made to ensure full and fair involvement from these communities, which will continue through the selection of the Preferred Alternative.

Engineering Considerations

Where statewide geographic data was not available, such as in the case of engineering feasibility, constructability, and cost, American Structurepoint, Inc. provided conceptual evaluations of the alternative corridors. Corridor cost was determined using estimate of cost for major elements of construction, such as earthwork, pavement, bridges, or other structures. All items were equally considered in context of the 120-foot-wide conceptual corridor noted above in Screening Approach. Each corridor was considered to be likely feasible to engineer, though consideration of constructability (or construction complexity) varied widely. Constructability incorporates the ease and efficiency with which a facility is built, taking into account the economics, schedule and budget of a project. To account for uncertainties in design, constructability was expressed conceptually as low, medium, or high.

A number of uncertainties exist in this high-level engineering consideration of conceptual corridors, though all corridors were considered equally across the same major elements. Further geotechnical analysis of the underground condition or hydraulic modeling for flood water storage and conveyance would be necessary to provide additional detail to these considerations.

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ENVIRONMENTAL CONSIDERATIONS									
Mineral/Geological Resource Impacts (total acres)			0	0	6	11	11	11	11
Potential Hazardous Material Sites			1	1	5	9	4	6	4
Wellhead Protection Areas/Wells Affected			0	0	3	1	6	6	6
ENGINEERING CONSIDERATIONS									
Constructability (High, Medium or Low)			High	High	Medium	Low	Low	Low	Low
Estimated Construction Cost (2023) (Million \$)			58	59	66	97	102	97	141
Length (total miles)			2.48	2.53	2.88	3.69	3.93	3.47	3.27
New Alignment (total miles)			1.45	1.42	1.10	1.28	2.93	2.89	3.27
Traffic congestion change (+/-) along SR 32/38 downtown			-24%	-24%	-10%	-8%	-10%	-10%	-10%

Constructability is highest (least complex) for the B Alternatives and lowest (most complex) for the E Alternatives. Given the complexity of construction for the E Alternatives, they were also determined to be the costliest. Given the length of the D and E Alternatives within the floodplain, these alternatives were noted as needing additional or complex hydraulic modeling to ensure that indirect flooding would not result from constructing these alternatives. The need for additional geotechnical study was also noted for the C, D, and E alternatives, given the history of sand/gravel mining, presence of active quarries, noted hazardous materials sites, and historic landfills. Additionally, existing and planned wellheads in or adjacent to the C, D, and E Alternatives were considered as utility conflicts that would require careful coordination. Therefore, the B Alternatives were determined to be the least costly and most feasible in terms of engineering effort.

Traffic analysis was also conducted to compare the change in traffic volumes on SR 32/ Conner Street through downtown Noblesville, due to the construction of each alternative corridor. The baseline for traffic volume levels were established by the existing collected downtown traffic

volumes on SR 32/Conner Street. Each alternative was input into the traffic modeling software and the resulting change in downtown volumes were noted. These figures are expressed in the screening matrix as a percentage change for comparison. The purpose of this project is to provide a significant reduction of traffic volumes, defined as 20% or greater, which was only met by the B Alternatives.

Agency Input

State, federal, and local agencies were contacted during the early coordination stage of project development on April 20, 2020, followed by an agency meeting on May 21, 2020. The agencies were provided project history, the project purpose and need, the eight currently considered alternatives, as well as an initial Alternatives Screening Matrix and maps of the resources featured in the matrix. Of the 23 agencies contacted, 11 responded to early coordination. Agency feedback was generally neutral and there were no specific objections to the alternatives presented.

The Natural Resources Conservation Service (NRCS) responded that the B and E Alternatives would cause a conversion of prime farmland. The USFWS responded generally that the limited forest and wetland resources of Hamilton County would be further degraded or fragmented by an alternative utilizing new roadway. Therefore, the USFWS generally recommended that the Preferred Alternative should have the fewest impacts by avoiding disturbing or bisecting these resources. The IDNR, Division of Fish and Wildlife responded during the agency meeting and again formally in response to early coordination that the B1 Alternative was the least environmentally impactful and therefore their recommended alternative.

Community Feedback

The community was provided opportunity to view the considered alternatives and provide feedback through the Community Advisory Committee (CAC) meeting held on July 15, 2020 and the Public Information Meeting held on July 29, 2020. The public has been afforded the opportunity to provide comment, beginning with the July 15, 2020 CAC meeting through August 12, 2020, two weeks after the Public Information Meeting. One additional public comment was received September 4, 2020. There were 14 attendees at the Public Information Meeting and 17 members (and 5 observers) attended the Community Advisory Committee Meeting. Three additional requests for project information were received in response to the Public Information Meeting and those individuals received the same information handouts as attendees.

Based on formal responses from the CAC and public meeting, the community generally agrees with the project need, which is unacceptable congestion caused by high traffic volumes experienced on SR 32/Conner Street corridor in downtown Noblesville. These traffic volumes are particularly pronounced during morning and evening rush hour. However, the responses from the community differed based on the perception of the source of the high traffic volumes. Many supported an additional east-west corridor situated within proximity to downtown, which would be available for the high volumes of primarily local traffic within the Noblesville Community. Others envisioned the construction of a bypass to shift the high traffic volumes, perceived as primarily commuter and non-local traffic, to the south away from downtown.

Three CAC members, a Southwest Quad resident, a Dove's Court property owner, and the Chamber of Commerce, expressed their support for the B1 Alternative, as Pleasant Street has been discussed locally for many years, addresses the project need, provides the greatest benefit to traffic operations within the City, and maintains connection with downtown businesses. Two CAC members, the Southwest Quad Action Team and the Noblesville Preservation Alliance, expressed their support for the D or E Alternatives (or a hybrid thereof). These groups expressed concern with the effect an east-west arterial roadway would have on Southwest Quad Neighborhood cohesion and expressed opposition to relocations and existing neighborhood impacts.

There were four formal comments received from the community during the two-week comment period that followed the July 29, 2020 Public Information Meeting. Respondents expressed concern with character of the proposed traffic (speed, amount, volume, type, and associated safety), indirect neighborhood impacts, and associated residential right-of-way acquisitions and/or relocations. Others expressed concern with traffic engineering model, the origin of the traffic currently causing the congestion, and suggested alternative travel corridors that would not meet this project's purpose. These respondents expressed support of the C, D, and/or E Alternatives. One additional response was received after the official comment period outlining concerns with the depressed condition of the neighborhood, questioning the process for listing the neighborhood as historic, and supporting the B Alternative as an opportunity to improve the Southwest Quad neighborhood, while maintaining connection to downtown.

Neighborhood impacts and impacts from the acquisition of right-of-way are similar across the considered alternatives, as the same conceptual cross-section and 120-foot-wide corridor were used for all alternatives compared. The speed, volume, type, and safety of traffic for any one of the alternatives would be that of a local arterial roadway. The maximum conceptual cross-section included up to four 11-foot travel lanes, with a 12-foot median, curb, and gutter, as well as pedestrian facilities, which would resemble a boulevard style roadway. The specific elements of the roadway will be designed for the Preferred Alternative. These elements will be determined based on engineering, traffic, safety, and community input on local context sensitive solutions to ensure the project meets the purpose and need, while fitting into the context of the surrounding community.

The traffic model completed for this project utilized traffic volume counts and anonymized Bluetooth data to determine origin-destination information within the project study area. The traffic model was developed and certified by a professional engineer with training and experience in the field of traffic and transportation engineering and is consistent with industry standards for this type of analysis. Though some portion of the congestion experienced on SR 32/Conner Street is due to non-local or thru traffic, a full regional scale study would be required to extract this level of detail. A full regional traffic model is not prudent in addressing the project need, which is high traffic volumes in downtown Noblesville. Though a bypass would provide an alternative east-west corridor, it would not provide a significant reduction of downtown Conner Street traffic volumes. Traffic modeling demonstrates that the ability to reduce traffic volumes along SR 32/Conner Street diminishes as a corridor is placed further away from downtown. This rationale was discussed at the Community Advisory Committee meeting and shared with attendees of the Public Information Meeting.

Selection of Preferred Alternative

The screening of alternatives for impacts to the human and natural environment did not result in an alternative with the fewest impacts across every category of impact. The impacts encountered by the alternatives generally split between corridors considered in existing development, which minimize natural environment impacts, and undeveloped floodplain to the south, which minimize impacts to the human environment. Impacts to the natural environment to the south also coincided with engineering challenges regarding hydraulic and geotechnical feasibility of design and construction and whether extensive costs were a prudent use of funds.

Early consideration of congestion reduction from potential Alternative A designs resulted in no appreciable change in traffic volumes. This alternative would not meet the project purpose and environmental impacts were not considered further. Environmental impacts from the C, D, and E Alternatives were greater than those of the B Alternatives, with the E Alternatives having the greatest impact. The B alternatives resulted in the least overall impact. This is attributed to the use of existing alignment, particularly the use of the former Midland-Trace railroad bed.

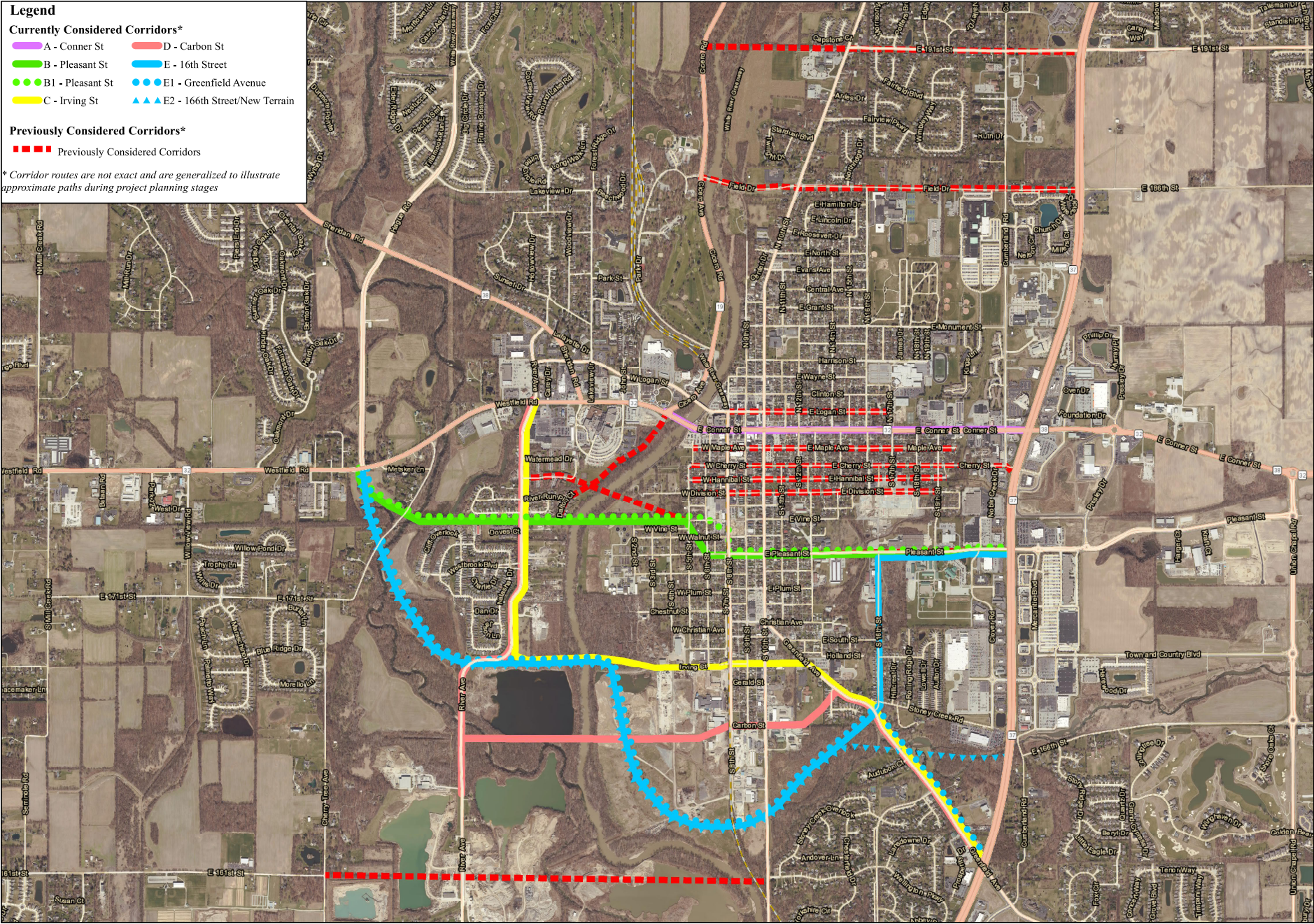
The C, D, and E Alternatives did provide congestion relief; however, they did not meet the project purpose of providing a significant reduction in traffic volumes, defined as 20%. A 20% reduction in traffic volume results in 2045 traffic volumes on S.R. 32/Conner Street that are no greater than existing (year 2025) traffic volumes. This was determined to be the most prudent metric for assessing whether an alternative could accomplish significant traffic reduction.



On the whole, the B Alternatives best satisfied the project purpose, by providing a significant congestion reduction. The B Alternatives also utilized existing development to minimize environmental impacts and avoid complex and costly engineering and construction. The B1 Alternative provided further reduction of impacts by minimizing effect on the Plum Prairie Residential Historic District, therefore, it is recommended as the Preferred Alternative.

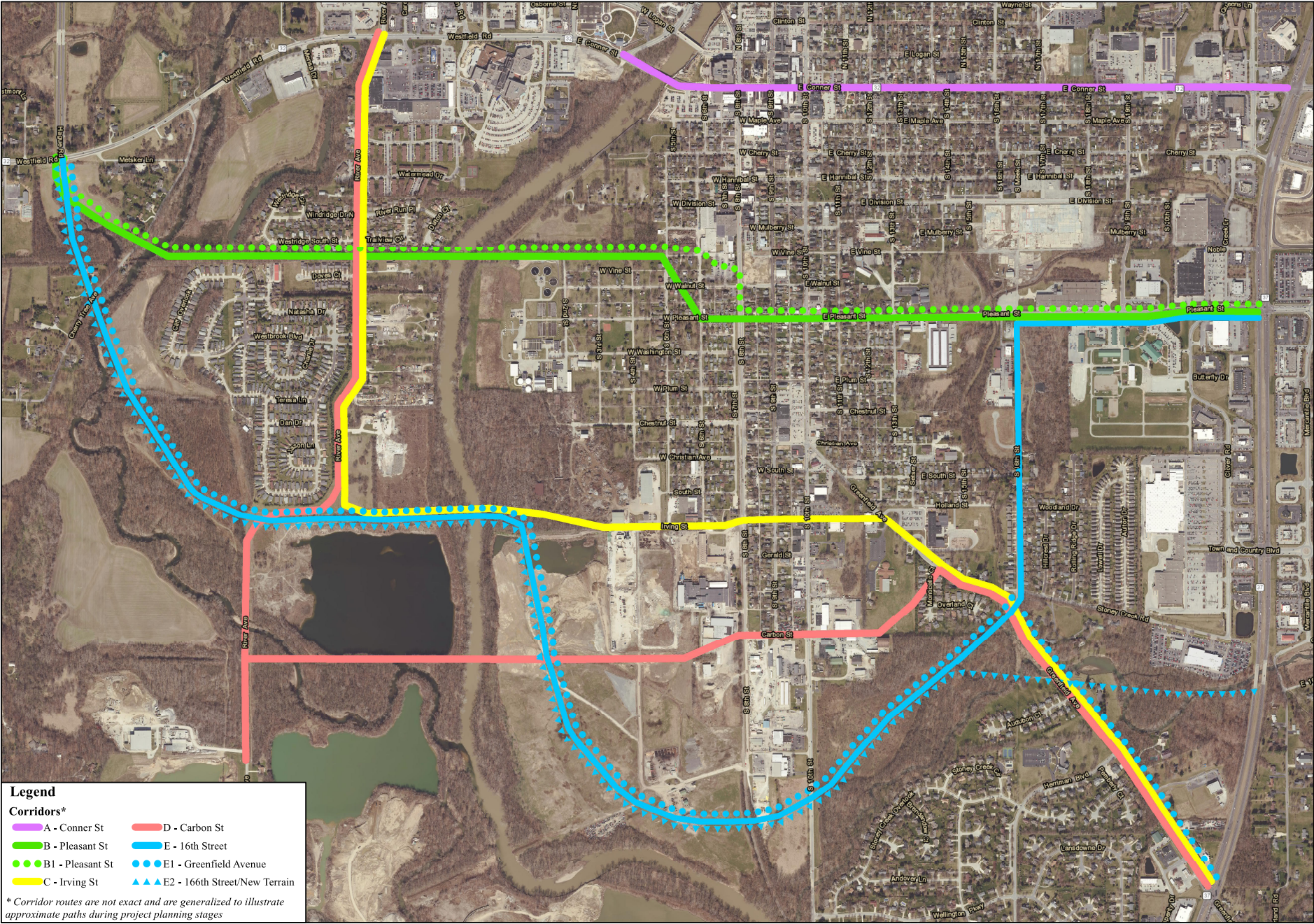
Attachments

- A. Alternatives Screening Matrix
- B. Alternatives Impact Mapping

Noblesville East-West Corridor Project - Des. No. tbd Alternatives Screening Matrix <i>estimated within 120 foot wide corridor, 60 feet either side</i>									
Criteria	Alternatives								
	No Build	A Conner St.	B Pleasant St.	B (1) Pleasant St.	C Irving St.	D Carbon St.	E 16th St.	E (1) Greenfield Ave.	E (2) 166th St.
PURPOSE AND NEED CONSIDERATIONS									
Does alternative significantly reduce the volume of traffic along the SR 32/Conner Street corridor through downtown?	NO (+30%)	NO (0%)	YES (-24%)	YES (-24%)	NO (-10%)	NO (-8%)	NO (-10%)	NO (-10%)	NO (-10%)
ENVIRONMENTAL CONSIDERATIONS									
Right-of-Way (combined acres)			29	30	26	34	47	43	45
Business Relocations			8	8	7	8	5	0	0
Homes/Apartment Unit Relocations			68	46	20	21	30	5	2
Farmland Impacted (total acres)			2	2	0	0	1	1	1
Prime Farmland (total acres)			2	2	0	0	1	1	1
Forest Impacts (net loss in acres)			12	13	8	12	24	25	27
Mineral/Geological Resource Impacts (total acres)			0	0	6	11	11	11	11
Potential Hazardous Material Sites			1	1	5	9	4	6	4
Waterway Crossings			3	3	3	5	5	5	6
Open Water Resources Impacted			0	0	0	1	2	2	2
Floodplains (total acres)			7	7	8	18	29	29	35
Wetland (NWI) Impacts (total acres)			0.4	0.4	1.5	5	6	6	10
Listed Historic Properties/Districts Affected			1	0	0	0	0	0	0
Listed Archaeological Sites Affected			0	0	0	0	0	0	0
Environmental Justice Populations			2	2	3	3	3	3	3
Wellhead Protection Areas/Wells Affected			0	0	3	1	6	6	6
ENGINEERING CONSIDERATIONS									
Constructability (High, Medium or Low)			High	High	Medium	Low	Low	Low	Low
Estimated Construction Cost (2023) (Million \$)			58	59	66	97	102	97	141
Length (total miles)			2.48	2.53	2.88	3.69	3.93	3.47	3.27
New Alignment (total miles)			1.45	1.42	1.10	1.28	2.93	2.89	3.27
Traffic volume change (+/-) along SR 32/Conner Street downtown			-24%	-24%	-10%	-8%	-10%	-10%	-10%



		
 design/construction solutions		
Considered Corridors Map		
East-West Corridor Project Noblesville, Hamilton County, Indiana		
DES No TBD	CHA Project No 59473	Image Courtesy of the IndianaMap Photo Date: 2017
Scale 1" = 900'		

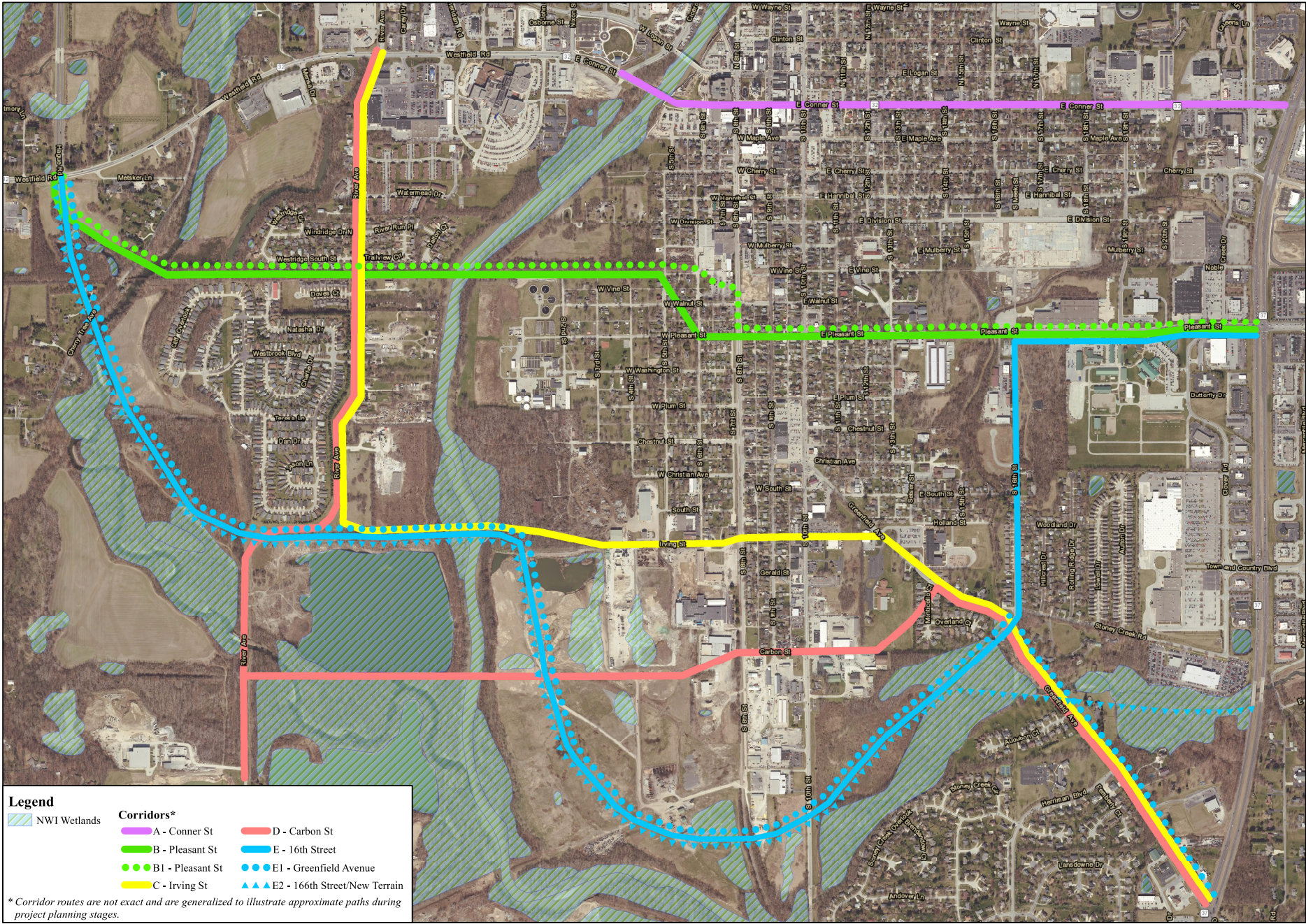






Aerial Location Map

East-West Corridor Project
Noblesville, Hamilton County, Indiana

CHA Project No 059473	DES No TBD
Scale 1" = 900'	Image Courtesy of the IndianaMap Photo Date: 2017

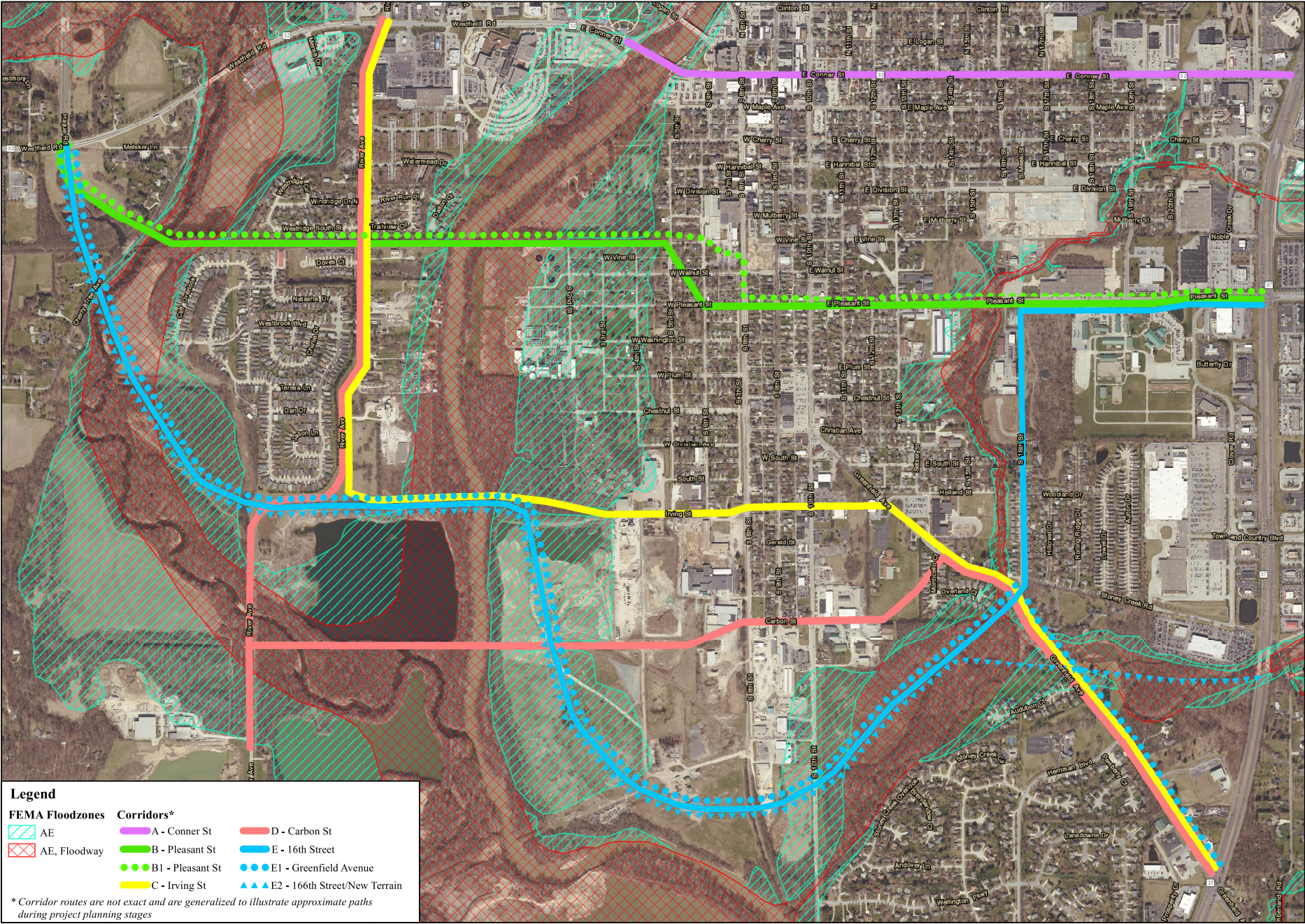






NWI Wetlands Map

East-West Corridor Project
Noblesville, Hamilton County, Indiana

CHA Project No 059473	DES No TBD
Scale 1" = 860'	Image Courtesy of USGS and of the IndianaMap Earthstar Geographics S/O © 2014 Nokia © Photo Date: 7/4/2014 NWI Wetland data courtesy of the National Wetlands Inventory produced by the U.S. Fish and Wildlife Service





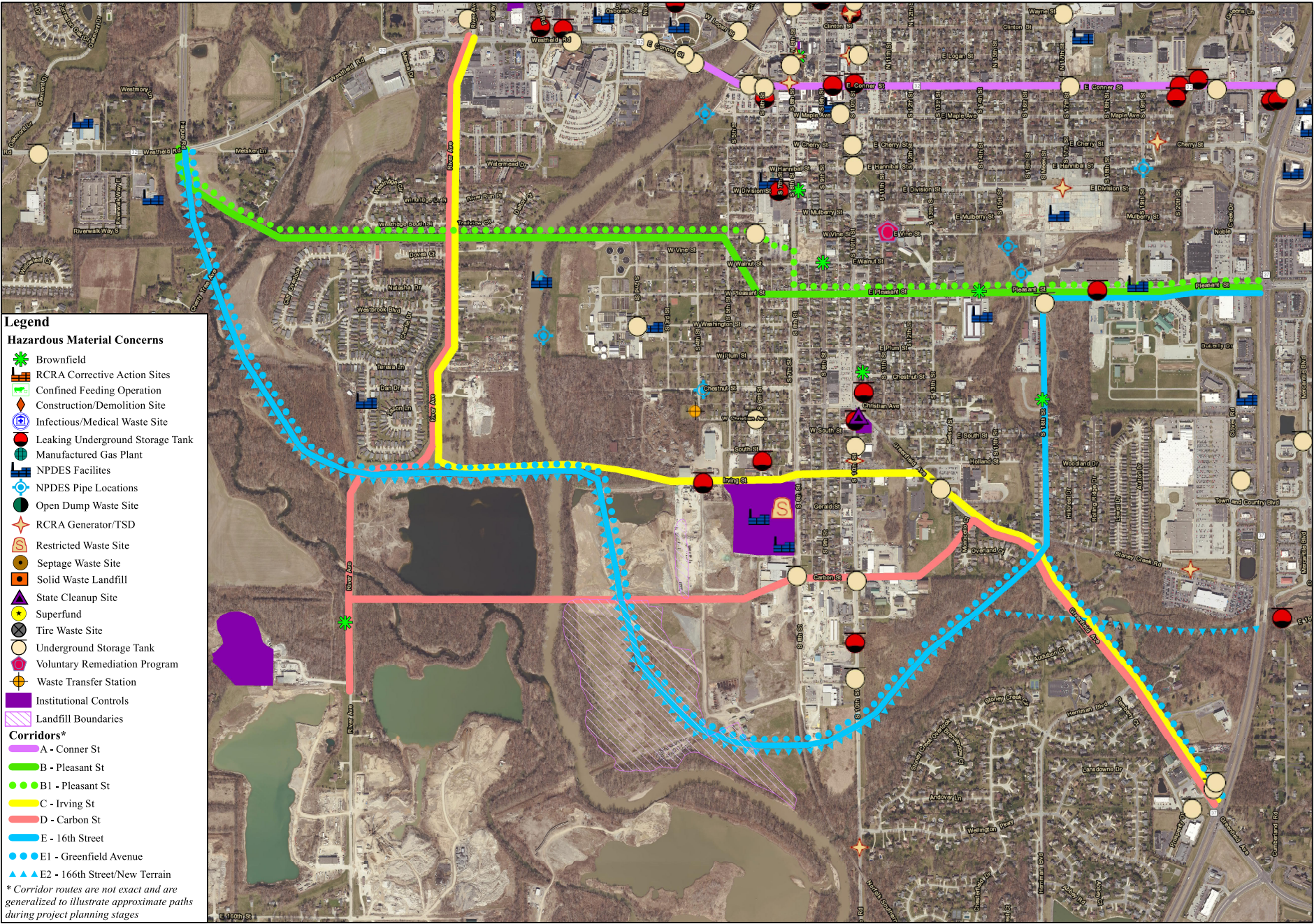
FEMA Floodzones Map



East-West Corridor Project
Noblesville, Hamilton County, Indiana

CHA Project No 059473	DES No TBD
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Scale 1" = 860'

Image Courtesy of USGS and of the IndianaMap Earthstar
Geographics SIO © 2014 Nokia © - Photo Date: 7/4/2014
FEMA Floodzones Courtesy of Federal Emergency Mgmt Agency



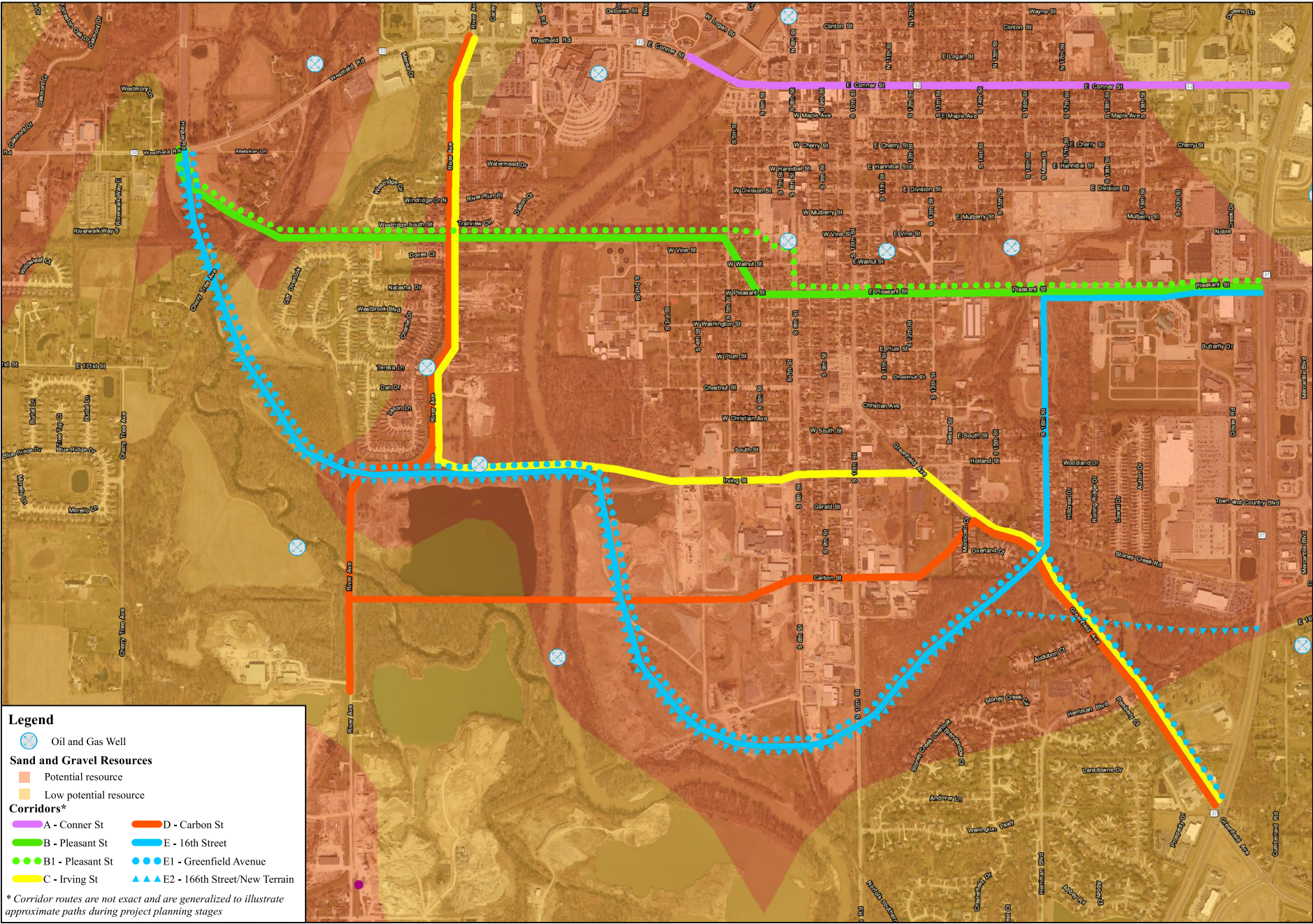


Hazardous Materials Concerns Map

East-West Corridor Project
Noblesville, Hamilton County, Indiana

DES No TBD
CHA Project No 059473
Scale 1" = 1,000'

Image Courtesy of the IndianaMap
Photo Date: 2017



Legend

Oil and Gas Well

Sand and Gravel Resources

Potential resource

Low potential resource

Corridors*

A - Conner St

D - Carbon St

B - Pleasant St

E - 16th Street

B1 - Pleasant St

C - Irving St

E1 - Greenfield Avenue

E2 - 166th Street/New Terrain

* Corridor routes are not exact and are generalized to illustrate approximate paths during project planning stages

Mineral Resources Map

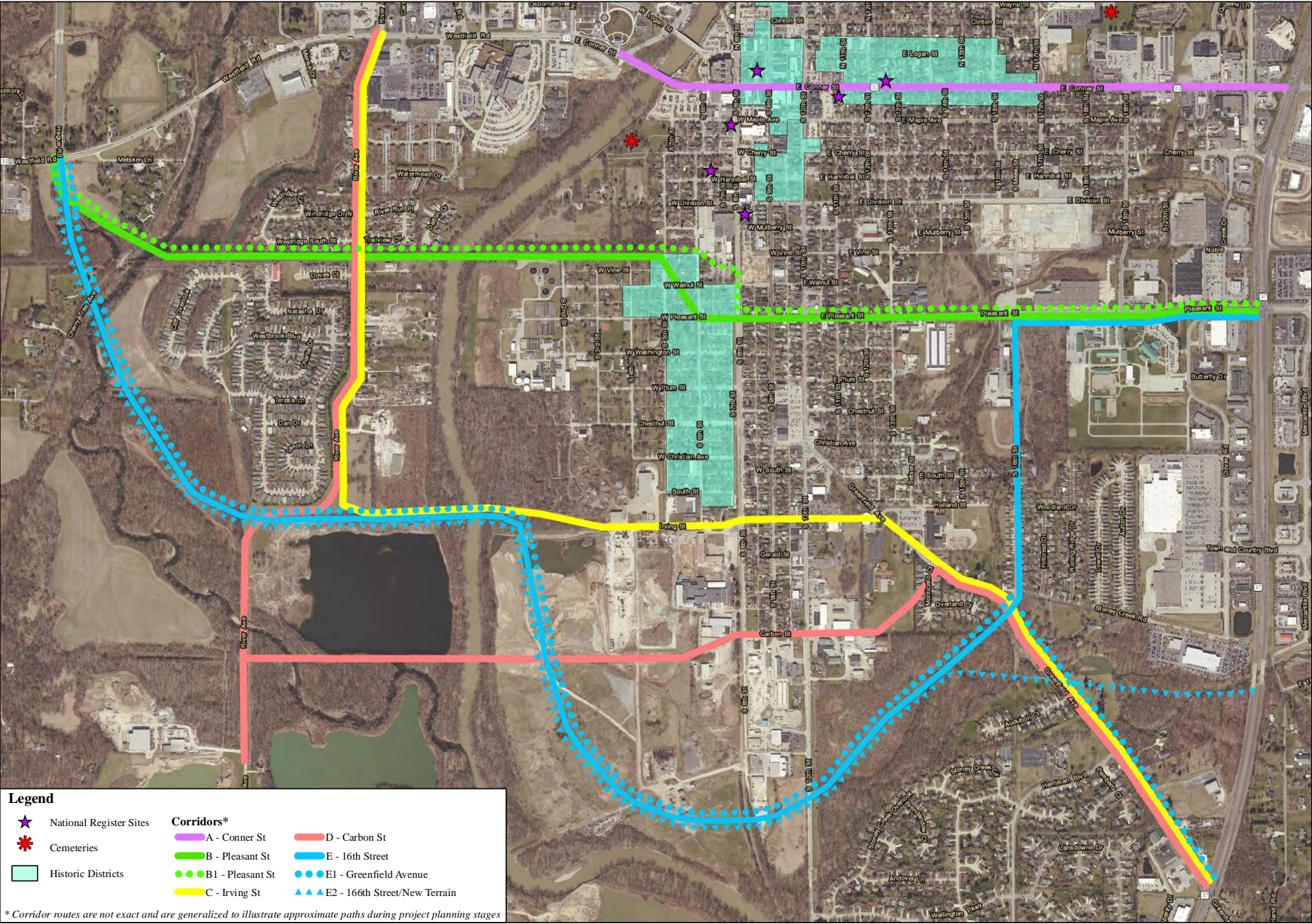
*East-West Corridor Project
Noblesville, Hamilton County, Indiana*



DES No
TBD

CHA Project No
059473

Scale 1" = 1,000'

Image Courtesy of the IndianaMap
Photo Date: 2017





Historic Resources Map

East-West Corridor Project
Noblesville, Hamilton County, Indiana

CHA Project No
059473

DES No
TBD

Scale 1" = 900'

Image Courtesy of the IndianaMap
Photo Date: 2017