Lead Des 1801915

Appendix I

Additional Studies

Land and Water Conservation Fund (LWCF) County Property List for Indiana (Last Updated March 2022)

ProjectNumber	SubProjectCode	County	Property
1800266	1800266	Wabash	Roann Park
1800290	1800290	Wabash	Wabash City Park (Wabash City Park Log Cabin)
1800291	1800291	Wabash	Charley Creek Park
1800304	1800304E	Wabash	Laketon Bog
1800363	1800363S	Wabash	Mississinewa Reservoir
1800363	1800363AA	Wabash	Salamonie Reservoir
1800378	1800378D	Wabash	Mississinewa Reservoir
1800449	1800449B	Wabash	Red Bridge SRA

*Park names may have changed. If acquisition of publically owned land or impacts to publically owned land is anticipated, coordination with IDNR, Division of Outdoor Recreation, should occur.

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date *(MM/DD/YYYY)*	B. Reporting Agency	C. Reason for Update *(Select only one)*	D. DOT Crossing Inventory Number
05 / 28 / 2022	☒ Railroad ☐ Transit ☐ State ☐ Other	☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction	478301T

Part I: Location and Classification Information

1. Primary Operating Railroad	2. State	3. County
Norfolk Southern Railway Company [NS]	INDIANA	WABASH

4. City / Municipality	5. Street/Road Name & Block Number	6. Highway Type & No.
☒ In ☐ Near WABASH	EAST STREET *(Street/Road Name)* | * *(Block Number)*	LS

7. Do Other Railroads Operate a Separate Track at Crossing? ☐ Yes ☒ No	8. Do Other Railroads Operate Over Your Track at Crossing? ☐ Yes ☒ No
If Yes, Specify RR	If Yes, Specify RR

9. Railroad Division or Region	10. Railroad Subdivision or District	11. Branch or Line Name	12. RR Milepost
☐ None GREAT LAKES	☐ None HUNTINGTON	☒ None	D | 0188.580 | *(prefix) | (nnnn.nnn) | (suffix)*

13. Line Segment *	14. Nearest RR Timetable Station *	15. Parent RR *(if applicable)*	16. Crossing Owner *(if applicable)*
	WABASH	☒ N/A	☒ N/A

17. Crossing Type	18. Crossing Purpose	19. Crossing Position	20. Public Access *(if Private Crossing)*	21. Type of Train	22. Average Passenger Train Count Per Day
☒ Public ☐ Private	☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.	☒ At Grade ☐ RR Under ☐ RR Over	☐ Yes ☐ No	☒ Freight ☐ Intercity Passenger ☐ Commuter ☐ Transit ☐ Shared Use Transit ☐ Tourist/Other	☐ Less Than One Per Day ☐ Number Per Day 0

23. Type of Land Use
☐ Open Space ☐ Farm ☒ Residential ☐ Commercial ☐ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard

24. Is there an Adjacent Crossing with a Separate Number?	25. Quiet Zone *(FRA provided)*
☐ Yes ☒ No If Yes, Provide Crossing Number	☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established

26. HSR Corridor ID	27. Latitude in decimal degrees	28. Longitude in decimal degrees	29. Lat/Long Source
☒ N/A	*(WGS84 std: nn.nnnnnnn)* 40.8006214	*(WGS84 std: -nnn.nnnnnnn)* -85.8143615	☒ Actual ☐ Estimated

30.A. Railroad Use *	31.A. State Use * 1
30.B. Railroad Use *	31.B. State Use * 70
30.C. Railroad Use *	31.C. State Use * 1
30.D. Railroad Use *	31.D. State Use * 1
32.A. Narrative *(Railroad Use)* *	32.B. Narrative *(State Use)* *

33. Emergency Notification Telephone No. *(posted)*	34. Railroad Contact *(Telephone No.)*	35. State Contact *(Telephone No.)*
800-946-4744	800-946-4744	855-463-6848

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains *(6 AM to 6 PM)*	1.B. Total Night Thru Trains *(6 PM to 6 AM)*	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
9	8	0	0	

2. Year of Train Count Data *(YYYY)*	3. Speed of Train at Crossing
2020	3.A. Maximum Timetable Speed *(mph)* 40 3.B. Typical Speed Range Over Crossing *(mph)* From 35 to 40

4. Type and Count of Tracks
Main 1 Siding 0 Yard 0 Transit 0 Industry 0

5. Train Detection *(Main Track only)*
☒ Constant Warning Time ☐ Motion Detection ☐AFO ☐ PTC ☐ DC ☐ Other ☐ None

6. Is Track Signaled?	7.A. Event Recorder	7.B. Remote Health Monitoring
☒ Yes ☐ No	☐ Yes ☒ No	☐ Yes ☒ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*
05/28/2022		478301T

Part III: Highway or Pathway Traffic Control Device Information

1. Are there Signs or Signals? ☒ Yes ☐ No

2. Types of Passive Traffic Control Devices associated with the Crossing

2.A. Crossbuck Assemblies *(count)*	2.B. STOP Signs *(R1-1) (count)*	2.C. YIELD Signs *(R1-2) (count)*	2.D. Advance Warning Signs *(Check all that apply; include count)* ☐ None
2	0		☒ W10-1 2 ☐ W10-3 ☐ W10-11 ☐ W10-2 ☐ W10-4 ☐ W10-12

2.E. Low Ground Clearance Sign *(W10-5)*	2.F. Pavement Markings	2.G. Channelization Devices/Medians	2.H. EXEMPT Sign *(R15-3)*	2.I. ENS Sign *(I-13)* Displayed
☐ Yes *(count_____)* ☒ No	☐ Stop Lines ☐ Dynamic Envelope ☒ RR Xing Symbols ☐ None	☐ All Approaches ☐ Median ☐ One Approach ☒ None	☐ Yes ☒ No	☒ Yes ☐ No

2.J. Other MUTCD Signs ☐ Yes ☒ No	2.K. Private Crossing Signs *(if private)*	2.L. LED Enhanced Signs *(List types)*
Specify Type _____ Count _____ Specify Type _____ Count _____ Specify Type _____ Count _____	☐ Yes ☐ No	

3. Types of Train Activated Warning Devices at the Grade Crossing *(specify count of each device for all that apply)*

3.A. Gate Arms *(count)*	3.B. Gate Configuration	3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*	3.D. Mast Mounted Flashing Lights *(count of masts)* 2	3.E. Total Count of Flashing Light Pairs
Roadway 2 Pedestrian 0	☒ 2 Quad ☐ Full *(Barrier)* Resistance ☐ 3 Quad ☐ 4 Quad ☐ Median Gates	Over Traffic Lane 0 ☐ Incandescent Not Over Traffic Lane 0 ☐ LED	☒ Incandescent ☐ LED ☒ Back Lights Included ☐ Side Lights Included	4

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells *(count)*
_____/_____ ☐ Not Required	☐ Yes Installed on *(MM/YYYY)* _____/_____ ☒ No	☐ Yes ☒ No	1

3.J. Non-Train Active Warning	3.K. Other Flashing Lights or Warning Devices
☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☒ None	Count 0 Specify type 0

4.A. Does nearby Hwy Intersection have Traffic Signals?	4.B. Hwy Traffic Signal Interconnection	4.C. Hwy Traffic Signal Preemption	5. Highway Traffic Pre-Signals	6. Highway Monitoring Devices *(Check all that apply)*
☐ Yes ☒ No	☒ Not Interconnected ☐ For Traffic Signals ☐ For Warning Signs	☐ Simultaneous ☐ Advance	☐ Yes ☒ No Storage Distance * 0 Stop Line Distance * 0	☐ Yes - Photo/Video Recording ☐ Yes – Vehicle Presence Detection ☒ None

Part IV: Physical Characteristics

1. Traffic Lanes Crossing Railroad	2. Is Roadway/Pathway Paved?	3. Does Track Run Down a Street?	4. Is Crossing Illuminated? *(Street lights within approx. 50 feet from nearest rail)*
☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic Number of Lanes 2	☒ Yes ☐ No	☐ Yes ☒ No	☒ Yes ☐ No

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* _____/_____ Width * 10 Length * 40

☐ 1 Timber ☒ 2 Asphalt ☐ 3 Asphalt and Timber ☐ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal
☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other *(specify)* _____

6. Intersecting Roadway within 500 feet?	7. Smallest Crossing Angle	8. Is Commercial Power Available? *
☒ Yes ☐ No If Yes, Approximate Distance *(feet)* _____	☐ 0° – 29° ☐ 30° – 59° ☒ 60° - 90°	☒ Yes ☐ No

Part V: Public Highway Information

1. Highway System	2. Functional Classification of Road at Crossing	3. Is Crossing on State Highway System?	4. Highway Speed Limit
☐ (01) Interstate Highway System ☐ (02) Other Nat Hwy System (NHS) ☐ (03) Federal AID, Not NHS ☒ (08) Non-Federal Aid	☐ (0) Rural ☒ (1) Urban ☐ (1) Interstate ☐ (5) Major Collector ☐ (2) Other Freeways and Expressways ☐ (3) Other Principal Arterial ☐ (6) Minor Collector ☐ (4) Minor Arterial ☒ (7) Local	☐ Yes ☒ No	30 MPH ☒ Posted ☐ Statutory

5. Linear Referencing System *(LRS Route ID)* *

6. LRS Milepost *

7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 2018 AADT 653	2 %	☒ Yes ☐ No Average Number per Day 4	☐ Yes ☒ No

Submission Information - *This information is used for administrative purposes and is not available on the public website.*

Submitted by _____ Organization _____ Phone _____ Date _____

shrewsberry
YOUR VISION. OUR FOCUS.

November 3, 2020

Jackie Dohrenwend, PE
Lead Bridge Engineer/Project Manager
WSP USA
115 W. Washington Street
Suite 1270S
Indianapolis, IN 46205

Some appendices have been omitted, but can be made available upon request.

RE: INDOT TRAX – City of Wabash

Dear Ms. Dohrenwend:

This letter will serve to outline the assumptions, procedures, and results of the traffic operations analysis for the Indiana Department of Transportation (INDOT) Trax Project located in the City of Wabash, Indiana. This project will involve the construction of a grade separated railroad crossing along East Street. All supporting documentation is attached.

Video turning movement counts (TMC) were taken for a 24-hour period at the intersection of East Street and Hill Street, and during the peak hours at the intersection of East Street and Walnut Street in August 2020. Using the collected traffic data, historic counts from the INDOT Traffic Count Database, and traffic counts from a 2017 feasibility study performed by American Structurepoint, a 0% annual growth rate was estimated and used to forecast traffic data to a 2023 Open Year and 2043 Design Year.

The COVID-19 Pandemic has impacted traffic volumes across the State. The traffic data collected for this analysis was compared to the traffic data collected in 2017 for the American Structurepoint feasibility study. The AADT along East Street in the vicinity of the separated-grade crossing was found to be comparable between the 2017 and 2020 traffic data.

It was assumed that traffic from the surrounding at-grade railroad crossings will choose the grade-separated crossing during train events to avoid closures and delays. Traffic was redirected from the following nearby at-grade railroad crossings:

- Huntington Street
- Allen Street
- Spring Street

The number of trains per day was taken from data found on the Federal Rail Administration (FRA) Highway-Rail Crossing Inventory. For this rail line, the FRA data show that there will be 32 trains per day. At an estimated 10-minute delay per train, thru traffic at the above railroad crossings will be blocked for 22% of the day. It was assumed this blocked traffic will redirect to the proposed overpass. Redirected railroad traffic calculations for the above listed intersections is attached with this report.

The redirected traffic was then assigned to various movements at the study intersections. Exhibits showing redirected railroad trips have been attached to this report.

An operations analysis was then conducted using Synchro 10 Software at both study intersections. The existing intersection control was modeled at both locations. The following scenarios were considered:

- 2020 Existing Traffic Conditions.
- 2023 Open Year with Redirected Railroad Traffic.
- 2043 Design Year with Redirected Railroad Traffic.

The level of service (LOS) results of the operations analysis shows acceptable LOS for both intersections. A LOS A indicates the least amount of delay, while a LOS F indicates the most congested conditions and the highest amount of delay. A LOS D or better is considered acceptable during peak periods. The level of service summary is attached with this report.

The tables below show the results of the operations analysis at the study intersections. The redirected traffic has minimal impact on the study intersections. The study intersections will continue to operate at an acceptable LOS through the 2043 design year, and no improvements are needed to the study intersections.

LOS Summary: East Street and Walnut Street (AWSC)

Horizon Year	Peak	EB			WB			NB			SB			Overall
		L	T	R	L	T	R	L	T	R	L	T	R	
2020 (Existing Year)	AM	A			A			A			A			A
	PM	A			A			A			A			A
2023 (Construction Year)	AM	A			A			A			A			A
	PM	A			A			A			A			A
2043 (Design Year)	AM	A			A			A			A			A
	PM	A			A			A			A			A

LOS Summary: East Street and Hill Street (TWSC)

Horizon Year	Peak	EB			WB			NB			SB			Overall
		L	T	R	L	T	R	L	T	R	L	T	R	
2020 (Existing Year)	AM	A	*ff*		A	*ff*		A			A			-
	PM	A	*ff*		A	*ff*		A			A			-
2023 (Construction Year)	AM	A	*ff*		A	*ff*		B			A			-
	PM	A	*ff*		A	*ff*		B			A			-
2043 (Design Year)	AM	A	*ff*		A	*ff*		B			A			-
	PM	A	*ff*		A	*ff*		B			B			-

**ff denotes free flow condition. No LOS is given.*

An Opening Year AADT, Design Year AADT, Design Year DHV, Directional Distribution and the Percent of Trucks was estimated for the proposed grade separated railroad crossing. Traffic data calculations are attached with this report, and a summary of the results are shown as follows:

TRAFFIC DATA		
A.A.D.T. (2023)	995	V.P.D.
A.A.D.T. (2023)	995	V.P.D.
D.H.V. (2043)	90	V.P.H.
DIRECTIONAL DISTRIBUTION	NB 51% , SB 49 %	
% TRUCKS	1.11 %	A.A.D.T.
	0.00 %	D.H.V.

Please feel free to contact me with any questions or concerns you may have regarding this traffic analysis.

Sincerely,

Mark St. John, PE
Project Engineer
Shrewsberry & Associates, LLC

Attachments :

1. Growth Rate Calculations.
2. Traffic Counts.
3. Train Crossing Calculations and Redirected Railroad Traffic Calculations.
4. Diverted Railroad Trip Distribution and Trip Assignment Exhibits.
5. AM & PM Peak Calculations for Diverted Railroad Trips.
6. Synchro Operational Analysis.
7. Traffic Data and %Trucks Calculations.

3. TRAIN CROSSING CALCULATIONS AND REDIRECTED RAILROAD TRAFFIC CALCULATIONS

shrewsberry

COMPUTATION SHEET
Wabash TRAX
Wabash, IN

Prepared By: HSB
Date: 8/31/2020
Checked By: MPS
Date: 9/4/2020

Trian Crossings Calcs

From Federal Rail Administartion (FRA) data, the Huntington St, Allen St and Spring St rail crossing had :

20 Daytime Thru Trains/Day in 2020
12 Nightime Thru Trians/Day in 2020
32 Total Thru Trains/Day in 2020

Assuming each train blocks the crossing for 10 min

Percent time blocked = (32 Trains)*(10 Min)*(Hr/60 Min)*(Day/24 Hr) = 22%

Project : TRAX Wabash, IN
Project Number : 19-0021
Description : Redirected railroad traffic for closure intersections at railraod crossing

By: HSB
Date: 8/31/2020
Checked: MPS
Date: 9/4/2020

Railroad Crossing	2020 Assumed ADT	Assumptions	# Trains/Day*	Time per Train (min)	% of Day	Redirected Traffic (Veh/Day)	Directional Distribution		ADT Blocked by trains	
							NB (%)	SB (%)	NB (%)	SB (%)
N Huntington St	315	ADT assumed same from ASI feasibility Study	32	10	22	70	41.27	58.73	29	41
N Allen St	2149	ADT assumed same from ASI feasibility Study	32	10	22	473	59.14	40.86	280	193
N Spring St	227	ADT assumed same from ASI feasibility Study	32	10	22	50	42.73	57.27	21	29
East St	453	No reduction at East St due to proposed bridge	-	-	-	-	45.03	54.97	204	249

**Per Federal Rail Administration (FRA) Data*

INDOT LOCAL TRAX

CITY OF WABASH

RAILROAD GRADE SEPARATION ENGINEERING ASSESSMENT

DES: 1801915

NOVEMBER 15, 2019

REV. JUNE 27, 2020

PREPARED FOR THE INDIANA DEPARTMENT OF TRANSPORTATION

PREPARED BY WSP

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Appendices have been omitted, but can be made available upon request.

1 PURPOSE OF REPORT

The purpose of this report is to document the engineering assessment phase of a railroad grade separation project over the Norfolk-Southern (N&S) railroad tracks in Wabash, Indiana. This document outlines the evaluation of six alternatives and is intended to serve as a guide for subsequent survey, design, environmental, right of way and other project activities for the recommended alternative leading to construction. To aid in reaching our conclusions, the project team carried out two (2) site visits.

2 PROJECT LOCATION

This project is located within the City of Wabash (The City) in northern Indiana. The projects site as referenced in subsequent sections of this report is defined by Wabash Street to the west, Wabash River to the east, Elm Street to the north, and E Main Street to the south. The neighborhood in which the project site is located consists mainly of single family homes, churches, and two parks. Due to its historic character, special attention was given to the East Wabash Historic District, of which many homes in the focus area are contributing.

3 PROJECT

A key east-west connector for the Norfolk Southern Railroad, the at-grade tracks divide the City of Wabash. According to interviews with City Officials, stopped train events happen frequently and cause large scale disruption. Although specific data has not been recorded by City officials, anecdotally stopped train events occur multiple times per month for greater than 10 minutes.

During these events, vehicle access is cut off; separating the north and south parts of The City. To address the operational capacity problems caused by these train-vehicle conflicts, INDOT has partnered with The City to find a recommended location to construct a grade-separated road crossing with the railroad tracks. To explore the options available, WSP has created six alternatives (five located at existing at-grade crossings and a sixth which is considered where no crossing currently exists) with the key goals of safety and accessibility in mind.

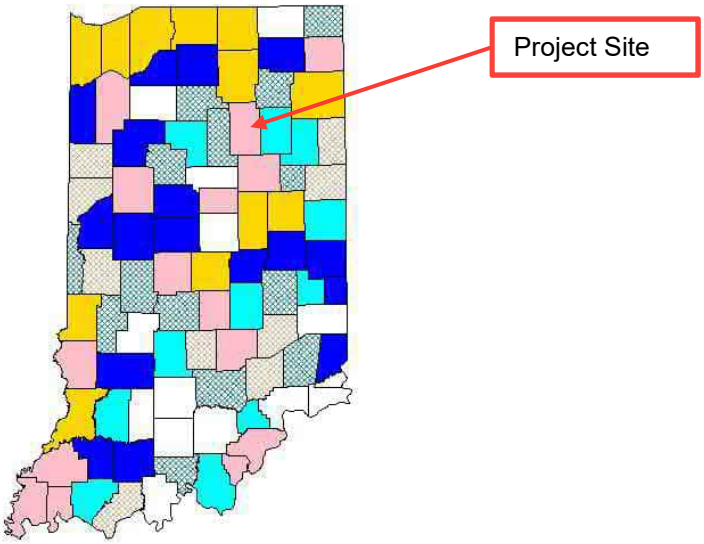
3.1 NEED:

There are currently no grade-separated crossings within the City of Wabash limits. In case of a stopped train event in the City, blocking Mill Street to East Street, the nearest detour available is Largo Road. Largo Road is approximately 5.5 miles east of the city limits. Considering that the City's is served by one hospital at Parkview Wabash Hospital along SR 13 on the north side of The City, the threat of a stopped train presents serious safety hazards to the southern portion of the City in the form of long delays for emergency vehicles.

Generally, the goal of the LocalTrax program is to reduce at-grade train collisions. In Wabash County, according to the FRA data, over the past 10 years there have been 21 collisions resulting in 4 injuries and 2 fatalities.

HIGHWAY–RAIL INCIDENTS FOR INDIANA, January 2010 TO March 2020

RAILROAD: ALL



	Totals			At Public Crossing						At Private Crossing					
				Motor Vehicle			Other			Motor Vehicle			Other		
	Cnt	Kld	Inj	Cnt	Kld	Inj	Cnt	Kld	Inj	Cnt	Kld	Inj	Cnt	Kld	Inj
WABASH	21	2	4	21	2	4	-	-	-	-	-	-	-	-	-

3.2 PURPOSE:

The purpose of the project is to improve the safety and mobility of the public by addressing the adverse effects of the current at grade crossings at the project location. By constructing a bridge to carry the motoring public and pedestrians over the railroad, their safety is greatly improved by reducing the potential for train, vehicle and pedestrian collisions while simultaneously providing unobstructed access to the south side of Wabash, reducing delays in emergency response times.

3.3 ASSUMPTIONS AND ASSESSMENT CRITERIA:

The following assumptions are made for this analysis:

1. A similar roadway section with similar traffic volumes is assumed for all the alternatives. This is a reasonable assumption due to the stated project goal of closing all at-grade crossings as part of the project in order to improve overall safety through the project area. For these reasons, the alternates examined all use the same typical section and roadway geometric criteria for the purposes of this analysis.
2. Road profile grades were using Level 1 Design Criteria in order to minimize impacts. Adverse effects and ancillary impacts associated with using a steep grade will be examined in the subsequent detailed design phase following the selection of the preferred alternative.

After the selection and approval of the preferred alternative, the geometry assumptions will be reevaluated.

The following assessment criteria was used to evaluate the alternatives:

1. Minimize impacts to residents of the City of Wabash. One of the main factors used to assess the alternates in this determination was the amount of right-of-way acquisition that would be necessary with each proposed alignment. To achieve the goal of providing a safe and unobstructed railroad crossing, alternatives were weighed heavily by the impact they would have on residents. Higher scores were given to those that had the least impact on adjacent properties.

2. Minimize impacts to cultural and historic resources. Although a full Section 106 assessment was not completed, information from the State Historic Architectural and Archaeological Research Database (SHAARD) was assessed. These results show a high density of Historic Districts and National Register Sites within the project area. Alternatives were weighed heavily by the impacts they would have on historic resources and higher scores were given to those alternatives that have the least impact on historic properties.

As design progressed with the preferred alternative, continued efforts will be made to minimize impacts to residents and cultural resources.

4 EXISTING FACILITY

4.1 CROSS STREETS AND INTERSECTIONS:

SR 13 (Wabash Street) is the main north-south minor arterial used to access the project area. Within the project area, Hill Street, Allen Street, and East Street are all INDOT designated major collectors.

There are 7 East-West Streets within the project area (Canal Street, Market Street, Main Street, Hill Street, Sinclair Street, Maple Street and Elm Street). The impact on cross streets varies for each alternative based on project limits.

4.2 LAND USE

The proposed project area is generally urbanized with medium density residential making up most of the project area. Adjacent to N Wabash Street to the west of the study area is a commercial corridor containing several municipal buildings. Additional institutional uses and open space are scattered throughout.

4.3 UTILITIES

Utilities that were visually observed within the project limits include overhead electric power lines, gas lines, water mains, storm sewers, and overhead communication lines.

4.4 EXISTING LIGHTING AND SIGNAGE

The City of Wabash is responsible for the existing lighting located within the project limits. Cobra head lighting and decorative lighting is located throughout the study area.

4.5 DRAINAGE

Within the study area, typical drainage consists of inlets along the curb lines collect roadway drainage in an enclosed storm sewer system.

5 FIELD CHECK

Two site visits were conducted in preparation for this report. A preliminary field check will be held when plans have been further developed. Public engagement will be key to the success of the project and hearings and outreach events are planned for the design process.

6 ENVIRONMENTAL

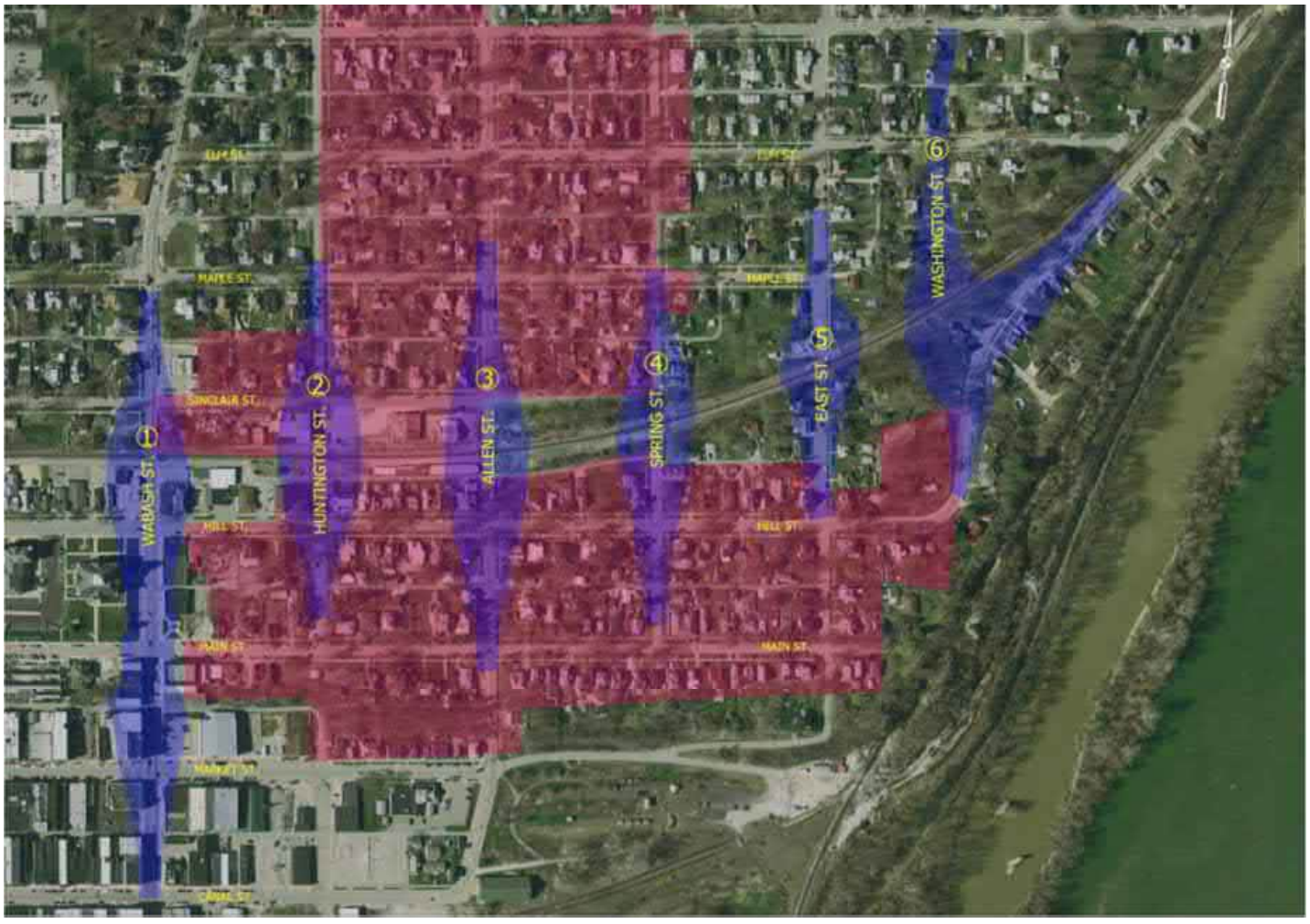
With the completion of the Wabash and Erie Canal in Wabash in 1837, and the Lake Erie, Wabash, and St. Louis Railroad in 1856, Wabash developed into a prosperous trading center in the mid-to-late nineteenth century.

According to the National Register of Historic Places Registration Form, prepared by the Center for Historic Preservation, Ball State University, 2010, the East Wabash Historic District, NR-1916, was listed in the National Register in 2011 under Criterion A for its association with the historic transportation network of Wabash and north central Indiana and Criterion C for its diverse architecture. The period of significance dates from 1850 to 1930, encompassing platted additions for residential development for a total of 238 buildings.

There are three other National Register-listed historic districts west of Wabash St.: Downtown Wabash Historic District, NR-0799, listed in 1986 under Criterion C; West Wabash Historic District, NR-0891, listed in 1988 under Criteria A and C; and the North Wabash Historic District, NR-1472, listed in 1999 under Criteria A and C. While the Downtown Historic District contains commercial development, the remaining two historic districts contain residential development.

In addition, review of ArcGIS and Indiana Map online mapping tools found that the Wabash Erie historic canal traverses through the city south of Canal Street and through Paradise Spring Historical Park, which is located near the intersection of Market and Allen Streets. Paradise Spring Historical Park is identified as a former landfill (the Wabash Burning Dump).

The following figure shows the project limits (Blue shaded area), and the impact on historic district (Red shaded area) for each of the alternatives.



A Red Flag Investigation was conducted by American Structurepoint for a Grade Separation Feasibility Study. Per the report, "There are no hazmat concerns within the footprint of the proposed grade separation. No waterway or floodplains will be impacted by the proposed project. No pipelines are present within the proposed project limits, therefore no impacts to this type of resource. Hanna Park is in the vicinity of the proposed project." Alternatives 1-4 do not affect the 4(f) resource. Alternative 5 may impact the park, but impacts can be minimized. Alternative 6 will affect the park and those impacts are considered in this analysis. A January 2019 review of red flag resources identified environmental sites of concern on SR 13/Wabash Street which will be affected by Alternative 1 and Hanna Park within the proposed project area of Alternative 6. Environmental sites would require research of the Indiana Department of Environmental Management Virtual File Cabinet (IDEM VFC). Coordination with INDOT Site Assessment and Management (SAM) would likely be required. These resources are further discussed below. There were no water or mining/mineral resources identified within the project areas of any of the Alternatives discussed in this document.

Historic resources and public parks and recreation areas are protected by Section 4(f) of the Department of Transportation Act of 1966. Therefore, any impacts to 4(f) resources will require coordination with INDOT Environmental Services early in the project development process to determine potential impacts and associated documentation required to evaluate and minimize impacts.

7 ALTERNATIVES AND RECOMMENDATIONS

This study analyzes six overpass alternatives. Underpass alternatives were eliminated as it is less desirable per IDM 402-6.01(03) and the existing topography of The City of Wabash is not favorable. The existing track sits in a valley through the City of Wabash, favoring an overpass at each alternative location.
There is one Norfolk Sothern east-west track, located between Hill Street and Maple Street, with at-grade crossings through the City of Wabash. The following North-South Streets were investigated for reconstruction to pass over the railroad.

1. Wabash Street
2. Huntington Street
3. Allen Street
4. Spring Street
5. East Street
6. Washington Street
7. Do Nothing

7.1 ALTERNATIVE 1- WABASH STREET OVER N&S RAILROAD

This Alternative consists of the reconstruction of Wabash Street, between Canal and Maple Street, to provide a grade separated crossing over the railroad. Reconstruction of Canal Street, Market Street, Main Street, Hill Street and Sinclair Street is needed to tie into the elevated roadway at Wabash Street. A plan and profile for this alternative is included in Appendix C.

Note that the above project limits display shows roadway reconstruction limits and potential property damages along the mainline only. If constructed, each cross street would need to be raised as well. This would greatly extend the project limits along each cross street to the east and west.

Environmental Impacts

This alternative would have impact two parcels in the East Wabash Historic District. This alternative would adversely effect several contributing properties from the Downtown Wabash Historic District, NR-0799; the Solomon Wilson Building, NR-0581 and the James Amoss Building, NR-0582, which are each individually listed on the National Register; and contributing properties from the West Wabash Historic District, NR-0891. The impacts of this alternative would potentially require four individual Section 4(f) evaluations.

There are several underground storage tanks (USTs) and leaking underground storage tanks (LUSTs) along Wabash Street that will likely be affected by this alternative. There is also a Resource Conservation and Recovery Act (RCRA) site on the south side of the railroad, adjacent to the intersection of Wabash Street and Hill Street; a Voluntary Remediation Site south of the intersection of Wabash and Canal Streets; and a Brownfield east of Wabash Street on Market Street. A planned trail is mapped along Wabash Street and Hill Street within the proposed project area.

R/W Impacts

Permanent right-of-way will be necessary for this alternative. It is estimated that permanent right-of-way or significant damages payments would need to be acquired from 43 parcels for the mainline reconstruction alone. Additional damages and permanent right-of-way parcels would be required for the reconstruction of Canal Street, Market Street, Main Street, Hill Street and Sinclair Street. Even considering the use of MSE walls, drives and access to many of these properties would be cut-off.

Traffic & Connectivity

Wabash Street (SR 13) is an Urban Minor Arterial that connects the City of Wabash in North-South direction. It carries a traffic volume of 9,407 vehicles per day (VPD) 2017 Average Annual Daily Traffic (AADT).

Project Purpose and Need Assessment

This alternative meets the purpose and need of the project is to improve the safety and mobility of the public by addressing the adverse effects of the current at grade crossings at the project location. By constructing a bridge to carry the motoring public and pedestrians over the railroad, their safety is greatly improved by reducing the potential for train, vehicle and pedestrian collisions while reducing emergency response times.

Feasibility

Impact to the historic district on the mainline is minimal in comparison with other proposed alternatives. However, this alternative would require raising Hill Street, Main Street, Market Street, and St. Claire Street intersections, far extending the project impacts into the historic district.

Accordingly, this alternative has a high right-of-way impact due to the length of grade reconstruction required to tie into the existing profile (approximately 1,705 ft). It also requires reconstruction of Hill Street (Major Collector), Market and Canal Streets (Minor Arterials) along with other local streets which would cause significant impact to the traffic operation in the City of Wabash. In addition, there are several environmental sites of concern along and near Wabash Street that would be affected and would likely require additional environmental assessments and proper waste disposal.

While this alternative does meet the project purpose and need, it is not feasible. For this reason, the alternative is dismissed.

7.2 ALTERNATIVE 2- HUNTINGTON STREET OVER N&S RAILROAD

This Alternative consists of the reconstruction of Huntington Street to pass over the railroad. Reconstruction of Hill Street, Sinclair Street and Maple Street is needed to tie into the elevated roadway at Huntington Street. A plan and profile for this alternative is included in Appendix C.

Note that the above project limits display shows roadway reconstruction limits and potential property damages along the mainline only. If constructed, each cross street would need to be raised as well. This would greatly extend the project limits along each cross street to the east and west.

Environmental Impacts

This alternative would adversely impact 18 parcels within the East Wabash Historic District, NR-1916 along the mainline Huntington Street reconstruction. Additional historic parcels would be required for the intersection reconstructions at Hill Street, Sinclair Street and Maple Street. This alternative would permanently incorporate the East Wabash Historic District, NR-1916 into a transportation facility, potentially requiring an individual Section 4(f) evaluation.

Research of the IDEM VFC of the RCRA site at the intersection of Wabash and Hill Streets and the Brownfield on Market Street, west of Huntington Street, would be required to determine if contamination exists within the project area of Alternative 2. No other environmental sites of concern were found within the project area.

R/W Impacts

Permanent right-of-way will be necessary for this alternative. It is estimated that permanent right-of-way or significant damages payments would need to be acquired from 18 parcels for the mainline reconstruction of Huntington Street. Additional damages and permanent right-of-way parcels would be required for the reconstruction of Hill Street, Sinclair Street, and Maple Street. Even considering the use of MSE walls, drives and access to many of these properties would be cut-off.

Traffic & Connectivity

Huntington Street is an Urban Local Street that connects City of Wabash in North-South direction. It carries a traffic volume of 298 vehicles per day (vpd) 2017 Average Annual Daily Traffic (AADT).

In the case of a stopped train event, traffic to this street would be increased. The local street, connective intersections, and traffic pattern would be analyzed and upgraded for this higher flow of traffic.

Project Purpose and Need Assessment

This alternative meets the purpose and need of the project is to improve the safety and mobility of the public by addressing the adverse effects of the current at grade crossings at the project location. By constructing a bridge to carry the motoring public and pedestrians over the railroad, their safety is greatly improved by reducing the potential for train, vehicle and pedestrian collisions while reducing emergency response times.

Feasibility

This alternative has the highest impact on the historic district compared to other alternatives that are being examined. In addition, this alternative requires reconstruction of three cross streets, including Hill Street (Major Collector) which would cause significant impact to the traffic operation in the City of Wabash.

While this alternative does meet the project purpose and need, it is not feasible. For this reason, the alternative is dismissed.

7.3 ALTERNATIVE 3- ALLEN STREET OVER N&S RAILROAD

This Alternative requires reconstruction of Allen Street to pass over the railroad. Reconstruction of Main Street, Hill Street, Sinclair Street and Maple Street is needed to tie into the elevated roadway at Allen Street. A plan and profile for this alternative is included in Appendix C.

Note that the above project limits display shows roadway reconstruction limits and potential property damages along the mainline only. If constructed, each cross street would need to be raised as well. This would greatly extend the project limits along each cross street to the east and west.

Environmental Impacts

This alternative would adversely impact 17 parcels within the East Wabash Historic District, NR-1916. This alternative would permanently incorporate the East Wabash Historic District, NR-1916 into a transportation facility, potentially requiring an individual Section 4(f) evaluation.

For the most part, Allen Street within the proposed project limits is in the historic district, hence the adverse impacts to the historic district is relatively high in comparison with the other alternatives that are being examined.

Research revealed no environmental sites of concern within the project area, however Paradise Spring Historic Park, at the intersection of Allen and Market Streets, is identified as a former landfill (Wabash Burning Dump).

R/W Impacts

Permanent right-of-way will be necessary for this alternative. It is estimated that permanent right-of-way or significant damages payments would need to be acquired from 19 parcels for the mainline reconstruction of Huntington Street. Additional damages and permanent right-of-way parcels would be required for the reconstruction of Hill Street, Sinclair Street, and Maple Street. Even considering the use of MSE walls, drives and access to many of these properties would be cut-off.

Traffic & Connectivity

Allen Street is an Urban Major Collector that connects City of Wabash in North-South direction. It carries a traffic volume of 1,997 vehicles per day (vpd) 2017 Average Annual Daily Traffic (AADT).

In the case of a stopped train event, traffic to this street would be increased. The local street, connective intersections, and traffic pattern would be analyzed and upgraded for this higher flow of traffic.

Project Purpose and Need Assessment

This alternative meets the purpose and need of the project is to improve the safety and mobility of the public by addressing the adverse effects of the current at grade crossings at the project location. By constructing a bridge to carry the motoring public and pedestrians over the railroad, their safety is greatly improved by reducing the potential for train, vehicle and pedestrian collisions while reducing emergency response times.

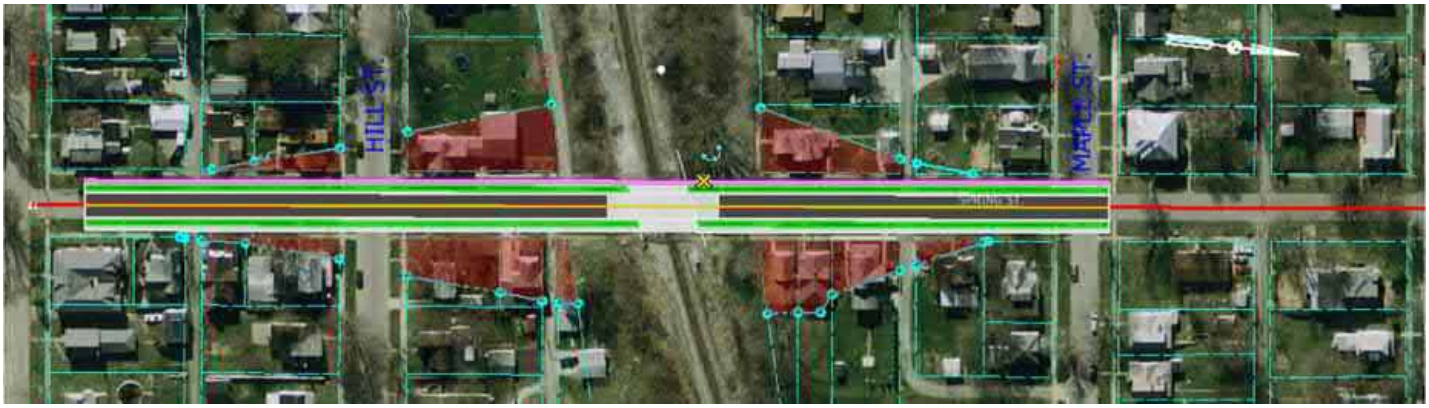
Feasibility

However, this alternative has a high impact on the historic district (17+ parcels affected). In addition, it requires reconstruction of four cross streets, including Hill Street (Major Collector) which would cause significant impact to the traffic operation in the City of Wabash.

While this alternative does meet the project purpose and need, it is not feasible. For this reason, the alternative is dismissed.

7.4 ALTERNATIVE 4- SPRING STREET OVER N&S RAILROAD

This Alternative requires reconstruction of Spring Street to pass over the railroad. Reconstruction of Hill Street, Sinclair Street and Maple Street is needed to tie into the elevated roadway at Spring Street. A plan and profile for this alternative is included in Appendix C.



Note that the above project limits display shows roadway reconstruction limits and potential property damages along the mainline only. If constructed, each cross street would need to be raised as well. This would greatly extend the project limits along each cross street to the east and west.

Environmental Impacts

This alternative would adversely impact 10 parcels within the East Wabash Historic District, NR-1916. This alternative would permanently incorporate the East Wabash Historic District, NR-1916 into a transportation facility, potentially requiring an individual Section 4(f) evaluation.

The adverse impacts to the historic district are high compared to other alternatives that are being examined. Research revealed no environmental sites of concern within the project area of Alternative 4.

R/W Impacts

Permanent right-of-way will be necessary for this alternative. It is estimated that permanent right-of-way or significant damages payments would need to be acquired from 15 parcels for the mainline reconstruction of Spring Street. Additional damages and permanent right-of-way parcels would be required for the reconstruction of Hill Street and Maple Street. Even considering the use of MSE walls, drives and access to many of these properties would be cut-off.

Traffic & Connectivity

Spring Street is an Urban Local Street that connects City of Wabash in North-South direction. It carries a traffic volume of 205 vehicles per day (vpd) 2017 Average Annual Daily Traffic (AADT).

In the case of a stopped train event, traffic to this street would be increased. The local street, connective intersections, and traffic pattern would be analyzed and upgraded for this higher flow of traffic.

Project Purpose and Need Assessment

This alternative meets the purpose and need of the project is to improve the safety and mobility of the public by addressing the adverse effects of the current at grade crossings at the project location. By constructing a bridge to carry the motoring public and pedestrians over the railroad, their safety is greatly improved by reducing the potential for train, vehicle and pedestrian collisions while reducing emergency response times.

Feasibility

However, this alternative has a high impact on the historic district (10+ parcels affected). In addition, it requires reconstruction of three cross streets, including Hill Street (Major Collector) which would cause significant impact to the traffic operation in the City of Wabash.

While this alternative does meet the project purpose and need, it is not feasible. For this reason, the alternative is dismissed.

7.5 ALTERNATIVE 5- EAST STREET OVER N&S RAILROAD

This Alternative requires reconstruction of East Street to pass over the railroad. Reconstruction of Maple Street is needed to tie into the elevated roadway at East Street. A plan and profile for this alternative is included in Appendix C.

Environmental Impacts

This alternative would adversely impact 3 parcels within the East Wabash Historic District, NR-1916. This alternative would permanently incorporate the East Wabash Historic District, NR-1916 into a transportation facility, potentially requiring an individual Section 4(f) evaluation.

For the most part, East Street within the proposed project limits is outside the East Wabash Historic District, NR-1916, hence the adverse impacts to the East Wabash Historic District, NR-1916is minimal compared to other alternatives that are being examined.

Research revealed no environmental sites of concern within the project area of Alternative 5.

Right of way Impact

Permanent right-of-way will be necessary for this alternative. It is estimated that permanent right-of-way or significant damages payments would need to be acquired from 19 parcels for the mainline reconstruction of East Street. Minor additional permanent right-of-way parcels would be required for the tie-into Hill Street and Maple Street.

It is estimated that permanent right-of-way will be acquired from 19 parcels (0.91 ac.) Relocations will be necessary for 12 residential properties.

Traffic & Connectivity

East Street is an Urban Major Collector that connects City of Wabash in North-South direction. It carries a traffic volume of 427 vehicles per day (vpd) 2017 Average Annual Daily Traffic (AADT).

In the case of a stopped train event, traffic to this street would be increased. The local street, connective intersections, and traffic pattern would be analyzed and upgraded for this higher flow of traffic.

Project Purpose and Need Assessment

This alternative meets the purpose and need of the project is to improve the safety and mobility of the public by addressing the adverse effects of the current at grade crossings at the project location. By constructing a bridge to carry the motoring public and pedestrians over the railroad, their safety is greatly improved by reducing the potential for train, vehicle and pedestrian collisions while reducing emergency response times.

Feasibility

The project length for this alternative is lowest, minimizing the impact to the residents of City of Wabash. In addition, just one cross street (Maple Avenue) would need to be reconstructed. Impact to Historic and Cultural resources is minimized by tying in the project North of Hill Street (only 2 parcels are affected). Hill Street, a major East-West road that connects City of Wabash can remain open during construction which minimizes the impact to the residents of City of Wabash. Because this alternate removes an existing at-grade crossing, provides a grade separated crossing and both minimizes impacts to cultural and historic resources and minimizes the impact to the residents of City of Wabash, this alternative is feasible.

Comparison Cost Analysis

Opinions of probable cost are intended only to establish the preferred alternative. Costs shown are not intended to set an overall project construction budget. **This cost does not include items common to all estimates, such as preliminary engineering and utility relocation costs.**

Road and bridge construction costs	$4,236,300
Right of way costs	$1,019,200
TOTAL	**$5,255,500**

Construction cost, utility relocation, construction inspection and railroad cost will be established and refined at Stage 1 if alternative is selected.

Assumed Right of way costs are based on the following assumptions and are not intended to be used as final right of way costs.

1. Based on Assessed Property Value X 1.50 – Relocation properties
2. Land acquisition cost @ $1.75/ Square foot

7.6 ALTERNATIVE 6- WASHINGTON STREET OVER N&S RAILROAD

This Alternative requires reconstruction of Washington Street to pass over the railroad. Reconstruction of Hill Street and Elm Street is needed to tie into the elevated roadway at Washington Street. Plan and profile for this alternative is included in Appendix C.

Environmental Impacts

This alternative would adversely impact 2 parcels within the East Wabash Historic District, NR-1916. This alternative would permanently incorporate the East Wabash Historic District, NR-1916 into a transportation facility, potentially requiring an individual Section 4(f) evaluation.

For the most part, Washington Street within the proposed project limits is outside the historic district, hence the adverse impacts to the historic district is minimal compared to other alternatives that are being examined.
Research revealed no environmental sites of concern within the project area of Alternative 6. However, this alternative would impact Hanna Park, a Section 4(f) resource. Coordination with INDOT Environmental Services early in project development will be necessary to determine the level of 4(f) impact to the Park and the required associated documentation. Research of the Land and Water Conservation Fund Coalition website (https://www.lwcfcoalition.com/map-of-lwcf) did not identify Hanna Park as a resource protected by Section 6(f) of the U.S. Land and Water Conservation Fund Act of 1965.

R/W Impacts

Permanent right-of-way will be necessary for this alternative. It is estimated that permanent right-of-way or significant damages payments would need to be acquired from 24 parcels for the mainline reconstruction of Hill Street. Even considering the use of MSE walls, drives and access to many of these properties would be cut-off.

Traffic & Connectivity

Washington Street is an Urban Local Street that connects City of Wabash in North-South direction. Traffic counts for Washington Street is not available at this time. Currently, Washington Street has connectivity issues and needs to be extended straight to connect Hill Street and Walnut Street in order to accommodate traffic volume and meet the purpose of the project.

In the case of a stopped train event, traffic to this street would be increased. The local street, connective intersections, and traffic pattern would be analyzed and upgraded for this higher flow of traffic.

Project Purpose and Need Assessment

This alternative meets the purpose and need of the project is to improve the safety and mobility of the public by addressing the adverse effects of the current at grade crossings at the project location. By constructing a bridge to carry the motoring public and pedestrians over the railroad, their safety is greatly improved by reducing the potential for train, vehicle and pedestrian collisions while reducing emergency response times.

Feasibility

This alternative has the least impact on the historic district (1 parcel). However, this alternative has a high right of way impact (24 Parcels). Extending Washington Street increases the number of properties that needs to be fully acquired. In addition, it requires reconstruction of Hill Street (Major Collector) and Elm Street which would cause significant impact to the traffic operation in the City of Wabash. Because this alternate removes an existing at-grade crossing, provides a grade separated crossing and both minimizes impacts to cultural and historic resources and minimizes the impact to the residents of City of Wabash, this alternative is feasible.

Comparison Cost Analysis

Opinions of probable cost are intended only to establish the preferred alternative. Costs shown are not intended to set an overall project construction budget. **This cost does not include items common to all estimates, such as preliminary engineering and utility relocation costs.**

Road and bridge construction costs	*$5,512,050*
Right of way costs	*$894,300*
TOTAL	***$6,406,350***

Construction cost, utility relocation, construction inspection and railroad cost will be established and refined at Stage 1 if alternative is selected.

Assumed Right of way costs are based on the following assumptions and are not intended to be used as final right of way costs.

1. Based on Assessed Property Value X 1.50 – Relocation properties

2. Land acquisition cost @ $1.75/ Square foot

7.7 ALTERNATIVE 7- DO NOTHING

This alternative would allow the existing roadway and crossings to remain in place with no improvements, which will result in continued at grade crossings and blocked emergency vehicles. This alternative does not meet the need nor achieves the purpose of the project.

Alternative	Functional Classification	Project Length (ft.)	Number of ROW parcels impacted	Number of ROW parcels in Historic District affected	Number of Cross Streets that needs to be reconstructed	Advantages	Disadvantages
1. Wabash Street	Minor Arterial	1705	43	2	5	Major roadway, fewer number of parcels in historic district affected.	High project length, large number of ROW parcels impacted, high number of cross streets need to be reconstructed
2. Huntington Street	Local	1042	18	18	3	Fewer number of ROW parcels affected.	Significant impact on parcels in historic district.
3. Allen Street	Major Collector	1278	19	17	4	Major roadway with high traffic volume	High project length
4. Spring Street	Local	1040	16	10	3	Less number of ROW parcels affected	Significant impact on parcels in historic district, Closing Spring Street & Hill Street intersection would cause significant impacts to the traffic operations.
5. East Street (Recommended)	Major Collector	865	19	3	1	Low project length, low impact on parcels in historic district, only one cross street (Maple Ave) needs to be reconstructed.	Impact on parcels in historic district
6. Washington Street	Local	1380	24	1	2	Minimal impact on parcels in historic district.	High project length, additional construction of non-existing roadway required.

8 PREFERRED ALTERNATIVE

East Street is recommended as the preferred alternative as meets the stated project purpose and need. A plan and profile for this alternative is included in Appendix C.

8.1 EAST STREET – DESIGN CRITERIA

8.1.1 ROAD CLASSIFICATION

East Street is classified as a major collector. The posted speed limit at the project location is 30 mph throughout the project limits. Maple Street is classified as a local street and has a posted speed of 30 mph throughout the project limits.

8.1.2 ROADWAY ALIGNMENTS

The existing roadway along East Street consists of two 11'-0" travel lanes, and one 8'-0" parking lane for a roadway width of approximately 32'-6". The entire section has curb and gutter and sidewalk on both sides. The existing roadway along Maple Street consists of one 13'-0" travel lane and two 7'-0" wide parking lanes for a roadway width of approximately 28'-0". The entire section has curb and gutter and sidewalk on both sides.

Roadway Information – East Street			
Geometric Criteria			
Design Speed	30 mph	**Functional Class**	Major Collector
Design Criteria	New Construction/ Reconstruction (Urban Collector)	**Rural/Urban**	Urban (Built-Up)
Terrain	Level	**Access Control**	None
Approach Cross Section			
IDM Figure Reference	IDM 53-8		
Travel Lane Count	2	**Travel Lane Width**	11'-0" (existing) 11'-0" (proposed)
Shoulder Width (Usable)	N/A	**Shoulder Width (Paved)**	N/A
Mainline Pavement	Asphalt/Concrete	**Shoulder Pavement**	N/A
Alignment			
Horizontal	Tangent	**Vertical**	Series of Sag/Crest Curves to obtain clearance over the railroad

Roadway Information – Maple Street			
Geometric Criteria			
Design Speed	30 mph	**Functional Class**	Local Street
Design Criteria	New Construction/ Reconstruction (Local Street)	**Rural/Urban**	Urban
Terrain	Level	**Access Control**	None
Approach Cross Section			
IDM Figure Reference	IDM 53-9		
Travel Lane Count	1 (Existing) 2 (Proposed)	**Travel Lane Width**	13'-0" (existing) 11'-0" (proposed)
Shoulder Width (Usable)	N/A	**Shoulder Width (Paved)**	N/A
Mainline Pavement	HMA	**Shoulder Pavement**	N/A
Alignment			
Horizontal	Tangent	**Vertical**	Series of Sag/Crest Curves.

8.2 TRAFFIC DATA AND ANALYSIS

A traffic study and capacity analysis was performed by American Structurepoint for a Grade Separation Feasibility Study at the East Street Crossing.

The following recommendation was made per the report: "Based upon the traffic analysis, the intersections along N East Street at E Hill Street and at E Maple Street are anticipated to operate at an acceptable LOS during a standard short duration train event, which will not require significant traffic to divert from Wabash Street. During an occasional stopped train event, it is anticipated that the existing roadway network would become heavily congested while Wabash Street traffic diverts to East Street.

If the stopped train events become more frequent in the future, a roundabout or signal should be considered at both the Hill Street and Maple Street intersections. This study should be monitored in the future as intersection traffic volumes increase. Due to stopped train event traffic redistribution, additional improvements maybe required."

8.3 MAINTENANCE OF TRAFFIC

East Street will be closed during the construction of this project. The traffic can be detoured to Hill Street, Elm Street and Wabash Street. Detour routes will be selected with the approval of the City to minimize the duration, distance, and traffic volume impact of the detour routes.

Maple Street construction will be staged so local access can be maintained while the majority of East Street is constructed. Access will need to be maintained to local residential properties during construction as part of the design of the project.

8.4 SURVEY REQUIREMENTS

Along the centerline of East Street, 1400’ of survey with 200’ width should be obtained. Along the centerline of Maple Street, 500’ of survey with 150’ width should be obtained. This is necessary to cover both the proposed vertical and horizontal alignments. Proposed survey limits are shown below:

8.5 RIGHT-OF-WAY IMPACT

It is estimated that permanent right-of-way will need to be acquired from approximately 19 parcels (0.91 ac.) Relocations may be necessary for approximately 12 residential properties.

8.6 RAILROAD IMPACT/ COORDINATION

Coordination efforts are ongoing to determine if Norfolk Southern Railroad has any plans to expand or add additional rail which could impact the scope of this project.

8.7 UTILITY IMPACT

Overhead utilities include electric power lines and cable television lines. Underground utilities include gas lines, water mains, sanitary sewers, storm sewers, and telecommunication cables. Each utility company must be coordinated with to determine the exact location of its facilities. The project will be designed in such a way as to minimize impacts to utilities as much as possible to avoid or reduce costly relocations. Impacts to utilities maybe significant given the nature of the work proposed.

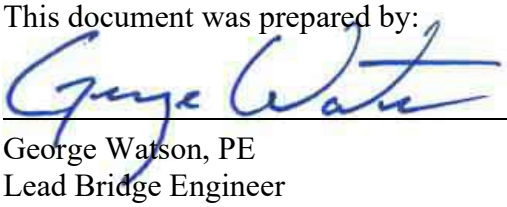
8.8 COORDINATION, MEETINGS

There has been no stakeholder engagement as a part of the engineering assessment phase. However, as design progresses, a public involvement plan will be developed to satisfy the requirements of NEPA and to ensure that the stakeholder input is received and evaluated.

9 CONCURRENCE

The purpose of this report is to document the engineering assessment phase of a railroad grade separation in the City of Wabash over the Norfolk Southern railroad. Based upon the information compiled in this report, East Road overpass alternative is the preferred alternative.

This document was prepared by:



_____ 11/15/2019

George Watson, PE
Lead Bridge Engineer

Reviewed by:

Project Management Reviewer

_____ [Date]

[Name]
[Title]
Recommend: APPROVAL / DISAPPROVAL

INDOT LPA Programs Concurrence

_____ [Date]

[Name]
[Title]
Recommend: APPROVAL / DISAPPROVAL

INDOT LPA Engineering Concurrence:

_____ [Date]

[Name]
Systems Asset Manager, [District]
Recommend: APPROVAL/ DISAPPROVAL

ROW amounts were updated during the design process. This project will acquire 1.898 acre of land, of which 1.16 acres will be incorporated as new, permanent ROW and 0.738 acres will become excess land. 0.055 acre of temporary ROW will be acquired. This change in ROW does not impact the outcome of this EJ Analysis.

Wabash East Street Railroad Grade Separation, City of Wabash, Wabash County, Indiana
Des. No. 1801915

Project Description

The proposed undertaking is on East Street extending north to Maple Street and south to Hill Street in Wabash, Wabash County. It is within Noble Township, USGS Wabash Topographic Quadrangle in Section 11, Township 27 North, Range 6 East.

East Street consists of two 11-foot-wide lanes and one 8-foot-wide parking lane for a roadway width of approximately 32'6". The entire section of the proposed project area has existing curb and gutter on both sides of the roadway. The existing roadway along Maple Street consists of one 13'-0" travel lane and two 7'-0" wide parking lanes for a roadway width of approximately 28'-0". The entire section has curb and gutter and sidewalk on both sides.

The proposed project involves the reconstruction of East Street with new bridge construction with MSE walls to pass over the railroad beginning at the intersection with Hill Street and ending just north of Maple Street.

It is anticipated that approximately 1.21 acre of right of way acquisition is anticipated from 16 residential parcels and a total of 10 of those properties are proposed to be relocated as a result of the proposed project. No businesses will be relocated. Letting is scheduled for March 15, 2023.

EJ Analysis

Under FHWA Order 6640.23A, FHWA and the project sponsor, as a recipient of funding from FHWA, are responsible to ensure that their programs, policies, and activities do not have a disproportionately high and adverse effect on minority or low-income populations. Per the current INDOT Categorical Exclusion Manual, an Environmental Justice (EJ) Analysis is required for any project that has two or more relocations or 0.5 acre of additional permanent right-of-way. The project will require approximately 1.21 acre of permanent right-of-way and 10 relocations. No businesses will be relocated. Therefore, an EJ Analysis is required.

Potential EJ impacts are detected by locating minority and low-income populations relative to a reference population to determine if populations of EJ concern exists and whether there could be disproportionately high and adverse impacts to them. The reference population may be a county, city or town and is called the community of comparison (COC). In this project, the COC is Noble Township in Wabash County. The community that overlaps the project area is called the affected community (AC). In this project, the AC is the City of Wabash. An AC has a population of concern for EJ if the population is more than 50% minority or low-income or if the low-income or minority population is 125% of the COC. Data from the 2015 American Community Survey (ACS) 5-year estimates was obtained from the US Census Bureau Website https://data.census.gov/cedsci/advanced on August 9, 2021 by SJCA Inc. The data collected for minority and low-income populations within the AC are summarized in the below table:

	COC – Noble Township, Wabash Co., Indiana	AC – City of Wabash, Wabash Co., Indiana
Percent Minority	4.4%	4.5%
125% of COC	5.5%	AC < 125% COC
EJ Population of Concern		No
Percent Low-Income	16.6%	18.3%
125% of COC	20.8 %	AC < 125% COC
EJ Population of Concern		No

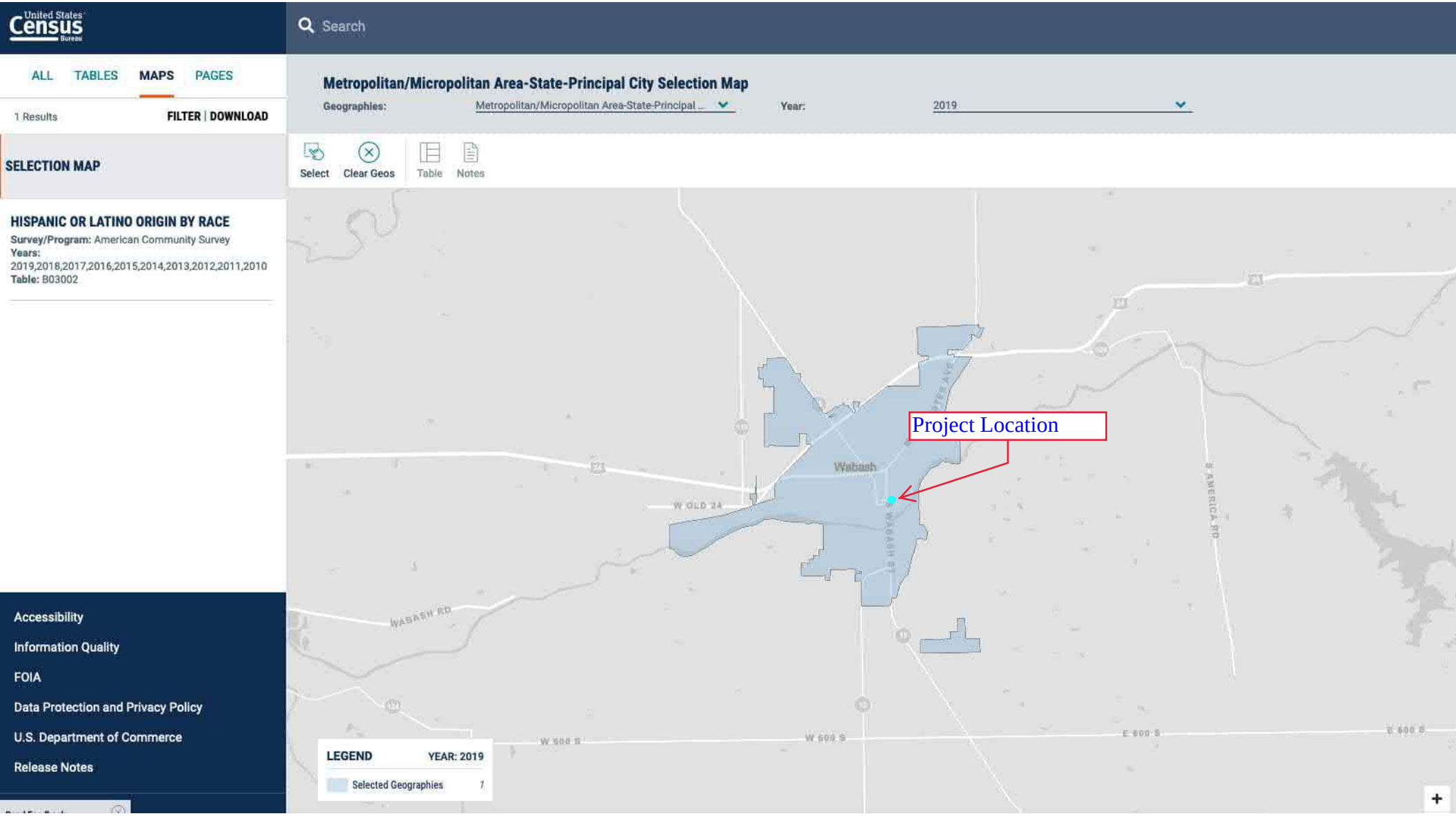
The AC, the City of Wabash, has a percent minority of 4.5% which is below 50% and is below the 125% COC threshold. Therefore, the AC does not contain minority populations of EJ concern.

The AC, the City of Wabash, has a percent low-income of 18.3% which is below 50% and is below the 125% COC threshold. Therefore, the AC does not contain low-income populations of EJ concern.

The project will provide community-wide impacts in the form of a bridge crossing over the Norfolk Sothern Railroad that improves mobility by addressing the access issues of the current at-grade crossing at the project location. The railroad tracks divide the city of Wabash and all crossings are at-grade. When trains stop on the tracks within the City, no traffic can travel to the other side of the tracks, including emergency services such as police, fire, and ambulatory. Thus, access to the one hospital in the City, Parkview Wabash Hospital on the north side of the City, is blocked until the train has moved and crossings open again.

Environmental Justice Analysis for Wabash Local Trax Project (Des. 1801915)

		COC Noble Township, Wabash County, Indiana	AC1 City of Wabash, Indiana (Metropolitan/Micropolitan Area-State-Principal City)
	LOW-INCOME		
B 17001001	Population for whom poverty status is determined: Total	13,384	10,050
B 17001002	Population for whom poverty status is determined:Income in past 12 months below poverty	2,224	1,837
	Percent Low-Income	**16.6%**	**18.3%**
	125 Percent of COC	**20.8%**	**AC<125% COC**
	Potential Low-Income EJ Impact?		**No**
	MINORITY		
B 03002001	Total population: Total	13,988	10,469
B 03002002	Total population: Not Hispanic or Latino	13,779	10,307
B 03002003	Total population: Not Hispanic or Latino; White alone	13,376	9,999
B 03002004	Total population: Not Hispanic or Latino; Black or African American alone	81	48
B 03002005	Total population: Not Hispanic or Latino; American Indian and Alaska Native alone	89	53
B 03002006	Total population: Not Hispanic or Latino; Asian alone	75	49
B 03002007	Total population: Not Hispanic or Latino; Native Hawaiian and Other Pacific Islander alone	0	0
B 03002008	Total population: Not Hispanic or Latino; Some other race alone	17	17
B 03002009	Total population: Not Hispanic or Latino; Two or more races	141	141
B 03002010	Total population: Hispanic or Latino	209	162
B 03002011	Total population: Hispanic or Latino; White alone	118	89
B 03002012	Total population: Hispanic or Latino; Black or African American alone	0	0
B 03002013	Total population: Hispanic or Latino; American Indian and Alaska Native alone	0	0
B 03002014	Total population: Hispanic or Latino; Asian alone	0	0
B 03002015	Total population: Hispanic or Latino; Native Hawaiian and Other Pacific Islander alone	0	0
B 03002016	Total population: Hispanic or Latino; Some other race alone	86	68
B 03002017	Total population: Hispanic or Latino; Two or more races	5	5
	Number Non-White/Minority (P007001-P007003)	**612**	**470**
	Percent Non-White/Minority	**4.4%**	**4.5%**
	125 Percent of COC	**5.5%**	**AC<125% COC**
	Potential Minority EJ Impact?		**No**


United States Census Bureau
Search
ALL
TABLES
MAPS
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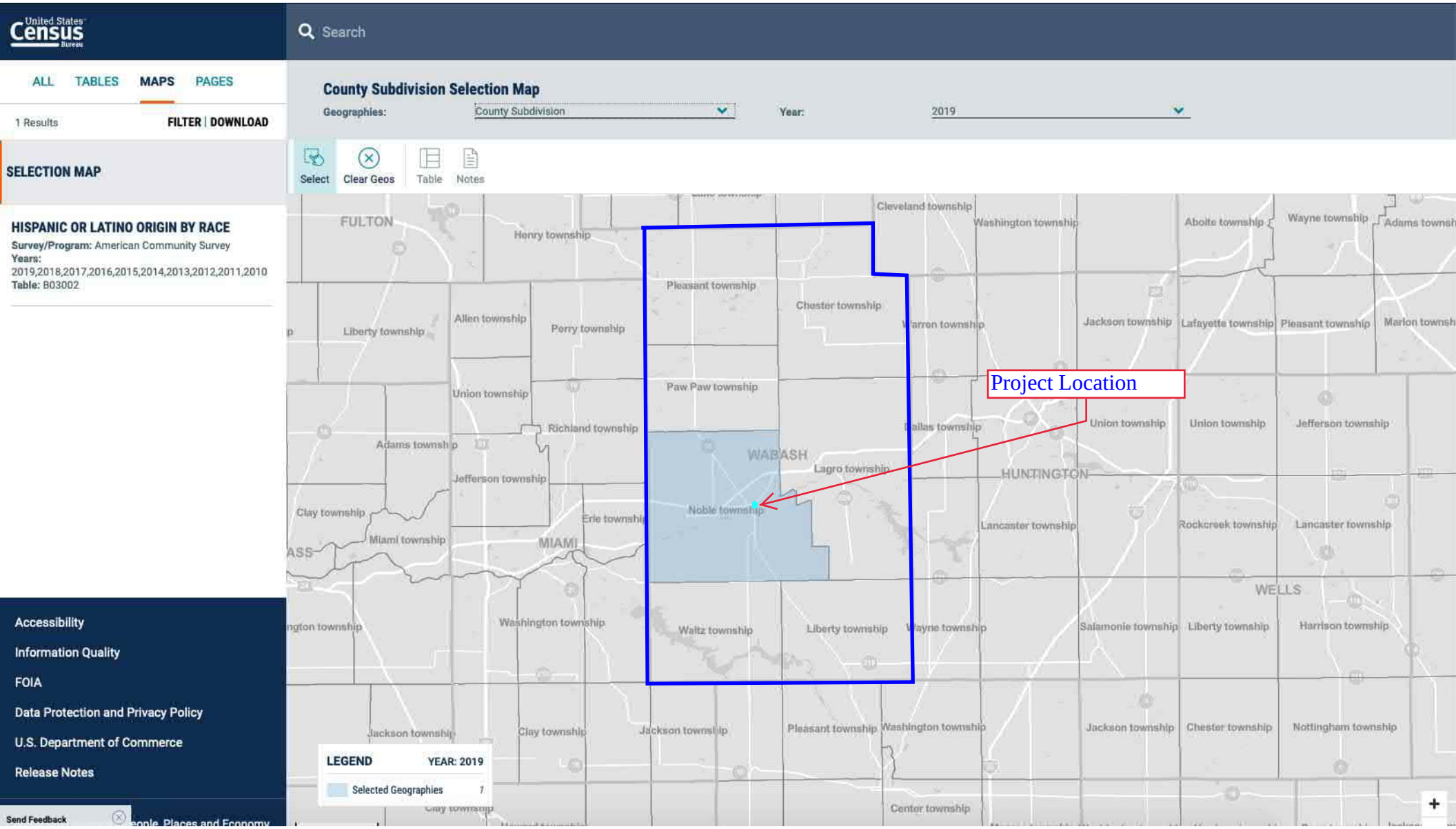
1 Results
FILTER | DOWNLOAD
SELECTION MAP
HISPANIC OR LATINO ORIGIN BY RACE
Survey/Program: American Community Survey
Years: 2019,2018,2017,2016,2015,2014,2013,2012,2011,2010
Table: B03002
Accessibility
Information Quality
FOIA
Data Protection and Privacy Policy
U.S. Department of Commerce
Release Notes
Metropolitan/Micropolitan Area-State-Principal City Selection Map
Geographies:
Metropolitan/Micropolitan Area-State-Principal ...
Year:
2019
Select
Clear Geos
Table
Notes
Project Location
Wabash
W OLD 24
WABASH RD
W 500 S
E 600 S
LEGEND
YEAR: 2019
Selected Geographies
1



County Boundaries

POVERTY STATUS IN THE PAST 12 MONTHS BY SEX BY AGE

Survey/Program: American Community Survey

TableID: B17001

Product: 2015: ACS 5-Year Estimates Detailed Tables

Universe: Population for whom poverty status is determined

CUSTOMIZE TABLE

	Noble township, Wabash County, Indiana		Wabash city, IN; Wabash, IN Micro Area	
Label	Estimate	Margin of Error	Estimate	Margin of Error
Total:	13,384	±250	10,050	±162
Income in the past 12 months below poverty level:	2,224	±412	1,837	±343
Male:	899	±214	703	±184
Under 5 years	135	±73	97	±64
5 years	22	±20	22	±20
6 to 11 years	131	±86	112	±83
12 to 14 years	24	±29	24	±29
15 years	6	±11	6	±11
16 and 17 years	61	±47	35	±30
18 to 24 years	83	±49	83	±49
25 to 34 years	175	±78	161	±80
35 to 44 years	14	±19	14	±19
45 to 54 years	109	±55	79	±45
55 to 64 years	46	±45	16	±17
65 to 74 years	59	±49	20	±18
75 years and over	34	±29	34	±29
Female:	1,325	±262	1,134	±228
Under 5 years	151	±89	151	±89
5 years	65	±45	35	±31
6 to 11 years	141	±76	122	±68
12 to 14 years	62	±45	62	±45
15 years	22	±26	22	±26
16 and 17 years	44	±38	28	±29
18 to 24 years	203	±82	182	±86

Columns | Cell/Column Notes

POVERTY STATUS IN THE PAST 12 MONTHS BY SEX BY AGE

Survey/Program: American Community Survey

TableID: B17001

Product: 2015: ACS 5-Year Estimates Detailed Tables

Universe: Population for whom poverty status is determined

CUSTOMIZE TABLE

	Noble township, Wabash County, Indiana		Wabash city, IN; Wabash, IN Micro Area	
Label	Estimate	Margin of Error	Estimate	Margin of Error
25 to 34 years	140	±62	129	±61
35 to 44 years	194	±82	148	±66
45 to 54 years	127	±64	112	±59
55 to 64 years	62	±54	62	±54
65 to 74 years	55	±34	44	±29
75 years and over	59	±41	37	±29
Income in the past 12 months at or above poverty level:	11,160	±421	8,213	±385
Male:	5,555	±266	4,003	±231
Under 5 years	234	±62	223	±61
5 years	58	±36	45	±32
6 to 11 years	308	±85	254	±76
12 to 14 years	144	±63	98	±60
15 years	27	±28	12	±15
16 and 17 years	137	±60	108	±55
18 to 24 years	427	±92	345	±84
25 to 34 years	609	±117	479	±106
35 to 44 years	727	±114	620	±103
45 to 54 years	870	±132	549	±101
55 to 64 years	918	±177	529	±129
65 to 74 years	646	±91	432	±85
75 years and over	450	±87	309	±71
Female:	5,605	±290	4,210	±240
Under 5 years	219	±75	169	±68
5 years	105	±59	89	±55

Columns | Cell/Column Notes

POVERTY STATUS IN THE PAST 12 MONTHS BY SEX BY AGE

Survey/Program: American Community Survey

TableID: B17001

Product: 2015: ACS 5-Year Estimates Detailed Tables

Universe: Population for whom poverty status is determined

CUSTOMIZE TABLE

	Noble township, Wabash County, Indiana		Wabash city, IN; Wabash, IN Micro Area	
Label	Estimate	Margin of Error	Estimate	Margin of Error
12 to 14 years	144	±63	98	±60
15 years	27	±28	12	±15
16 and 17 years	137	±60	108	±55
18 to 24 years	427	±92	345	±84
25 to 34 years	609	±117	479	±106
35 to 44 years	727	±114	620	±103
45 to 54 years	870	±132	549	±101
55 to 64 years	918	±177	529	±129
65 to 74 years	646	±91	432	±85
75 years and over	450	±87	309	±71
Female:	5,605	±290	4,210	±240
Under 5 years	219	±75	169	±68
5 years	105	±59	89	±55
6 to 11 years	227	±78	197	±76
12 to 14 years	221	±73	175	±61
15 years	18	±19	18	±19
16 and 17 years	132	±52	115	±52
18 to 24 years	315	±83	264	±76
25 to 34 years	517	±98	441	±89
35 to 44 years	661	±104	514	±88
45 to 54 years	829	±136	630	±116
55 to 64 years	918	±121	608	±107
65 to 74 years	751	±117	498	±96
75 years and over	692	±123	492	±107

Columns | Cell/Column Notes

HISPANIC OR LATINO ORIGIN BY RACE

Survey/Program: American Community Survey

TableID: B03002

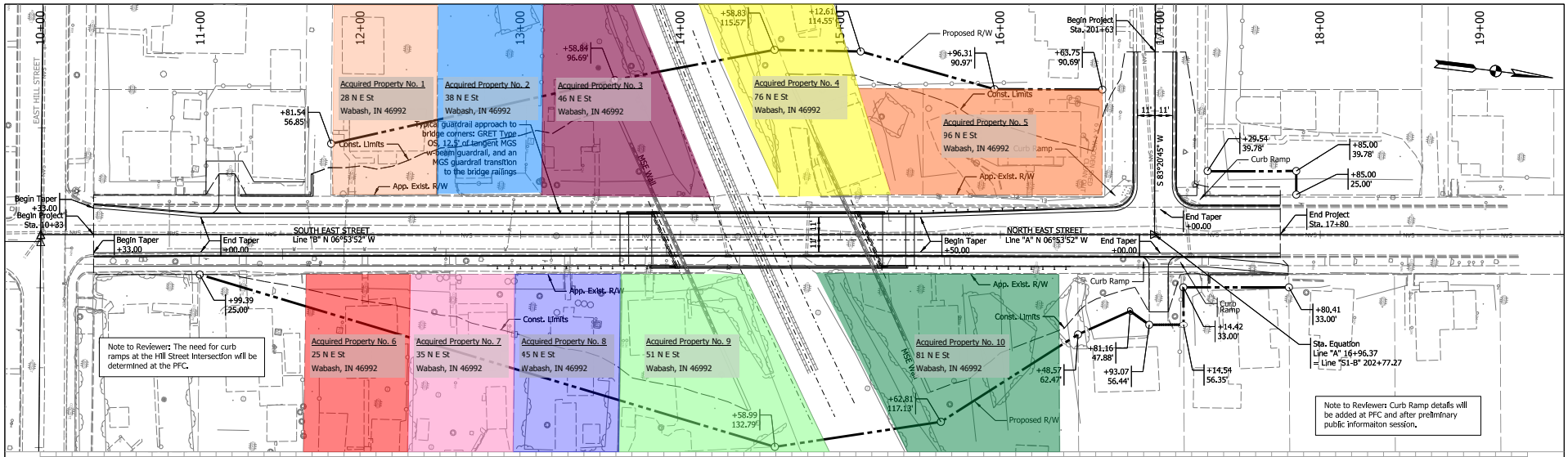
Product: 2015: ACS 5-Year Estimates Detailed Tables

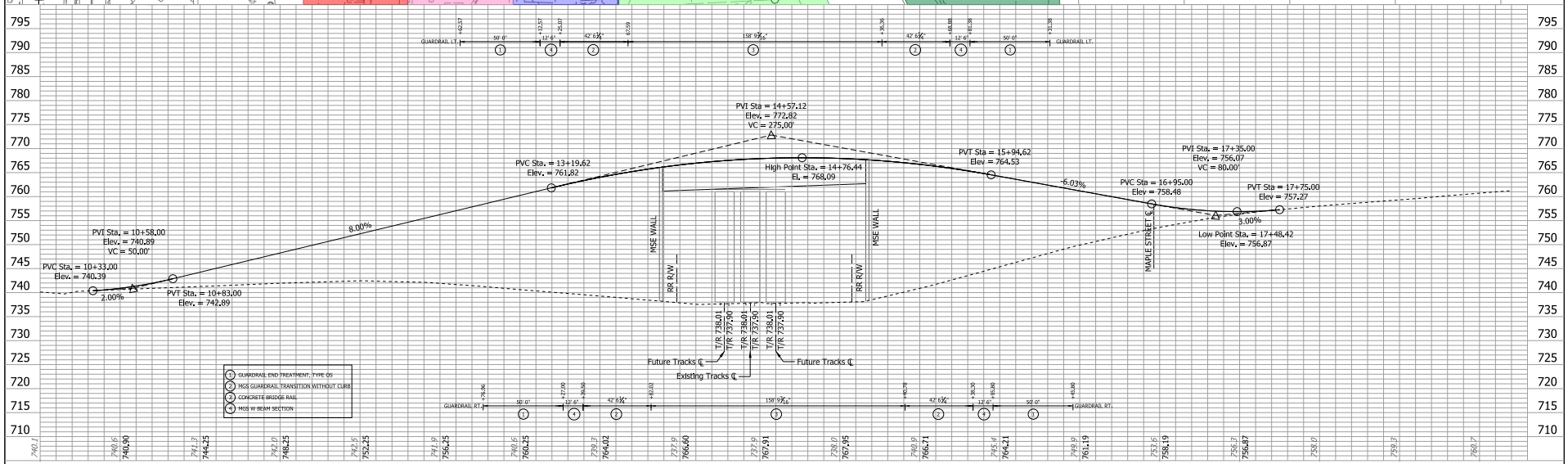
Universe: Total population

CUSTOMIZE TABLE

	Noble township, Wabash County, Indiana		Wabash city, IN; Wabash, IN Micro Area	
Label	Estimate	Margin of Error	Estimate	Margin of Error
Total:	13,988	±23	10,469	±30
Not Hispanic or Latino:	13,779	±151	10,307	±120
White alone	13,376	±227	9,999	±181
Black or African American alone	81	±71	48	±65
American Indian and Alaska Native alone	89	±50	53	±41
Asian alone	75	±67	49	±54
Native Hawaiian and Other Pacific Islander alone	0	±18	0	±18
Some other race alone	17	±30	17	±30
Two or more races:	141	±86	141	±86
Two races including Some other race	0	±18	0	±18
Two races excluding Some other race, and three or more races	141	±86	141	±86
Hispanic or Latino:	209	±152	162	±124
White alone	118	±93	89	±83
Black or African American alone	0	±18	0	±18
American Indian and Alaska Native alone	0	±18	0	±18
Asian alone	0	±18	0	±18
Native Hawaiian and Other Pacific Islander alone	0	±18	0	±18
Some other race alone	86	±120	68	±100
Two or more races:	5	±9	5	±9
Two races including Some other race	0	±18	0	±18
Two races excluding Some other race, and three or more races	5	±9	5	±9

Columns | Cell/Column Notes





Note to Reviewer: Reference Ties have been requested and will be provided at the next submission.

RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER DATE

DESIGNED: KMC | DRAWN: DDE

CHECKED: JOD | CHECKED: JOD

INDIANA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE
LINE "B"

HORIZONTAL SCALE	BRIDGE FILE
1"=30'	TBD
VERTICAL SCALE	DESIGNATION
1"=10'	1801915
SURVEY BOOK	SHEETS
	4 of 16
CONTRACT	PROJECT
B-41854	1801915

FW: EJ Analysis question- Wabash Local Trax Des 1801915

Fair, Terri <TFair@indot.IN.gov>
Wed 9/8/2021 3:21 PM
To: Erin Mulryan <emulryan@sjcainc.com>

From: Bales, Ronald <rbales@indot.IN.gov>
Sent: Wednesday, September 8, 2021 3:02 PM
To: Fair, Terri <TFair@indot.IN.gov>
Subject: RE: EJ Analysis question- Wabash Local Trax Des 1801915

No, that should be sufficient.

Ron Bales
INDOT-Environmental Services Division
Office: (317) 515-7908
Email: rbales@indot.in.gov

From: Fair, Terri <TFair@indot.IN.gov>
Sent: Wednesday, September 8, 2021 2:11 PM
To: Bales, Ronald <rbales@indot.IN.gov>
Subject: FW: EJ Analysis question- Wabash Local Trax Des 1801915

Ron,

I checked the project website and copied the ROW Q&A info below. Do they need to do anything else?

Will this project be constructed in existing right of way, or will you need to purchase land? This project will impact many property owners and land will need to be acquired before construction can begin.

How much land might need to be purchased? While design is preliminary and impacts to specific properties have not yet been identified, up to 2.3 acres may need to be acquired. Specific impacts to property will not be identified until later in the environmental study.

Does this project affect residences and businesses? No, at this point, only residential properties will be impacted by this project.

How will the diminishing values of the homes around the overpass be compensated? Impacts to properties will be evaluated throughout the project development process.

If a property may be impacted, should owners delay plans for

improvements to their home? Because design is preliminary, specific impacts to properties have not yet been identified.

From: Erin Mulryan <emulryan@sjcainc.com>
Sent: Tuesday, September 7, 2021 9:57 AM
To: Fair, Terri <TFair@indot.IN.gov>
Subject: Re: EJ Analysis question- Wabash Local Trax Des 1801915

Hi Terri, I hope you had a great weekend. I have attached the designer's response regarding the public involvement plan. Two public opportunities have been completed and 2 more are planned. Please let me know if you need any additional information. Thanks!

Erin Mulryan
Director of Environmental Services

SJCA Inc.
1028 Virginia Ave, Suite 201 & 203
Indianapolis, IN 46203

Tel: 317-566-0629 | Mobile: 317-525-1192

From: "Fair, Terri" <TFair@indot.IN.gov>
Date: Friday, August 27, 2021 at 1:03 PM
To: Erin Mulryan <emulryan@sjcainc.com>
Subject: FW: EJ Analysis question- Wabash Local Trax Des 1801915

Hi Erin,

Please see Ron's email below and advise.

Best,
Terri

From: Bales, Ronald <rbales@indot.IN.gov>
Sent: Thursday, August 26, 2021 4:07 PM
To: Fair, Terri <TFair@indot.IN.gov>
Cc: Miller, Brandon <BraMiller1@indot.IN.gov>
Subject: RE: EJ Analysis question- Wabash Local Trax Des 1801915

Although demographic analysis did not show any elevated EJ populations of concern, public engagement should occur for the project to allow for the community to comment and self-identification of a population of concern through those venues.

Would inquire if a public involvement plan has been development for this project i.e. public open house, public information meeting in advance of the opportunity for public hearing/public hearing?

Ron Bales

INDOT-Environmental Services Division
Office: (317) 515-7908
Email: rbales@indot.in.gov

From: Fair, Terri <TFair@indot.IN.gov>
Sent: Thursday, August 26, 2021 2:51 PM
To: Bales, Ronald <rbales@indot.IN.gov>
Cc: Miller, Brandon <BraMiller1@indot.IN.gov>
Subject: FW: EJ Analysis question- Wabash Local Trax Des 1801915

I closed the Milestone on this. Anything further?

There is no EJ population. However, there are 10 relocations. I copied relevant text below:
It is anticipated that approximately 1.21 acre of right of way acquisition is anticipated from 16 residential parcels and a total of 10 of those properties are proposed to be relocated as a result of the proposed project. No businesses will be relocated. Letting is scheduled for March 15, 2023.

From: Erin Mulryan <emulryan@sjcainc.com>
Sent: Thursday, August 26, 2021 8:54 AM
To: Fair, Terri <TFair@indot.IN.gov>
Subject: Re: EJ Analysis question- Wabash Local Trax Des 1801915

Hi Terri, attached is the complete analysis with a plan sheet of the relocations. There were no EJ populations but I am sending for further guidance regarding whether any additional studies need to be conducted. Let me know if you need any additional information. Thanks!

Erin Mulryan
Director of Environmental Services

SJCA Inc.
1104 Prospect Street
Indianapolis, IN 46203

Tel: 317-566-0629 | Mobile: 317-525-1192

This email has been scanned for spam and viruses by Proofpoint Essentials. Click here to report this email as spam.

Noise Analysis Report

East Street Grade Separation
at Norfolk Southern Railroad Tracks
Des. No. 1801915

Wabash County, IN

Prepared for:

WSP USA Inc., City of Wabash and
Indiana Department of Transportation

Prepared by:

Hanson Professional Services Inc.
6510 Telecom Drive, Ste. 210
Indianapolis, IN 46278

Ali Whitehead, Civil Designer
Elizabeth Safranski, Traffic Modeler
December 27, 2022

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Appendix C – Sound Level Meter Calibration Certificates
Appendix D – Predicted Noise Levels
Appendix E – Traffic Data

Executive Summary

This traffic noise analysis report evaluates the traffic noise levels and potential impacts associated with the proposed roadway improvements of the East Street Grade Separation project from Hill Street to north of Maple Street in Wabash, Wabash County, Indiana. This noise analysis was prepared in accordance with the Federal Highway Administration's (FHWA's) *Highway Traffic Noise: Analysis and Abatement Guidance* (December 2011) and the Indiana Department of Transportation (INDOT's) *Traffic Noise Analysis Procedure* (July 1, 2017).

The existing year (2023) noise levels and the design year (2043) noise levels were predicted using FHWA's Traffic Noise Model (TNM) Version 2.5. The traffic noise model was validated by taking ambient noise measurements at 10 sites within the noise study area. All site locations were within the acceptable range of the modeled existing noise level results except for R4, R7, R11, and R14. The modeled noise level at R4 was 4.8 dB(A) under the measured noise level, which is likely attributed to lawn equipment being used during the measurement period. The modeled noise level at R7 was 5.4 dB(A) under the measured noise level and R11 was 10.1 dB(A) under the measured noise level, which are both likely attributed to a train passing through during the measurement period. The modeled noise level at R14 was 5.6 dB(A) under the measured noise level, which is likely attributed to an air conditioning unit operating during the measurement period.

A total of 17 Common Noise Environments (CNEs) were identified in the 500-foot buffer of the project area. These CNEs include activity categories B and C for residential areas and a park. A total of 131 receptors were modeled for existing 2023 conditions and build 2043 conditions.

It was found that none of the 131 receptors were approaching/exceeding the NAC in 2043. An abatement analysis is therefore not warranted.

1.0 Introduction

This traffic noise study report was prepared in conjunction with the environmental document for the proposed East Street Grade Separation project from Hill Street to north of Maple Street in Wabash, Wabash County, Indiana (Des. No. 1801915). This report documents the findings of noise analyses performed for the proposed roadway improvements. The following sections provide a description of the project and existing land use, a background of noise and applicable regulations, noise receptor selection and field monitoring, noise analysis methodology and modeling results, and analysis of abatement measures, construction noise, and coordination with local government officials for undeveloped lands.

1.1 Purpose of Analysis

The purpose of this noise analysis is to assess existing and future traffic noise levels associated with the East Street Grade Separation project, identify impacted receptors within common noise environments (CNEs), and evaluate potential abatement measures for feasibility and reasonableness if impacted receptors are present. The analysis was performed in accordance with the current INDOT's *Traffic Noise Analysis Procedure* (July 1, 2017).

1.2 Project Description

This project involves the reconstruction of East Street with a new bridge construction over the Norfolk Southern Railroad (NSRR) tracks beginning at the intersection with Hill Street and ending just north of Maple Street on the east side of the city of Wabash, Wabash County, Indiana (see Figure 1). This project is located in Section 11 of Township 27 North, Range 6 East, on the Wabash U.S. Geological Survey 7.5-Minute Quadrangle. The purpose of the project is to improve safety and mobility by addressing the adverse effects of the current at-grade crossings in the city of Wabash. By constructing a bridge to carry the motorists and pedestrians over the railroad, safety is greatly improved by reducing the potential for train, vehicle and pedestrian collisions while simultaneously providing unobstructed north-south access, and reducing delays in emergency response times.

1.2.1 Existing Road Conditions

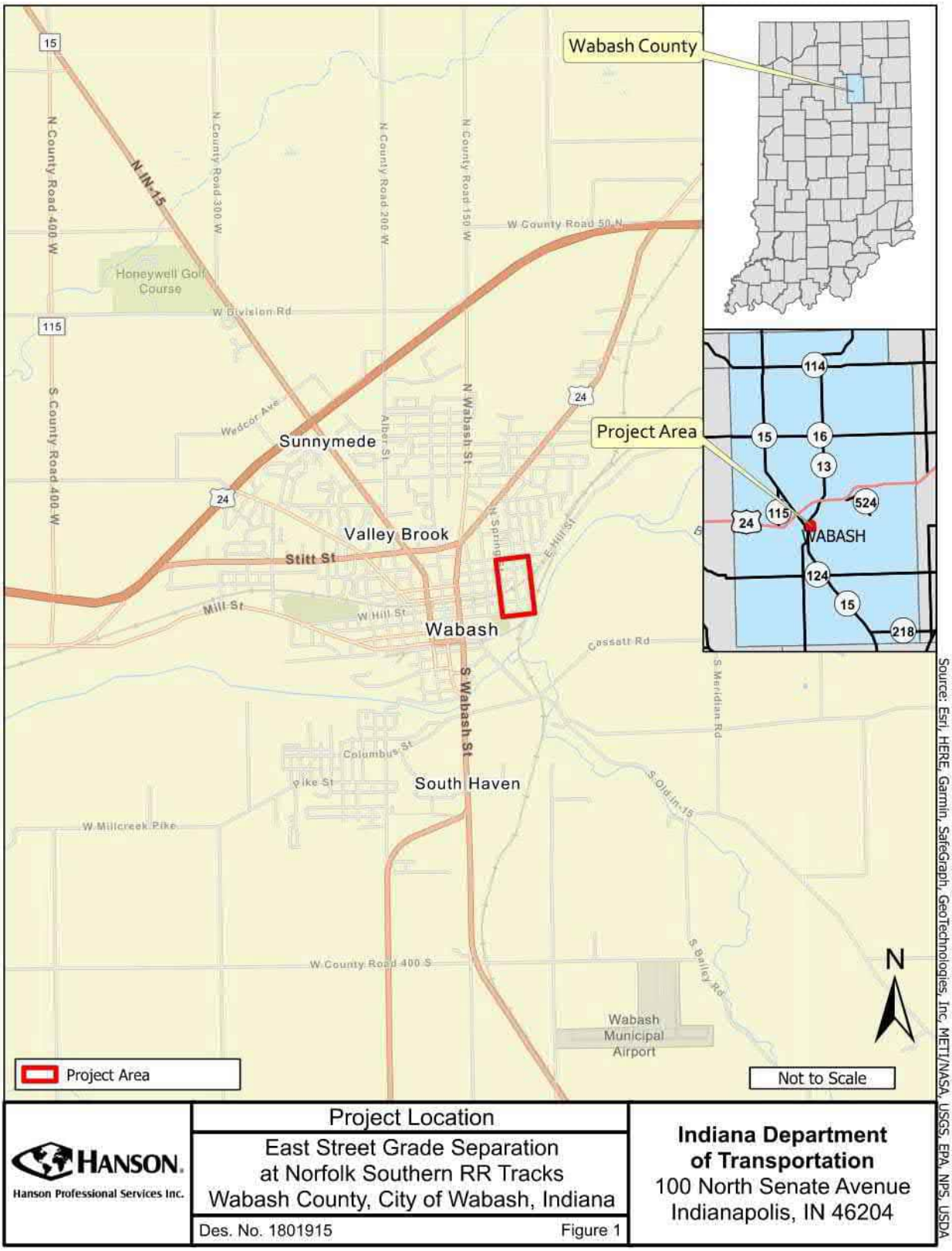
East Street consists of two 11-foot-wide lanes and one 8-foot-wide parking lane for a roadway width of approximately 32.5 feet. The existing roadway along Maple Street consists of one 13-foot travel lane and two 7-foot-wide parking lanes for a roadway width of approximately 28 feet. The entire section of the project area has curb and gutter and sidewalk on both sides of the roadway.

1.2.2 Proposed Road Improvements

The proposed project involves the reconstruction of East Street with new bridge construction with Mechanically Stabilized Earth (MSE) walls to pass over the railroad beginning at the intersection with Hill Street and ending just north of Maple Street. It is anticipated that approximately 1.21 acres of right of way acquisition is anticipated from 16 residential parcels and a total of 10 of those properties are proposed to be relocated as a result of the proposed project. No businesses will be relocated. Federal, state-funded Local Trax grant and local funds will be used to fund the proposed improvements.

ROW amounts were updated during the design process. This project will acquire 1.898 acre of permanent ROW and 0.055 acre of temporary ROW.

Figure 1 Project Location



2.0 Noise Background and Regulations

2.1 Noise Background

Sound intensity is measured in decibels (dB). Decibels are measured on a logarithmic scale. This means that, for a given 10 dB increase in the decibel level, the sound intensity increases by a factor of 10. The human ear generally perceives a 10 dB increase as a doubling of the sound level. The smallest increase or decrease in sound levels generally perceived by the human ear is considered to be about three dB.

A given noise produces sound in a number of different frequencies; many of these are outside the normal perception range of the human ear. The A-weighted scale of frequencies generally approximates the range of frequencies normally detected by the human ear.

All references to noise level values for this project are stated as an equivalent A-weighted sound level (L_{eq} dB(A)). The L_{eq} descriptor A-weighting is the generally accepted representation in decibels of the range of human hearing and its response to varying frequencies and loudness of traffic noise. The L_{eq} dB(A) is a single number indicator used to describe the mean energy or intensity level over a specified period of time during which the sound level fluctuated. Because the L_{eq} dB(A) is not influenced by the variability of the noise-time pattern, it is an effective way to compare or combine noises with differing time histories.

Highway noise generation is dependent on three main factors: traffic volume, traffic speed, and the number of trucks within the traffic. Each of these varies at any given moment. Highway noise is generated by a line of vehicles closely spaced. This gives a listener the perception of a linear noise source rather than a single, identifiable point of noise. As distance increases from the highway, noise is reduced or attenuated.

2.2 Federal Regulations

The Federal-aid Highway Act of 1970 required the Federal Highway Administration (FHWA) to develop noise standards and abatement requirements for highway traffic noise. These standards are contained in Part 772 of Title 23 of the Code of Federal Regulations (23 CFR 772). The federal regulations were developed to prescribe the methods that must be followed for the evaluation of highway traffic noise in federal-aid highway projects. FHWA will not approve a project unless a project has been satisfactorily evaluated for potential traffic noise impacts and has addressed feasible and reasonable noise abatement measures.

Based on land use, seven separate activity categories are used by FHWA to assess potential noise impacts as defined by 23 CFR 772. Five of the seven activity categories have Noise Abatement Criteria (NAC) that establishes noise levels where noise abatement needs to be evaluated. The FHWA considered several approaches to define impact levels, but generally based the criteria on noise levels associated with the interference of speech communication. The NAC are therefore a balance of what is desirable and what is generally achievable.

The federal regulations were specifically written to allow flexibility in the development of state policies appropriate for the resources and other influences specific to the state. The FHWA guidance manual, *Highway Traffic Noise: Analysis and Abatement Guidance,* gives state transportation agencies guidance to develop their own state policies. FHWA has deferred to the state agencies to define the

noise level that “approaches” the NAC and to define a substantial increase in traffic noise levels. It should be noted that the NAC are not used as goals for noise attenuation design criteria or design targets. Instead, the NAC are noise impact thresholds for considering abatement when they are approached, met, or exceeded. Noise abatement measures are required to be considered as part of the project if impacts are identified.

2.3 INDOT Policy

INDOT’s most recent noise policy version, *INDOT Traffic Noise Analysis Procedure*, became effective July 1, 2017, and is based on INDOT’s application of the FHWA standards. This policy is applicable to all Type 1 Federal highway projects in the state of Indiana, which encompass the construction of a highway on a new location or the physical alteration of an existing highway that significantly changes either its horizontal or vertical alignment or increases the number of through traffic lanes. The INDOT noise policy outlines a traffic noise analysis with the following elements:

- Identification of Noise-Sensitive Areas and Receptors
- Measurement of Ambient Noise
- Determination of Existing (Current) and Future Noise Levels
- Identification of Traffic Noise Impacts
- Consideration of Noise Abatement Measures
    - Feasibility of Noise Abatement Measure
    - Reasonableness of Noise Abatement Measures
- Future Noise Level Information for Local Government Officials
- Construction Noise

3.0 Noise Analysis Methodology

3.1 Noise Receptor Selection

A receptor is a discrete or representative location of a common noise environment (CNE) for any of the activity categories listed in Table 1. INDOT defines a CNE as a group of receptors within the same Activity Category that are exposed to similar noise sources and levels; traffic volumes, traffic mix, and speed; and topographic features. A CNE generally occurs between two secondary noise sources, such as interchanges, intersections and crossroads. Primary consideration is given to exterior areas where frequent human use occurs for Activity Categories A, B, C and E. Consideration should be given to Activity Category D land uses for interior noise sensitive land uses. Land use along the proposed project corridor was reviewed and identified using the FHWA Activity Categories as shown in Table 1.

Land uses within the noise study limits consists of single-family residences (NAC Category B), a park (NAC Category C) and rail (NAC Category F). The noise study limits are generally defined as the area 500 feet from the proposed edge of road pavement. Once sensitive land use areas were identified, the receptors were grouped into CNEs. A total of 17 CNEs were identified within the noise study limits and evaluated for noise impacts. See Table 2 and Appendix A for CNEs and receptor locations.

Traffic noise is also evaluated on undeveloped permitted lands. To identify any potential development on undeveloped lands within the noise study limits, the noise study limits were reviewed for areas of undeveloped land. Based on that that review, land use within the noise study limits is fully developed. Therefore, there is no potential current or future developments.

Table 1 FHWA Noise Abatement Criteria – Hourly A-Weighted Sound Level in Decibels (dB(A))

Activity Category	$L_{eq}(h)$	Evaluation Location	Description of Activity Category
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B(1)	67	Exterior	Residential.
C(1)	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E(1)	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	---	---	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	---	---	Undeveloped lands that are not permitted.

(1) Includes undeveloped lands permitted for this activity category.
Source: FHWA, *23 CFR Part 772*.

Table 2 Noise Receptors and CNEs

CNE	Receptors	Description	Activity Category
R1	R1-1 to R1-16	16 Residences	B
R2	R2-1 to R2-8	8 Residences	B
R3	R3-1 to R3-7	7 Residences	B
R4	R4-1 to R4-9	9 Residences	B
R5	R5-1 to R5-11	11 Residences	B
R6	R6-1 to R6-18	18 Residences	B
R7	R7-1 to R7-9	9 Residences	B
R8	R8-1 to R8-2	2 Residences	B
R9	R9-1 to R9-6	6 Residences	B
R10	R10-1 to R10-2	2 Residences	B
R11	R11-1 to R11-8	1 Park (8 Receptors)	C
R12	R12-1 to R12-2	2 Residences	B
R13	R13-1 to R13-2	2 Residences	B
R14	R14-1	1 Residence	B
R15	R15-1 to R15-6	6 Residences	B
R16	R16-1 to R16-9	9 Residences	B
R17	R17-1 to R17-15	15 Residences	B

A total of 123 receptors are residential-sensitive land use areas (Activity Category B) within the noise study limits. The houses they represent were chosen because they are all residential dwellings and are subject to the same types of traffic noise within their respective CNE. Eight receptors represent Hanna Park (Activity Category C).

3.2 Common Noise Environments

The following provides a description of each CNE that was identified as having an area of frequent human outdoor use during land use review and grouping.

3.2.1 CNE 1

CNE 1 is located between Walnut and Elm Streets and between Spring and East Streets at the north end of the project. This CNE represents 16 single-family residences. The topography is generally flat. The four mentioned streets are the major noise sources for this CNE.

3.2.2 CNE 2

CNE 2 is located on the south side of Elm Street between Spring and East Streets near the north end of the project. This CNE represents eight single-family residences. The topography is generally flat and gently sloping down to the south. Elm, Spring and East Streets are the main noise sources for this CNE.

3.2.3 CNE 3

CNE 3 is located on the north side of Maple Street between Spring and East Streets. This CNE represents seven single-family residences. The topography is generally flat and gently sloping down to the south. Maple, Spring and East Streets are the main noise sources for this CNE as well as the NSRR tracks when trains are present.

3.2.4 CNE 4

CNE 4 is located between Maple Street and the NSRR and between Spring and East Streets. This CNE represents nine single-family residences. The topography is sloping down to the south. Maple, Spring and East Streets are the main noise sources for this CNE as well as the NSRR tracks when trains are present.

3.2.5 CNE 5

CNE 5 is located between Hill Street and the NSRR and between Spring and East Streets. This CNE represents 11 single-family residences. The topography is sloping down to the north. Hill, Spring and East Streets are the main noise sources for this CNE as well as the NSRR tracks when trains are present.

3.2.6 CNE 6

CNE 6 is located between Hill and Main Streets and between Spring and East Streets. This CNE represents 18 single-family residences. The topography is generally flat. Hill, Main, Spring and East Streets are the main noise sources for this CNE.

3.2.7 CNE 7

CNE 7 is located on the south side of Main Street and between Spring and East Streets at the south end of the project. This CNE represents nine single-family residences. The topography slopes down to the south. Main and East Streets are the main noise sources for this CNE.

3.2.8 CNE 8

CNE 8 is located on the south side of Main Street and between East Street and another line of the NSRR at the south end of the project. This CNE represents two single-family residences. The topography slopes down to the south. East and Main Streets are the main noise sources for this CNE as well as the NSRR tracks when trains are present.

3.2.9 CNE 9

CNE 9 is located between Hill and Main Streets and between East Street and another line of the NSRR. This CNE represents six single-family residences. The topography is generally flat. East Hill and Main Streets are the main noise sources for this CNE as well as the NSRR tracks when trains are present.

3.2.10 CNE 10

CNE 10 is located at the northeast corner of Hill and East Streets. Hanna Park is immediately adjacent to the east. This CNE represents two single-family residences. The topography is generally flat. Hill and East Streets are the main noise sources for this CNE as well as the NSRR tracks when trains are present.

3.2.11 CNE 11

CNE 11 is located about a half block east of East Street and between Hill Street and the NSRR. This CNE represents a park (Hanna Park), which includes a playground, basketball court and pavilion. The topography is gently sloping down to the south and east. Hill and East Streets are the main noise sources for this CNE as well as the NSRR tracks when trains are present.

Under most situations, a single structure is considered a single receptor. Because the park does not contain dwelling units, an algorithm was used to translate usage data into an appropriate number of receptors, based on converting total usage to equivalent residential units. The standard INDOT algorithm for converting usage data into equivalent residential units is:

$$\frac{\text{Daily number of users}}{\text{2.52 people on average per household}} \times \text{Percentage of property within 500 feet} = \text{Number of receptors (rounded up)}$$

Based on information received from the Wabash Park District Manager, approximately 20 persons per day on average utilize the park. The following algorithm was used to calculate the appropriate number of receptors per receiver:

(20 users per day/2.52 average people per household) x (100% of the property within the noise study limits) = 8 receptors

3.2.12 CNE 12

CNE 12 is located between Hill Street and the second NSRR line west of the Wabash River. This CNE represents two single-family residences. The topography is gently sloping to the southeast. Hill Street is the main noise source for this CNE as well as the NSRR tracks when trains are present.

3.2.13 CNE 13

CNE 13 is located is also located between Hill Street and the second NSRR line west of the Wabash River. This CNE represents two single-family residences. The topography is gently sloping to the southeast. Hill Street is the main noise source for this CNE as well as the NSRR tracks when trains are present.

3.2.14 CNE 14

CNE 14 is located on the west side of Hill Street and adjacent to the south side of the NSRR tracks. This CNE represents one single-family residence. The topography is gently sloping to the southeast. Hill Street is the main noise source for this CNE as well as the NSRR tracks when trains are present.

3.2.15 CNE 15

CNE 15 is located east of East Street and adjacent to the north side of the NSRR. This CNE represents six single-family residences. The topography is gently sloping to the south and east. East Street is the main noise source for this CNE as well as the NSRR tracks when trains are present.

3.2.16 CNE 16

CNE 16 is located east of East Street and south of Elm Street. This CNE represents nine single-family residences. The topography is gently sloping to the east. East and Elm Streets are the main noise sources for this CNE as well as the NSRR tracks when trains are present.

3.2.17 CNE 17

CNE 17 is located east of East Street and between Walnut and Elm Streets at the north end of the project. This CNE represents 15 single-family residences. The topography is generally flat. East, Walnut and Elm Streets are the main noise sources for this CNE.

3.3 Traffic Data

Peak hour traffic data for East Street was obtained from the Trax Traffic Analysis report from Shrewsberry and Associates dated November 3, 2020. This traffic was applied to Spring Street as they are both the same functional class and is assumed to have similar traffic patterns. The INDOT Traffic Count Database System (TCDS) was used to obtain AADT on Walnut Street and Hill Street. Using the given TCDS, K% and D% values (peak and directional percentages) were used to calculate design hour traffic. The traffic used for Walnut Street was also applied to Maple Street as there were no traffic

counts within the TCDS and the routes are functionally the same and assumed to have similar traffic patterns.

4.0 Noise Modeling and Impact Identification

Ten representative locations were monitored on August 12, 2022, for the purpose of validating the TNM results and to generally determine existing noise levels. These field measurements were gathered for a 15-minute period at each of the 10 sites using a Svantek sound level meter Svan 971. Traffic counts and vehicle classification were collected concurrently with the noise measurement. The field data sheets for each measurement site are included in Appendix B. The Certificate of Calibration for this sound level meter is included in Appendix C. Prior to use, the meter was calibrated using the appropriate calibrator for this model.

The noise monitoring results were compared to the modeled noise level results from TNM 2.5 utilizing the actual traffic counts and vehicle types recorded during field measurements (see Table 3). The traffic for East Street varied drastically per receptor; traffic data was adjusted in the model accordingly. Additionally, existing traffic data was utilized for any side streets that traffic was not counted for. Measured noise levels ranged from 46.1 to 54.6 dB(A). All site locations were within the acceptable range of +/- 3 dB(A) of the modeled existing noise level results when utilizing the recorded traffic from the monitoring period except for R4, R7, R11 and R14. The modeled noise level for R4 was 4.8 dB(A) under the measured noise level. The higher noise level in the field is likely attributed to lawn equipment that was being used across the street from the receptor location at the beginning of the monitoring period. The modeled noise level for R7 was 5.4 dB(A) under the measured noise level and R11 was 10.1 dB(A) under the measured noise level. Both of these can be attributed to a train passing through during the recording period. R14 was modeled 5.6 dB(A) below the field measurement. This was likely due to an air conditioning unit next to the receptor location turning on and running for approximately six minutes.

Table 3 Noise Monitoring Results

Receptor Number [(1)]	Measured Level dB(A)	Modeled Level dB(A) [(2)]	Difference
R2	55.6	54.1	-1.5
R4	54.8	50.0	-4.8
R5	51.8	54.3	2.5
R7	56.4	51.0	-5.4
R9	52.7	52.8	0.1
R11	58.1	48.0	-10.1
R13	51.4	50.1	-1.3
R14	51.7	46.1	-5.6
R15	51.5	50.5	-1.0
R17	56.7	54.6	-2.1

[(1)] See Appendix A for receptor locations

[(2)] Existing model with field collected counts

TNM 2.5 was utilized to conduct the analysis of 2023 existing traffic noise levels and 2043 future build traffic scenarios. A future no-build model was not needed as the noise study area will not experience

any traffic growth due to the geographical position against the Wabash River and lack of undeveloped land. The model arrived at predicted noise levels through a series of adjustments to a reference sound level. The reference sound level, also called the “reference energy mean emission level,” was based on the sound levels of different classes of vehicles (cars, medium trucks, and heavy trucks). Adjustments were made for predicted traffic flow by the sampling point (design year traffic flow); sampling point distance from the alignment, including whether the intervening ground is hard (parking lot or a body of water) or soft (grass or soil); finite roadway length (the receptor is only exposed to a finite length of the roadway); and shielding (trees or rows of houses between the receptor and the alignment). The existing conditions model was then adjusted for planned geometric changes and projected traffic volumes and speeds to examine projected future noise conditions.

The following TNM 2.5 model assumptions were incorporated into the analysis of this project:

- Traffic volumes and vehicle speeds were assigned to the appropriate TNM vehicle classifications. Traffic data can be found in Appendix E.
- Traffic volumes were included for Elm Street, Spring Street, Maple Street, Hill Street, and Main Street.
- The default ground zone was pavement. This was chosen as the noise study area consisted mostly of residential houses that had little to no lawn and there was sidewalk present throughout.
- The calibration model utilized a combination of field traffic data and existing 2022 traffic data as some streets included in the model were not counted in the field.
- The calibration model utilized an average of field traffic data in some locations along East Street as some field receptors had very low traffic counts. The calibration model is still valid as these field receptors are in close proximity to each other.

As defined by INDOT noise policy, a receptor is impacted if predicted noise levels either: 1) approach (within 1.0 dB(A)) or exceed the NAC (see Table 1); or 2) predicted noise levels will substantially exceed the existing noise levels (at least 15.0 dB(A) above the existing conditions).

NAC Activity Category C land uses that do not have an exterior area of frequent human use are categorized as Activity Category D land uses, which are evaluated for interior noise impacts. However, interior noise impacts were not evaluated for the one CNE categorized as NAC Category C (Hanna Park) because of its exterior areas of frequent use.

Noise analysis was completed for 131 receptors located within the 500-foot offset from the edge of shoulder. Each receptor was analyzed for two scenarios: 2023 existing conditions and 2043 build. The results of the predicted existing and future noise level analysis are shown in Table 5. Existing 2023 noise levels for the 131 receptors ranged from 35.5 to 55.1 dB(A). Predicted future design year 2043 build noise levels for the 131 receptors ranged from 34.8 to 55.1 dB(A).

Predicted future design year 2043 build noise levels would not approach or exceed the NAC at any receptor locations from a total of 131 receptors analyzed. Therefore, impact abatement consideration is not required.

Table 4 Noise Analysis Results

Receptor Number	NAC Activity Category	Represents	NAC dB(A)	2023 Existing Noise Level dB(A)	Predicted Year		Impacted
					2043 Build Noise Level dB(A)	Build Increase over Existing dB(A)	
R1-1	B	Residence	66	50.3	50.3	0.0	No
R1-2	B	Residence	66	43.0	42.9	-0.1	No
R1-3	B	Residence	66	40.4	40.2	-0.2	No
R1-4	B	Residence	66	42.1	41.4	-0.7	No
R1-5	B	Residence	66	43.4	42.3	-1.0	No
R1-6	B	Residence	66	51.9	51.6	-0.3	No
R1-7	B	Residence	66	51.9	51.8	-0.1	No
R1-8	B	Residence	66	52.6	52.4	-0.2	No
R1-9	B	Residence	66	49.6	49.5	-0.1	No
R1-10	B	Residence	66	48.4	48.5	0.1	No
R1-11	B	Residence	66	49.7	49.7	0.0	No
R1-12	B	Residence	66	49.2	49.2	0.0	No
R1-13	B	Residence	66	48.0	48.0	0.0	No
R1-14	B	Residence	66	52.5	52.5	0.0	No
R1-15	B	Residence	66	48.0	48.0	0.0	No
R1-16	B	Residence	66	51.7	51.7	0.0	No
R2-1	B	Residence	66	52.1	52.1	0.0	No
R2-2	B	Residence	66	50.4	50.4	0.0	No
R2-3	B	Residence	66	49.9	49.9	0.0	No
R2-4	B	Residence	66	49.3	49.3	0.0	No
R2-5	B	Residence	66	50.1	50.2	0.1	No
R2-6	B	Residence	66	51.0	51.0	0.0	No
R2-7	B	Residence	66	49.2	48.7	-0.5	No
R2-8	B	Residence	66	51.1	50.9	-0.2	No
R3-1	B	Residence	66	49.3	49.3	0.1	No
R3-2	B	Residence	66	50.5	50.5	0.0	No
R3-3	B	Residence	66	50.0	50.0	0.0	No
R3-4	B	Residence	66	49.9	49.9	0.0	No
R3-5	B	Residence	66	47.7	47.8	0.1	No
R3-6	B	Residence	66	51.1	50.7	-0.4	No
R3-7	B	Residence	66	50.8	50.8	0.0	No
R4-1	B	Residence	66	52.4	52.4	0.0	No
R4-2	B	Residence	66	52.8	52.9	0.0	No
R4-3	B	Residence	66	45.5	45.6	0.0	No
R4-4	B	Residence	66	47.2	47.2	-0.1	No

Receptor Number	NAC Activity Category	Represents	NAC dB(A)	2023 Existing Noise Level dB(A)	Predicted Year		Impacted
					2043 Build Noise Level dB(A)	Build Increase over Existing dB(A)	
R4-5	B	Residence	66	52.7	52.7	0.0	No
R4-6	B	Residence	66	51.5	51.5	0.0	No
R4-7	B	Residence	66	51.1	51.1	-0.1	No
R4-8	B	Residence	66	51.8	51.6	-0.2	No
R4-9	B	Residence	66	52.4	52.4	0.0	No
R5-1	B	Residence	66	47.8	47.8	0.0	No
R5-2	B	Residence	66	47.3	47.3	-0.1	No
R5-3	B	Residence	66	50.0	50.0	0.0	No
R5-4	B	Residence	66	48.2	48.3	0.0	No
R5-5	B	Residence	66	49.2	49.3	0.0	No
R5-6	B	Residence	66	48.3	48.4	0.1	No
R5-7	B	Residence	66	49.1	49.2	0.1	No
R5-8	B	Residence	66	47.3	47.3	0.0	No
R5-9	B	Residence	66	51.9	51.2	-0.7	No
R5-10	B	Residence	66	52.2	51.6	-0.6	No
R5-11	B	Residence	66	53.0	53.0	0.0	No
R6-1	B	Residence	66	52.9	52.9	0.0	No
R6-2	B	Residence	66	54.3	54.3	0.0	No
R6-3	B	Residence	66	53.8	53.8	0.0	No
R6-4	B	Residence	66	53.7	53.7	0.0	No
R6-5	B	Residence	66	53.5	53.5	0.0	No
R6-6	B	Residence	66	53.3	53.3	0.0	No
R6-7	B	Residence	66	54.8	54.7	-0.1	No
R6-8	B	Residence	66	51.6	51.7	0.1	No
R6-9	B	Residence	66	53.1	53.3	0.2	No
R6-10	B	Residence	66	50.3	50.2	-0.1	No
R6-11	B	Residence	66	49.3	49.3	0.0	No
R6-12	B	Residence	66	48.3	48.3	0.0	No
R6-13	B	Residence	66	48.6	48.6	0.0	No
R6-14	B	Residence	66	48.7	48.7	0.0	No
R6-15	B	Residence	66	49.6	49.6	0.0	No
R6-16	B	Residence	66	52.0	52.0	0.0	No
R6-17	B	Residence	66	52.6	52.6	0.0	No
R6-18	B	Residence	66	51.7	51.7	0.0	No
R7-1	B	Residence	66	50.0	50.0	0.0	No
R7-2	B	Residence	66	50.0	50.0	0.0	No

Receptor Number	NAC Activity Category	Represents	NAC dB(A)	2023 Existing Noise Level dB(A)	Predicted Year		Impacted
					2043 Build Noise Level dB(A)	Build Increase over Existing dB(A)	
R7-3	B	Residence	66	49.2	49.2	0.0	No
R7-4	B	Residence	66	49.1	49.0	-0.1	No
R7-5	B	Residence	66	48.9	48.9	0.0	No
R7-6	B	Residence	66	50.2	50.2	0.0	No
R7-7	B	Residence	66	50.1	50.1	0.0	No
R7-8	B	Residence	66	50.6	50.6	0.0	No
R7-9	B	Residence	66	50.6	50.7	0.1	No
R8-1	B	Residence	66	49.0	49.9	0.9	No
R8-2	B	Residence	66	43.2	43.1	-0.1	No
R9-1	B	Residence	66	51.7	50.9	-0.8	No
R9-2	B	Residence	66	46.6	46.6	0.0	No
R9-3	B	Residence	66	48.7	48.8	0.0	No
R9-4	B	Residence	66	42.1	42.1	-0.6	No
R9-5	B	Residence	66	43.3	43.2	-0.6	No
R9-6	B	Residence	66	50.7	50.6	-0.2	No
R10-1	B	Residence	66	53.0	52.9	-0.7	No
R10-2	B	Residence	66	52.5	52.2	-1.3	No
R11-1	C	Park	66	44.4	44.2	-1.0	No
R11-2	C	Park	66	45.0	45.1	-0.3	No
R11-3	C	Park	66	44.0	44.1	-0.6	No
R11-4	C	Park	66	44.1	44.2	-0.6	No
R11-5	C	Park	66	46.3	46.5	-0.3	No
R11-6	C	Park	66	46.1	46.2	-0.3	No
R11-7	C	Park	66	48.7	48.8	-0.1	No
R11-8	C	Park	66	49.3	49.3	-0.1	No
R12-1	B	Residence	66	50.2	50.2	0.0	No
R12-2	B	Residence	66	53.0	53.0	0.0	No
R13-1	B	Residence	66	53.9	53.9	0.0	No
R13-2	B	Residence	66	55.1	55.1	0.0	No
R14-1	B	Residence	66	46.3	46.4	-0.1	No
R15-1	B	Residence	66	52.4	52.3	-0.1	No
R15-2	B	Residence	66	52.6	52.5	-0.1	No
R15-3	B	Residence	66	49.8	47.8	-2.2	No
R15-4	B	Residence	66	41.0	40.7	-0.7	No
R15-5	B	Residence	66	43.1	42.6	-0.8	No
R15-6	B	Residence	66	41.4	41.3	-0.3	No

Receptor Number	NAC Activity Category	Represents	NAC dB(A)	2023 Existing Noise Level dB(A)	Predicted Year		Impacted
					2043 Build Noise Level dB(A)	Build Increase over Existing dB(A)	
R16-1	B	Residence	66	52.9	52.9	0.0	No
R16-2	B	Residence	66	52.0	51.9	-0.1	No
R16-3	B	Residence	66	52.5	52.5	0.0	No
R16-4	B	Residence	66	47.8	47.7	-0.1	No
R16-5	B	Residence	66	41.4	41.1	-0.5	No
R16-6	B	Residence	66	40.5	40.3	-0.5	No
R16-7	B	Residence	66	40.9	40.7	-0.4	No
R16-8	B	Residence	66	47.2	47.2	0.0	No
R16-9	B	Residence	66	48.0	48.0	0.0	No
R17-1	B	Residence	66	52.4	51.6	-0.8	No
R17-2	B	Residence	66	52.0	51.6	-0.4	No
R17-3	B	Residence	66	52.8	52.6	-0.2	No
R17-4	B	Residence	66	54.2	54.1	-0.1	No
R17-5	B	Residence	66	54.7	54.7	0.0	No
R17-6	B	Residence	66	48.4	48.4	0.0	No
R17-7	B	Residence	66	48.2	48.1	-0.1	No
R17-8	B	Residence	66	47.5	47.4	-0.1	No
R17-9	B	Residence	66	48.1	48.1	0.0	No
R17-10	B	Residence	66	47.9	47.9	0.0	No
R17-11	B	Residence	66	47.3	47.3	0.0	No
R17-12	B	Residence	66	35.5	34.8	-0.7	No
R17-13	B	Residence	66	36.0	35.1	-0.9	No
R17-14	B	Residence	66	37.3	36.0	-1.3	No
R17-15	B	Residence	66	40.9	39.2	-1.7	No

5.0 Abatement Analysis

Traffic noise abatement evaluation is used to identify potential noise abatement measures when the existing or predicted future traffic noise levels approach, meet or exceed the NAC, or when the predicted future noise levels of the build alternative result in a substantial increase over existing noise levels. In addition to the direct benefits of noise abatement, the social, economic and environmental effects also must be considered. Any noise abatement measure must be determined both feasible and reasonable to be considered for implementation. The noise abatement measure also must be considered a prudent expenditure of public funds to be considered reasonable. Noise abatement was not evaluated for any receptors because predicted noise levels did not approach or exceed the NAC, nor did they substantially exceed the existing noise levels. However, should project conditions change that warrant consideration of noise abatement, the following section outlines noise abatement measures when traffic noise impacts have been determined.

5.1 Abatement Measures Considered

Noise barriers are typically the most practical noise abatement measures due to their cost effectiveness and ability to be implemented on right-of-way and along existing roadways. Noise barriers may include noise walls, earth berms or a combination of both. Noise barriers reduce noise levels by impeding transmission of noise, absorbing noise or reflecting it back toward the noise source. Other abatement measures such as traffic management/restrictions, alteration of alignment, or purchase of land for use as a buffer zone usually do not provide substantial noise reductions or are not found to be feasible and reasonable due to cost, right-of-way requirements or do not meet the purpose and need of the proposed project. Based on these reasons, noise abatement measures other than noise barriers are typically not further considered.

5.2 Feasibility

Based on INDOT noise policy, noise abatement is feasible if the abatement measure meets the following conditions:

- Engineering Feasibility – INDOT requires noise abatement measures to be based on sound engineering practices and standards and requires that any measures be evaluated at the optimum location. Engineering feasibility also takes into account topography, drainage, safety, barrier height, utilities, and access/maintenance.

- Acoustic Feasibility – INDOT requires that noise barriers achieve a five dB(A) reduction at a majority (greater than 50 percent) of the impacted receptors.

5.3 Reasonableness

The reasonableness evaluation for noise abatement consists of three parts: the noise reduction design goal, cost effectiveness and the viewpoints of the benefited receptors.

- Design Goal – A majority (greater than 50 percent) of the first-row receptors achieve at least a seven dB(A) reduction in noise as a result of the noise abatement measure.

- Cost-Effectiveness – To determine cost effectiveness, the estimated cost of constructing a noise barrier will be divided by the number of benefited receptors (those who would receive a reduction of at least five dB(A)). A base material and design cost of $25,000 to $30,000 or less per benefited receiver is currently considered to be cost-effective. Development in which a majority (more than 50 percent) of the receptors was in place prior to the initial construction of the roadway in its current state (functional classification) will receive additional consideration for noise abatement. The cost-effectiveness criteria used for these cases will be 20 percent greater (currently $30,000 per benefited receptor).

- View of Residents and Property Owners – A survey will be mailed to each benefited receptor to consider the views of residents and property owners. The concerns and opinions of the property owners and residents will be balanced with other considerations in determining whether a barrier is appropriate for a given location.

6.0 Construction Noise

Trucks and machinery used for construction produce noise that may affect some land uses and activities during the construction period. Residents along the alignment will at some time experience perceptible construction noise from implementation of the project. To minimize or eliminate the effect of construction noise on these receptors, the City of Wabash will consider mitigation measures to incorporate into the special provisions to the project's construction specifications as appropriate. These measures could include work-hour limits, equipment muffler requirements, location of haul roads, elimination of tailgate banging, reduction of backing up for equipment with alarms, and community complaint systems.

7.0 Coordination with Local Officials

The purpose of coordinating with local officials is to provide information and promote compatible land development and land use planning adjacent to proposed highway projects. Compatible land use planning is an important tool for preventing future noise impacts. However, because all land within the noise study limits is already developed into residential and park, noise contours were not developed for areas adjacent to the proposed roadway improvements where the NAC is approached (66 dBA). Therefore, coordination with local officials for undeveloped lands is not warranted.

8.0 Public Involvement

Noise barriers are not proposed for the project because predicted noise levels did not approach or exceed the NAC, nor did they substantially exceed the existing noise levels. Therefore, consideration and obtaining of the views of residents and property owners regarding the potential for noise abatement is not warranted at this time. The City of Wabash held a public meeting on April 26, 2022, to present the project purpose and need, preliminary plans and receive public questions and comments. The City plans to hold a public hearing in early 2023. The results of the approved traffic noise analysis will be presented at the upcoming public hearing.

9.0 Conclusion

Of the 131 receptors analyzed, none were found to be approaching/exceeding the NAC in the 2043 design year. Abatement measures are therefore not necessary for this project.

10.0 References

Indiana Department of Transportation, *Traffic Count Database System (TCDS)*, 2022.

Indiana Department of Transportation, *Traffic Noise Analysis Procedure*, 2017.

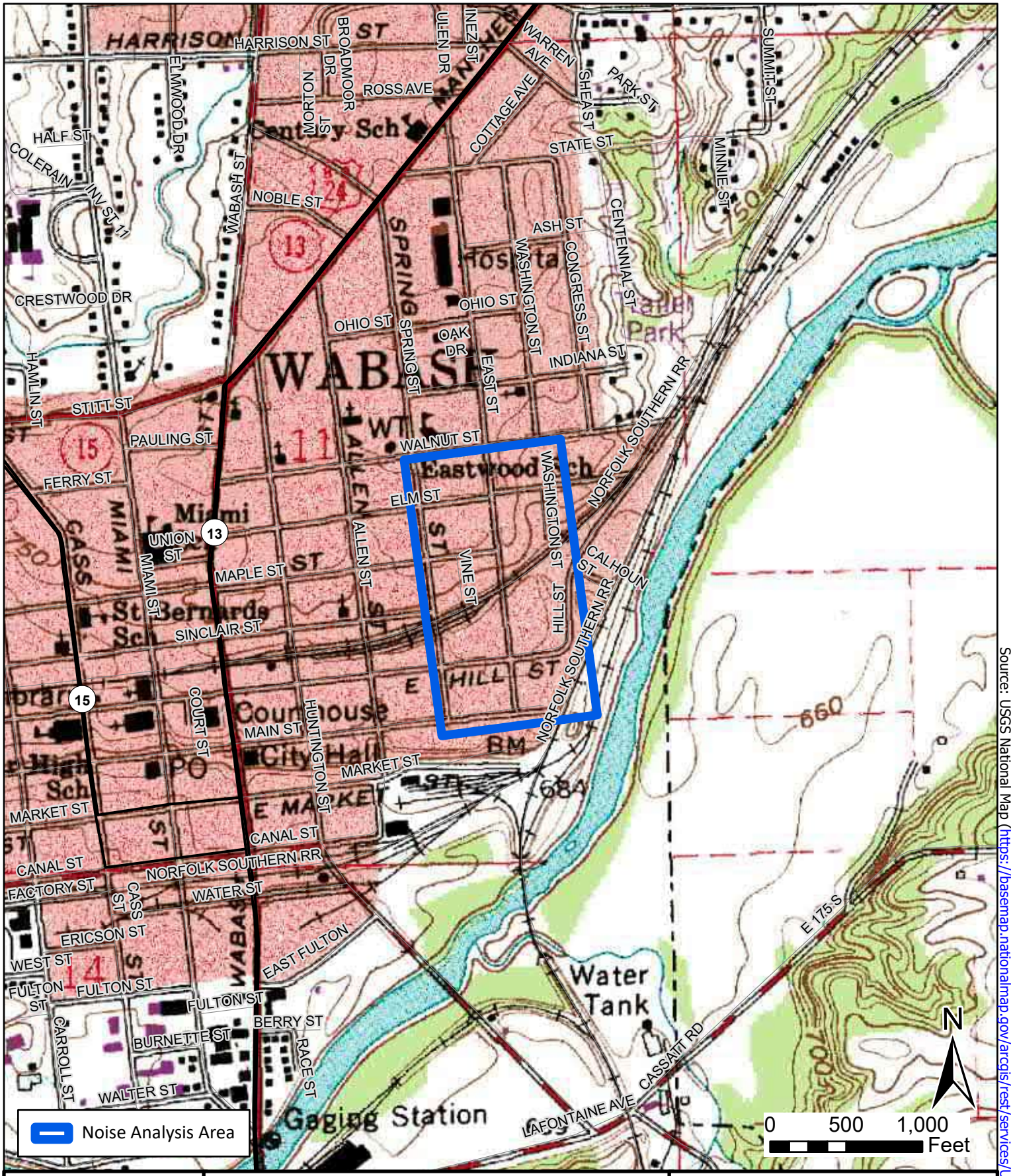
U.S. Department of Transportation (USDOT), Federal Highway Administration (FWHA), *Highway Traffic Noise: Analysis and Abatement Guidance (FHWA-HEP-10-025)*, December 2011.

23 CFR Part 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise*, 2010.

USDOT, FHWA, *Measurement of Highway-Related Noise* (FHWA-PD-96-046, DOT-VNTSCFHWA-96-5), May 1996.

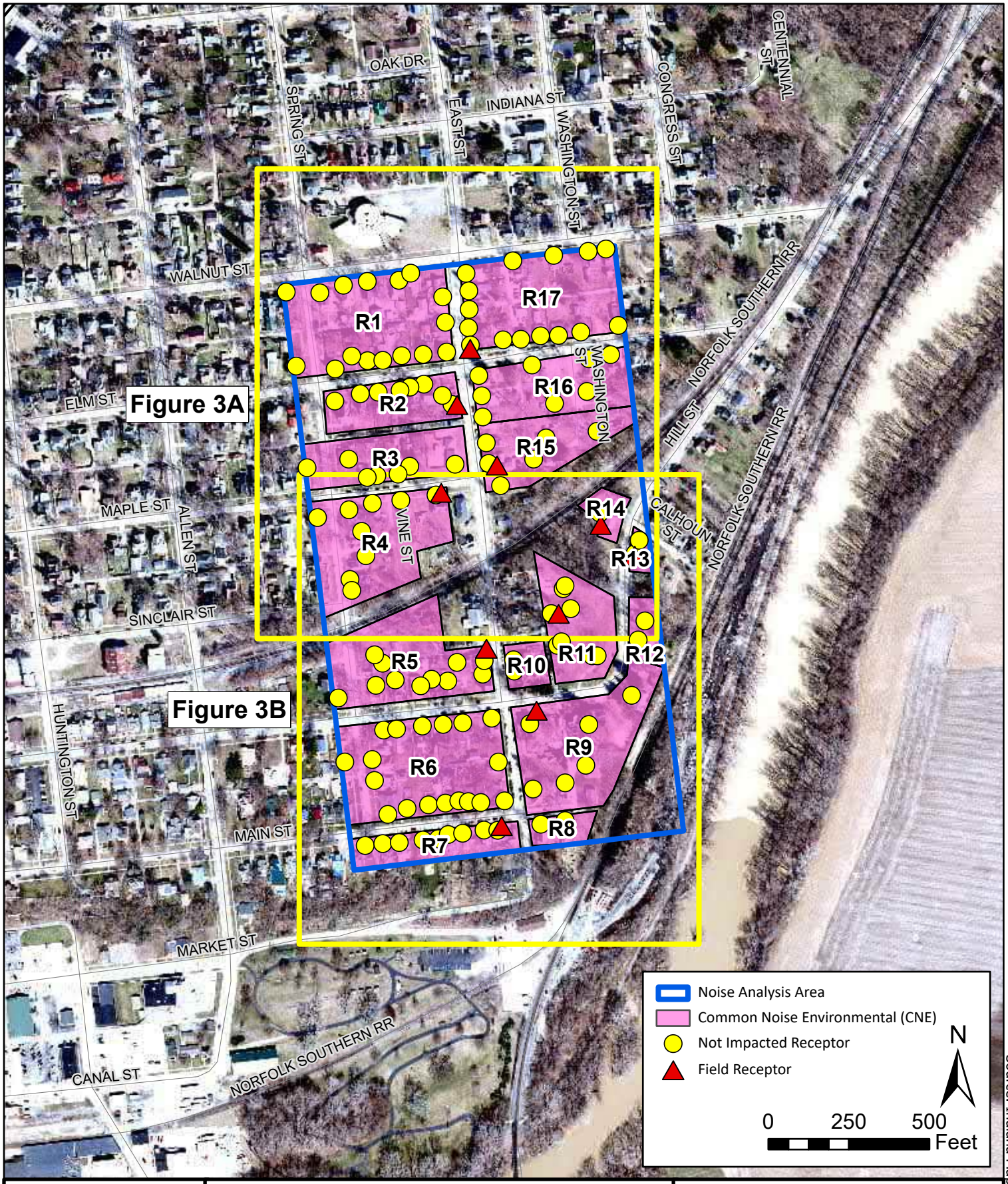
USDOT, FHWA, *Noise Fundamentals Training Document - Highway Traffic Noise Sources*, September 1980.

Appendix A – Traffic Noise Analysis Figures



Source: USGS National Map (https://basemap.nationalmap.gov/arcgis/rest/services/USGSTopo/MapServer/0)

HANSON. Hanson Professional Services Inc.	**USGS Topographic Map** East Street Grade Separation at Norfolk Southern RR Tracks Wabash County, City of Wabash, Indiana Des. No. 1801915 Figure 2	**Indiana Department of Transportation** 100 North Senate Avenue Indianapolis, IN 46204



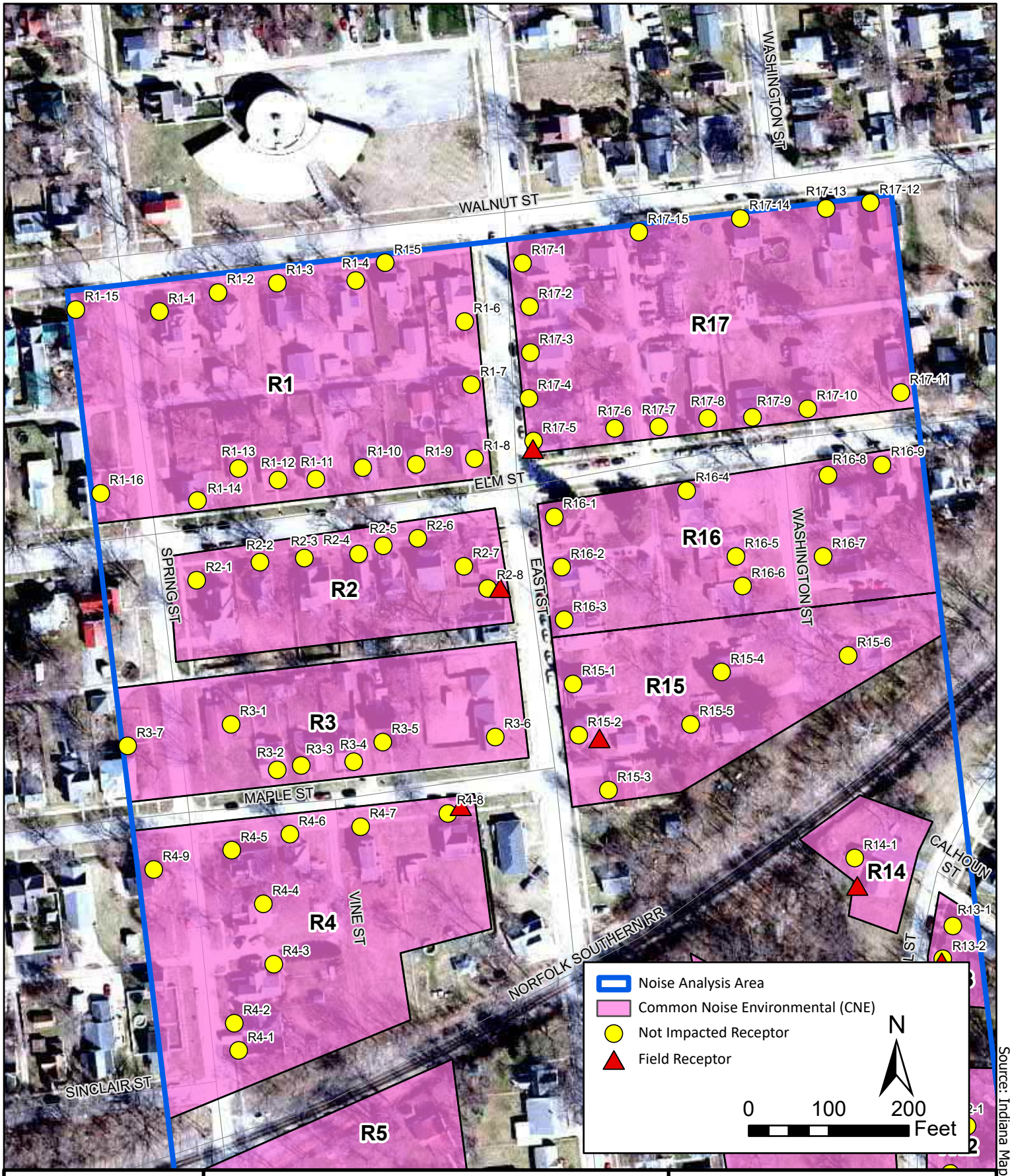
HANSON.
Hanson Professional Services Inc.

Noise Map

East Street Grade Separation
at Norfolk Southern RR Tracks
Wabash County, City of Wabash, Indiana

Des. No. 1801915 Figure 3

Indiana Department of Transportation
100 North Senate Avenue
Indianapolis, IN 46204



Source: Indiana Map (www.indianamap.org)

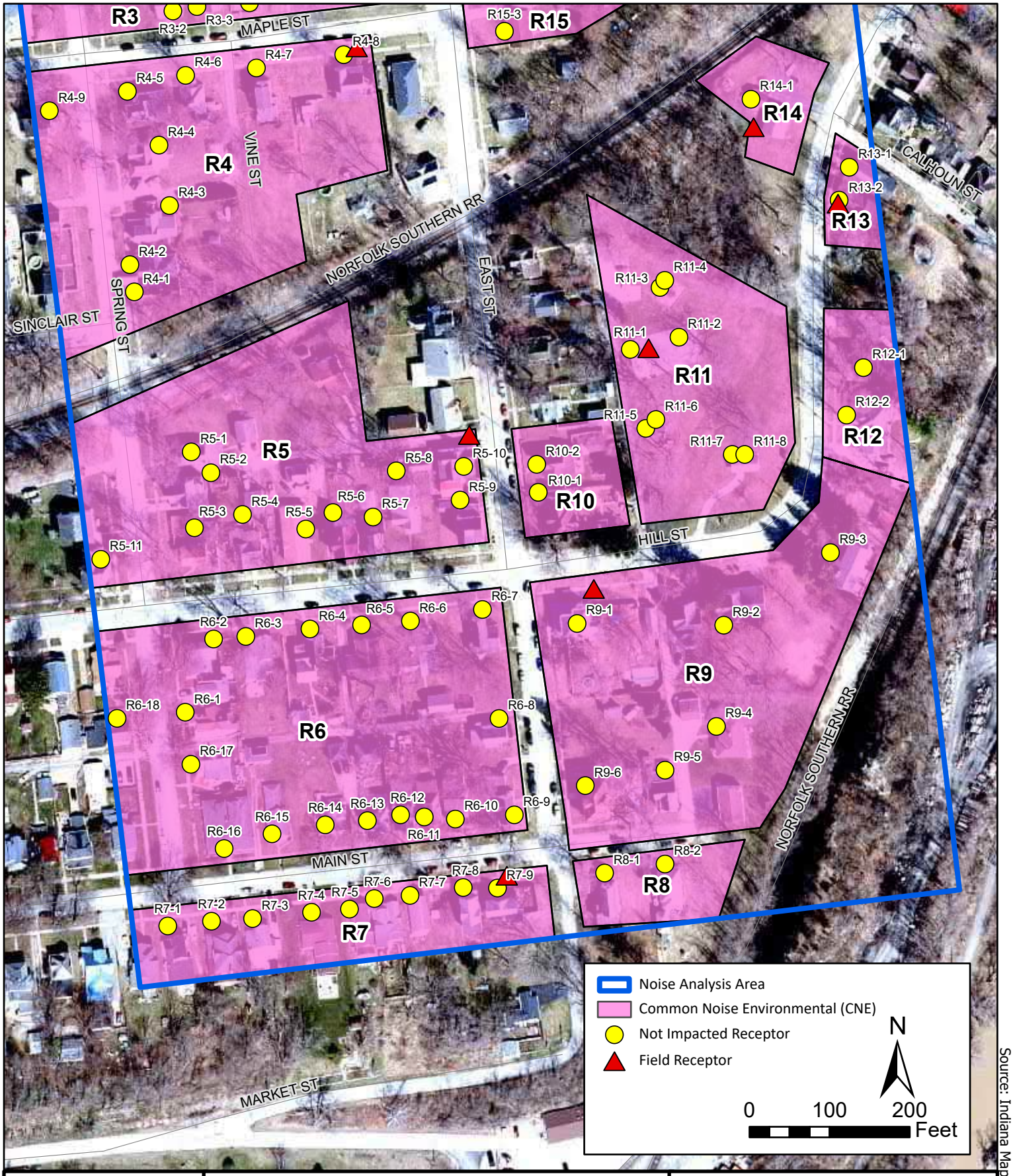
Noise Map

East Street Grade Separation
at Norfolk Southern RR Tracks
Wabash County, City of Wabash, Indiana

Des. No. 1801915 Figure 3A

HANSON.
Hanson Professional Services Inc.

Indiana Department of Transportation
100 North Senate Avenue
Indianapolis, IN 46204



Source: Indiana Map (www.indianamap.org)

HANSON. Hanson Professional Services Inc.	**Noise Map** East Street Grade Separation at Norfolk Southern RR Tracks Wabash County, City of Wabash, Indiana Des. No. 1801915 Figure 3B	**Indiana Department of Transportation** 100 North Senate Avenue Indianapolis, IN 46204

Appendix B – Noise Measurement Data Sheets

SITE INFORMATION

Site:	**R2**	**Investigator(s):** Ali Whitehead, Lane Page	**Weather Conditions**
			Temp (°F) 75°
			Wind (mph) NE 6 mph
Meter ID:	971		**RH (%)** 45%
Meter Serial No.	40342		**Description:** Sunny
Data File(s): 49			

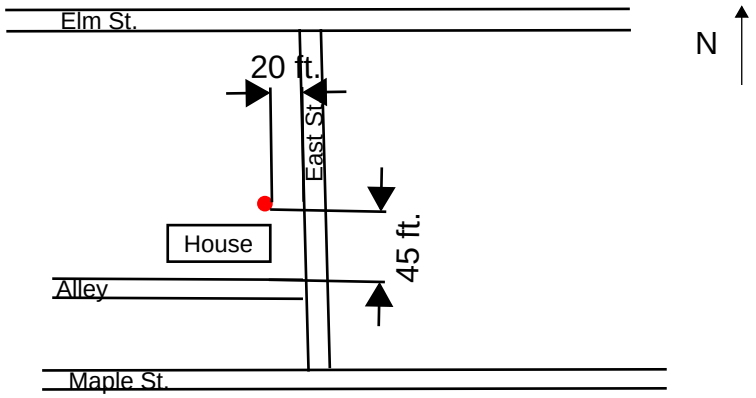
Start of Data Logging		End of Data Logging		Start of Data Logging		End of Data Logging	
Date:	8/12/22	**Date:**	8/12/22	**Date:**		**Date:**	
Time:	2:29pm	**Time:**	2:44pm	**Time:**		**Time:**	
		Duration:	15:03			**Duration:**	

DESCRIPTION OF SURROUNDINGS

Physical layout:

[X] **Picture of Monitor and Location**

● Noise Monitor



Measured Level: 55.57 dB(A)

Major sound generator: East Street

ADDITIONAL NOTES

Date	Time	Comment

TRAFFIC DATA

Roadway	East St. Northbound	East St. Southbound		
Cars	7	7		
Medium Truck	-	-		
Heavy Truck	-	-		
Buses				
Motorcycles				

HANSON Engineering | Planning | Allied Services	SOUND MONITORING DATA FORM East Street Over Norfolk Southern RR Wabash, IN

SITE INFORMATION

Site:	**R4**	**Investigator(s):** Ali Whitehead, Lane Page	**Weather Conditions**
			Temp (°F) 75°
			Wind (mph) NE 5 mph
Meter ID:	971		**RH (%)** 45%
Meter Serial No.	40342		**Description:** Sunny
Data File(s): 51			

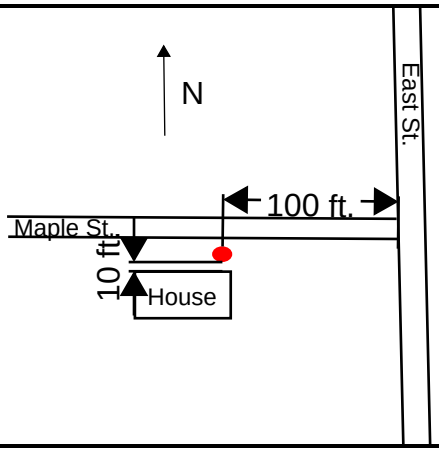
Start of Data Logging		End of Data Logging		Start of Data Logging		End of Data Logging	
Date:	8/12/22	**Date:**	8/12/22	**Date:**		**Date:**	
Time:	3:15pm	**Time:**	3:31pm	**Time:**		**Time:**	
		Duration:	15:08			**Duration:**	

DESCRIPTION OF SURROUNDINGS

Physical layout:

[X] **Picture of Monitor and Location**

● Noise Monitor



Measured Level: 54.77 dB(A)

Major sound generator: Weed Wacker

ADDITIONAL NOTES

Date	Time	Comment
8/12	3:19pm	Weed Wacker across the street
8/12	3:22pm	People entering residence, resident came out and talked with us from 3:26pm to end of reading

TRAFFIC DATA

Roadway	East St. Northbound	East St. Southbound	Maple St. Eastbound	Maple St. Westbound
Cars	-	1	1	-
Medium Truck	-	-	-	-
Heavy Truck	-	-	-	-
Buses				
Motorcycles				

HANSON Engineering | Planning | Allied Services	SOUND MONITORING DATA FORM East Street Over Norfolk Southern RR Wabash, IN

SITE INFORMATION

Site:	**R5**	**Investigator(s):** Ali Whitehead, Lane Page	**Weather Conditions**
			Temp (°F) 72°
			Wind (mph) ENE 8 mph
Meter ID:	971		**RH (%)** 48%
Meter Serial No.	40342		**Description:** Sunny
Data File(s): 46			

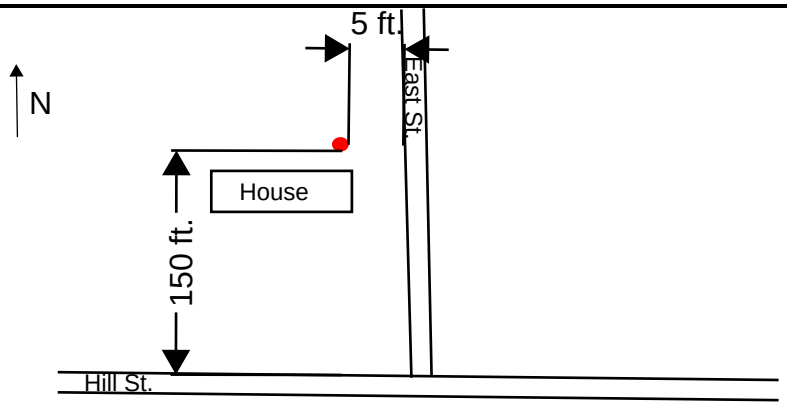
Start of Data Logging		**End of Data Logging**		**Start of Data Logging**		**End of Data Logging**	
Date:	8/12/22	**Date:**	8/12/22	**Date:**		**Date:**	
Time:	12:04pm	**Time:**	12:19pm	**Time:**		**Time:**	
		Duration:	15:03			**Duration:**	

DESCRIPTION OF SURROUNDINGS

Physical layout:

[X] **Picture of Monitor and Location**

● Noise Monitor



Measured Level: 51.83 dB(A)

Major sound generator: East Street

ADDITIONAL NOTES

Date	Time	Comment

TRAFFIC DATA

Roadway	East St. Northbound	East St. Southbound		
Cars	1	1		
Medium Truck	-	-		
Heavy Truck	-	-		
Buses				
Motorcycles				

HANSON Engineering | Planning | Allied Services	SOUND MONITORING DATA FORM East Street Over Norfolk Southern RR Wabash, IN

SITE INFORMATION

Site:	**R7**	**Investigator(s):** Ali Whitehead, Lane Page	**Weather Conditions**
			Temp (°F) 73°
			Wind (mph) ENE 7 mph
Meter ID:	971		**RH (%)** 47%
Meter Serial No.	40342		**Description:** Sunny
Data File(s): 47			

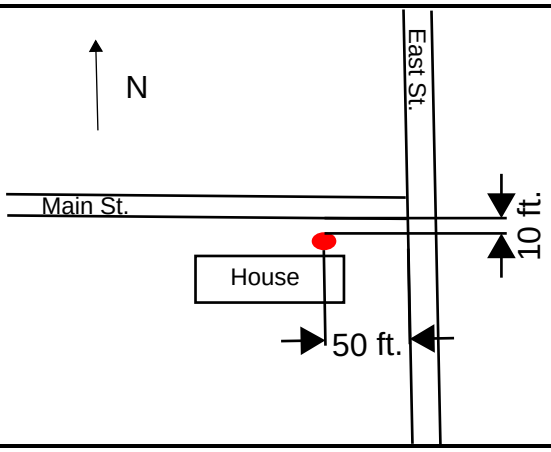
Start of Data Logging		**End of Data Logging**		**Start of Data Logging**		**End of Data Logging**	
Date:	8/12/22	**Date:**	8/12/22	**Date:**		**Date:**	
Time:	12:48pm	**Time:**	1:03pm	**Time:**		**Time:**	
		Duration:	15:02			**Duration:**	

DESCRIPTION OF SURROUNDINGS

Physical layout:

X **Picture of Monitor and Location**

● Noise Monitor



Measured Level: 56.41 dB(A)

Major sound generator: Train

ADDITIONAL NOTES

Date	Time	Comment
8/12	12:56pm	Dog barking
8/12	12:58pm	Train

TRAFFIC DATA

Roadway	Main St. Eastbound	Main St. Westbound	East St. Northbound	East St. Southbound
Cars	1	-	-	-
Medium Truck	-	-	-	-
Heavy Truck	-	-	-	-
Buses				
Motorcycles				

HANSON Engineering | Planning | Allied Services	SOUND MONITORING DATA FORM East Street Over Norfolk Southern RR Wabash, IN

SITE INFORMATION

Site: **R9**		**Investigator(s):** Ali Whitehead, Lane Page	**Weather Conditions**
			Temp (°F) 70°
			Wind (mph) ENE 8 mph
Meter ID: 971			**RH (%)** 52%
Meter Serial No.	40342		**Description:** Sunny
Data File(s): 45			

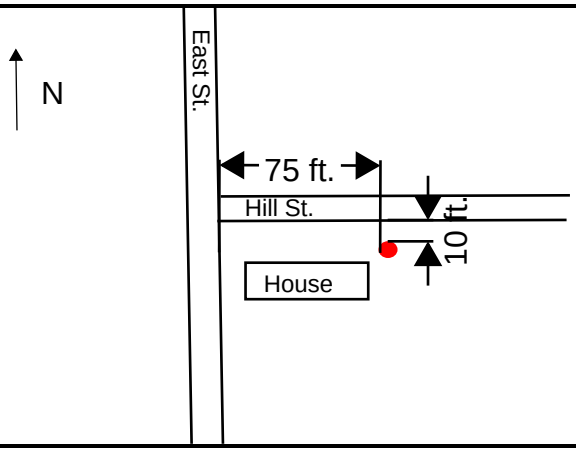
Start of Data Logging		**End of Data Logging**		**Start of Data Logging**		**End of Data Logging**	
Date:	8/12/22	**Date:**	8/12/22	**Date:**		**Date:**	
Time:	11:41am	**Time:**	11:55am	**Time:**		**Time:**	
		Duration:	15:04			**Duration:**	

DESCRIPTION OF SURROUNDINGS

Physical layout:

[X] **Picture of Monitor and Location**

● Noise Monitor



Measured Level: 52.72 dB(A)

Major sound generator: Hill Street

ADDITIONAL NOTES

Date	Time	Comment

TRAFFIC DATA

Roadway	Hill St. Eastbound	Hill St. Westbound	East St. Northbound	East St. Southbound
Cars	4	9	-	2
Medium Truck	-	-	-	-
Heavy Truck	-	-	-	-
Buses				
Motorcycles				

HANSON Engineering | Planning | Allied Services	SOUND MONITORING DATA FORM East Street Over Norfolk Southern RR Wabash, IN

SITE INFORMATION

Site: **R11**		**Investigator(s):** Ali Whitehead, Lane Page	**Weather Conditions**
			Temp (°F) 70°
			Wind (mph) ENE 8 mph
Meter ID: 971			**RH (%)** 52%
Meter Serial No.	40342		**Description:** Sunny
Data File(s): 44			

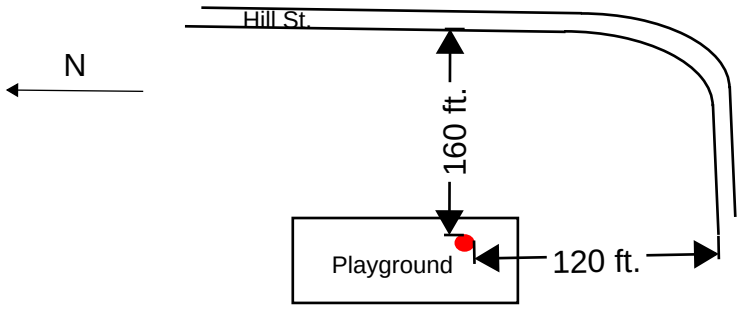
Start of Data Logging		**End of Data Logging**		**Start of Data Logging**		**End of Data Logging**	
Date:	8/12/22	**Date:**	8/12/22	**Date:**		**Date:**	
Time:	11:20am	**Time:**	11:35am	**Time:**		**Time:**	
		Duration:	15:02			**Duration:**	

DESCRIPTION OF SURROUNDINGS

Physical layout:

[X] **Picture of Monitor and Location**

● Noise Monitor



Measured Level: 58.11 dB(A)

Major sound generator: Train

ADDITIONAL NOTES

Date	Time	Comment
8/12	11:24am	Sneeze
8/12	11:26am	Train horns (until 11:30am)

TRAFFIC DATA

Roadway	Hill St. Northbound	Hill St. Southbound		
Cars	9	6		
Medium Truck	-	-		
Heavy Truck	-	-		
Buses				
Motorcycles				

HANSON Engineering | Planning | Allied Services	SOUND MONITORING DATA FORM East Street Over Norfolk Southern RR Wabash, IN

SITE INFORMATION

Site:	**R13**	**Investigator(s):** Ali Whitehead, Lane Page	**Weather Conditions**
			Temp (°F) 70°
			Wind (mph) E 8 mph
Meter ID:	971		**RH (%)** 58%
Meter Serial No.	40342		**Description:** Sunny
Data File(s): 43			

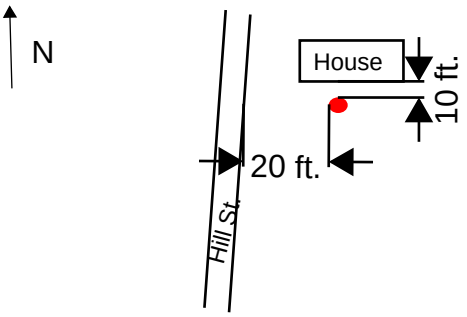
Start of Data Logging		End of Data Logging		Start of Data Logging		End of Data Logging	
Date:	8/12/22	**Date:**	8/12/22	**Date:**		**Date:**	
Time:	10:58am	**Time:**	11:14am	**Time:**		**Time:**	
		Duration:	15:02			**Duration:**	

DESCRIPTION OF SURROUNDINGS

Physical layout:

[X] **Picture of Monitor and Location**

● Noise Monitor



Measured Level: 51.39 dB(A)

Major sound generator: Hill Street

ADDITIONAL NOTES

Date	Time	Comment

TRAFFIC DATA

Roadway	Hill St. Northbound	Hill St. Southbound		
Cars	2	2		
Medium Truck	-	-		
Heavy Truck	-	-		
Buses				
Motorcycles				

HANSON Engineering | Planning | Allied Services	SOUND MONITORING DATA FORM East Street Over Norfolk Southern RR Wabash, IN

SITE INFORMATION

Site: **R14**		**Investigator(s):** Ali Whitehead, Lane Page	**Weather Conditions**
			Temp (°F) 68°
			Wind (mph) E 8 mph
Meter ID: 971			**RH (%)** 63%
Meter Serial No.	40342		**Description:** Sunny
Data File(s): 42			

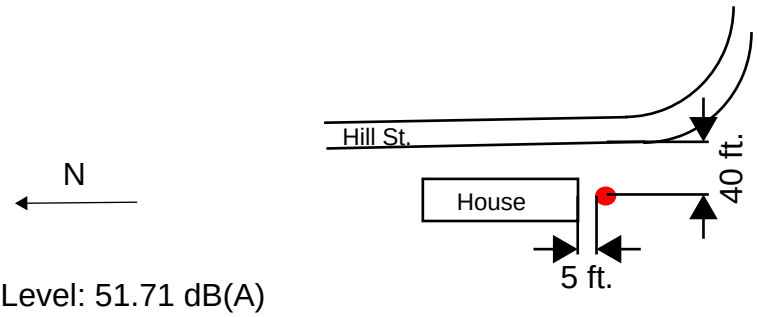
Start of Data Logging		**End of Data Logging**		**Start of Data Logging**		**End of Data Logging**	
Date:	8/12/22	**Date:**	8/12/22	**Date:**		**Date:**	
Time:	10:39am	**Time:**	10:54am	**Time:**		**Time:**	
		Duration:	15:17			**Duration:**	

DESCRIPTION OF SURROUNDINGS

Physical layout:

[X] **Picture of Monitor and Location**

● Noise Monitor



Measured Level: 51.71 dB(A)

Major sound generator: AC unit

ADDITIONAL NOTES

Date	Time	Comment
8/12	10:40am	AC unit when on at residence (turned off at 10:46am)

TRAFFIC DATA

Roadway	Hill St. Northbound	Hill St. Southbound		
Cars	1	5		
Medium Truck	-	-		
Heavy Truck	-	-		
Buses				
Motorcycles				

HANSON Engineering | Planning | Allied Services	SOUND MONITORING DATA FORM East Street Over Norfolk Southern RR Wabash, IN

SITE INFORMATION

Site: **R15**		**Investigator(s):** Ali Whitehead, Lane Page	**Weather Conditions**
			Temp (°F) 75°
			Wind (mph) NE 6 mph
Meter ID: 971			**RH (%)** 44%
Meter Serial No.	40342		**Description:** Sunny
Data File(s): 50			

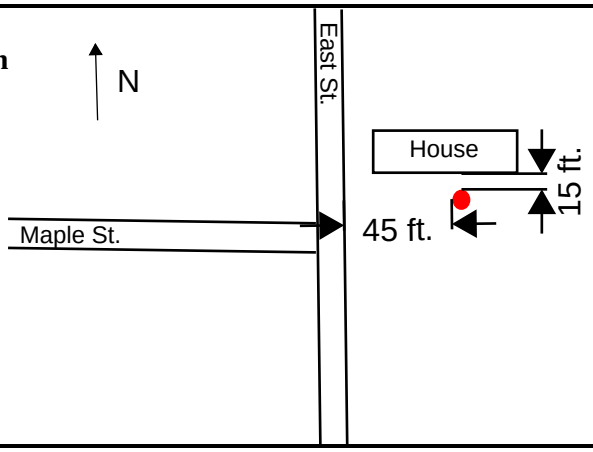
Start of Data Logging		**End of Data Logging**		**Start of Data Logging**		**End of Data Logging**	
Date:	8/12/22	**Date:**	8/12/22	**Date:**		**Date:**	
Time:	2:55pm	**Time:**	3:11pm	**Time:**		**Time:**	
		Duration:	15:02			**Duration:**	

DESCRIPTION OF SURROUNDINGS

Physical layout:

[X] **Picture of Monitor and Location**

● Noise Monitor



Measured Level: 51.46 dB(A)

Major sound generator: East Street

ADDITIONAL NOTES

Date	Time	Comment

TRAFFIC DATA

Roadway	East St. Northbound	East St. Southbound		
Cars	6	7		
Medium Truck	-	1		
Heavy Truck	-	-		
Buses				
Motorcycles				

HANSON Engineering | Planning | Allied Services	SOUND MONITORING DATA FORM East Street Over Norfolk Southern RR Wabash, IN

SITE INFORMATION

Site: **R17**		**Investigator(s):** Ali Whitehead, Lane Page	**Weather Conditions**
			Temp (°F) 75°
			Wind (mph) ENE 5 mph
Meter ID: 971			**RH (%)** 46%
Meter Serial No.	40342		**Description:** Sunny
Data File(s): 48			

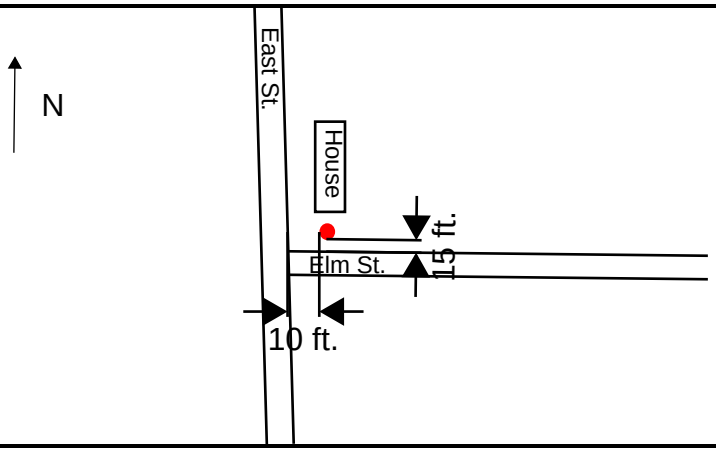
Start of Data Logging		**End of Data Logging**		**Start of Data Logging**		**End of Data Logging**	
Date:	8/12/22	**Date:**	8/12/22	**Date:**		**Date:**	
Time:	2:07pm	**Time:**	2:23pm	**Time:**		**Time:**	
		Duration:	15:02			**Duration:**	

DESCRIPTION OF SURROUNDINGS

Physical layout:

X **Picture of Monitor and Location**

● Noise Monitor



Measured Level: 56.66 dB(A)

Major sound generator: East Street

ADDITIONAL NOTES

Date	Time	Comment

TRAFFIC DATA

Roadway	East St. Northbound	East St. Southbound	Elm St. Eastbound	Elm St. Westbound
Cars	6	2	2	2
Medium Truck	-	-	-	-
Heavy Truck	-	-	-	-
Buses				
Motorcycles				

HANSON
Engineering | Planning | Allied Services

SOUND MONITORING DATA FORM

East Street Over Norfolk Southern RR
Wabash, IN

Appendix C – Sound Level Meter Calibration Certificates

e-mail: service@sensidyne.com Tel.: +727-530-3602 ext. 781 www.sensidyne.com

SENSIDYNE®
Industrial Health & Safety Instrumentation
Calibration Laboratory

1000 112th Circle North Suite 100
Saint Petersburg, FL 33716
USA

ACCREDITED
Certificate No. 3943.01

CALIBRATION CERTIFICATE

Date of issue: September 2, 2021 **Certificate No:** 020921-2 **Page:** 1/2

OBJECT OF CALIBRATION	Sound calibrator type SV 34, serial number 48777, manufacturer Svantek.
APPLICANT	U.S. Environmental Rental 781 Industrial Drive Elmhurst, IL 60126
CALIBRATION METHOD	Method described in instruction W10101 "Calibration of Acoustic Calibrators", ", rev -, dated 09/03/15, written on the basis of international standard EN IEC 60942:2005 Electroacoustics – Sound calibrators.
ENVIRONMENTAL CONDITIONS	Temperature: (24.0 ÷ 24.3) °C Ambient pressure: (101.34 ÷ 101.36) kPa Relative humidity: (53.0 ÷ 52.5) %
DATE OF CALIBRATION	2021-09-02
TRACEABILITY	This certificate is issued under the agreement EA MLA in the field of calibration and provides traceability of measurement results to the standards maintained in the Central Office of Measures.
CALIBRATION RESULTS	The results are presented on page 2 of this certificate including measurement uncertainty.
UNCERTAINTY OF MEASUREMENTS	Uncertainty of measurement has been evaluated in compliance with EA-4/02:2013 and listed on page 2. The expanded uncertainty assigned corresponds to a coverage probability of 95 % and the coverage factor $k = 2$.
CONFORMITY WITH REQUIREMENTS	On the basis of the calibration results, it has been found that sound calibrator meets metrological requirements specified in the standard EN 60942 Electroacoustics – Sound calibrators, for class 1.

CALIBRATION RESULTS Calibration results are the following:

For nominal level 94 dB

1. Sound pressure level generated by the sound calibrator in the reference conditions of 101,325 kPa for static pressure, 23 °C for temperature and 50 % for relative humidity results:

(0.00 ± 0,15) dB

2. Frequency of sound pressure results:

(0.00 ± 0,1) Hz

3. Total harmonic distortion of sound pressure results:

(0.00 ± 0,12) %

For nominal level 114 dB

1. Sound pressure level generated by the sound calibrator in the reference conditions of 101,325 kPa for static pressure, 23 °C for temperature and 50 % for relative humidity results:

(114.01 ± 0,15) dB

2. Frequency of sound pressure results:

(999.96 ± 0,1) Hz

3. Total harmonic distortion of sound pressure results:

(0.20 ± 0,12) %

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SENSIDYNE®
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ACCREDITED
Certificate No. 3943.01

CALIBRATION CERTIFICATE

Date of issue: September 13, 2021 **Certificate No:** 130921-1 **Page:** 1/6

OBJECT OF CALIBRATION	Sound level meter type SVAN 971, number 40342, manufacturer SVANTEK with preamplifier type SV18, number 33312, manufacturer SVANTEK and microphone type 7052E, number 73409, manufacturer ACO.
APPLICANT	U.S. Environmental Rental 781 Industrial Dr. Elmhurst, IL 60126
CALIBRATION METHOD	Method described in instruction WI0102 "Calibration of Sound Level Meters", rev -, dated 09/03/15, written on the basis of international standard EN IEC 61672-3:2006 Electroacoustics. Part 3: Periodic tests.
ENVIRONMENTAL CONDITIONS	Temperature: (23.5 ÷ 23.7) °C Ambient pressure: (101.8 ÷ 101.9) kPa Relative humidity: (43 ÷ 49) %
DATE OF CALIBRATION	13-09-2021
TRACEABILITY	Calibration results were referred to primary standard of sound pressure maintained in the Central Office of Measures with the application of the working standard – sound calibrator type SV 30A, No 48714, manufactured by SVANTEK.
CALIBRATION RESULTS	The results are presented on pages 2 ÷ 6 of this certificate including measurement uncertainty.
UNCERTAINTY OF MEASUREMENTS	Uncertainty of measurement has been evaluated in compliance with EA-4/02:2013. The expanded uncertainty assigned corresponds to a coverage probability of 95 % and the coverage factor $k = 2$.
CONFORMITY WITH REQUIREMENTS	On the basis of the calibration results, it has been found that sound level meter meets metrological requirements specified in the standard IEC 61672-1:2002 Electroacoustics – Sound level meters. Part 1: Specifications, for class 1.

CALIBRATION RESULTS Calibration results are the following:

1. **Indication at the calibration check frequency**

The sound level meter was calibrated in compliance with the instruction manual. During this process, the indication of this SLM was adjusted to the sound pressure level of the sound level calibrator type SV 30A, No 48714, from SVANTEK. The sound pressure level was corrected by the free-field factor.

Deviation of the acoustic pressure measurement of the A-weighted sound level using the sound calibrator type SV 30A, No 48714, from SVANTEK, was made according to the standard reference conditions: for static pressure 101,325 kPa, for temperature 23 °C and for relative humidity 50 %, results:

(0.0 ± 0.2) dB

The deviation was determined as a difference between the measured sound level and the sound level corrected by the free-field factor appropriate to mentioned sound calibrator.

2. **Self-generated noise with microphone installed**

Frequency weighting	A
The highest level of self-generated noise stated in the instruction manual [dB]	15,0
Indication [dB]	11.1

3. **Self-generated noise with microphone replaced by the electrical input signal device**

Frequency weighting	A	C	Z
The highest expected level of self-generated noise stated in the instruction manual [dB]	12.0	12.0	17.0
Level of self-generated noise [dB]	5.6	5.7	13.6

4. **Acoustical signal tests of a frequency weighting C**

Frequency [Hz]	The deviation of frequency weighting [dB]	Extended uncertainty [dB]	Tolerance limits [dB]
125,0	-0.1	0,3	±1,5
1000,0	0.0	0,3	±1,1
4000,0	0.7	0,4	±1,6
8000,0	1.2	0,4	-3,1; +2,5

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5. Electrical signal tests of frequency weightings

Frequency [Hz]	The deviation of frequency weighting [dB]			Extended uncertainty [dB]	Tolerance limits [dB]
	A	C	Z		
63,0	0.0	-0.1	0.0	0,3	±1,5
125,0	0.0	0.0	0.0	0,3	±1,5
250,0	-0.2	-0.1	-0.1	0,3	±1,4
500,0	-0.1	0.0	0.0	0,3	±1,4
1000,0	0.1	0.1	0.1	0,3	±1,1
2000,0	0.5	0.5	0.5	0,3	±1,6
4000,0	0.7	0.7	0.7	0,3	±1,6
8000,0	1.0	1.0	0.9	0,4	-3,1; +2,5
16000,0	-0.3	-0.4	-0.1	0,6	-17,0; +3,5

6. Frequency and time weightings at 1 kHz

	Sound level				Time-averaged sound level
Frequency weighting	A	A	C	Z	A
Time weighting	Fast	Slow	Fast	Fast	-
Indication [dB]	114.0	114.0	114.0	114.0	114.0
The deviation of indication from the indication of A-weighted sound level with Fast time weighting [dB]		0.0	0.0	0.0	0.0
Extended uncertainty [dB]		0.1			
Tolerance limits [dB]		±0,3	±0,4	±0,4	±0,3

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7. Level linearity on the reference level range

Range: HIGH

Expected sound level [dB]	Level linearity error [dB]	Extended uncertainty [dB]	Tolerance limits [dB]
122.0	0.0		
121.0	0.0		
120.0	0.0		
119.0	0.0		
118.0	0.0		
117.0	0.0		
116.0	0.0		
115.0	0.0		
114.0	0.0		
109.0	0.0		
104.0	0.0		
99.0	0.0		
94.0	0.0		
89.0	0.0		
84.0	0.0	0,2	
79.0	0.0		
74.0	0.0		±1,1
69.0	0.0		
64.0	0.0		
59.0	0.0		
54.0	0.0		
49.0	0.0		
44.0	0.0		
39.0	0.0		
34.0	0.0		
33.0	0.0		
32.0	0.0		
31.0	0.0		
30.0	0.0		
29.0	0.0		
28.0	0.0		
27.0	0.0	0,3	
26.0	0.0		
25.0	0.1		

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8. Level linearity including the level range control

Level range	HIGH	LOW
Indication for the reference sound pressure level [dB]	114.0	114.0
The deviation of indication [dB]		0.0
Anticipated level that is 5 dB less than the upper limit specified in the instruction manual for level range at 1 kHz [dB]	118.0	132.0
Indication [dB]	118.0	132.0
The deviation of indication [dB]	0.0	0.0
Extended uncertainty [dB]	0.2	
Tolerance limits [dB]	±1,1	

9. Toneburst response

Measurement quantity	Time weighting	Toneburst duration [ms]	The indications in response to toneburst relative to the steady sound level [dB]	Reference toneburst response relative to the steady sound level [dB]	The deviations of the measured toneburst in responses from the corresponding reference toneburst [dB]	Extended uncertainty [dB]	Tolerance limits [dB]
Time-weighted sound level	Fast	200	-1.0	-1,0	0.0	0.2	±0,8
		2	-18.0	-18,0	0.0		-1,8; +1,3
		0,25	-27.1	-27,0	-0.1		-3,3; +1,3
Time-weighted sound level	Slow	200	-7.5	-7,4	-0.1		±0,8
		2	-27.1	-27,0	-0.1		-1,8; +1,3
Sound exposure level	-	200	-7.0	-7,0	0.0		±0,8
		2	-27.0	-27,0	0.0		-1,8; +1,3
		0,25	-36.1	-36,0	-0.1		-3,3; +1,3

10. Peak C sound level

Numbers of cycles in test signal	Frequency of test signal [Hz]	The deviation of indication [dB]	Extended uncertainty [dB]	Tolerance limits [dB]
One	8000	-0.5	0,2	±2,4
Positive half-cycle	500	0.0		±1,4
Negative half-cycle	500	0.0		

11. Overload indication

Frequency weighting A

The difference between the levels of the positive and negative one-half-cycles input signals that first cause the displays of overload indication [dB]	Extended uncertainty [dB]	Maximum value of the difference [dB]
0.2	0,3	1,8

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Date of issue: September 13, 2021 **Certificate No:** 130921-1 **Page:** 6/6

Appendix D – Predicted Noise Levels

Hanson 1 November 2022
EMS/AW TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 17H0145 - Wabash
RUN: Calibration
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R4	1	1	0.0	50.0	66	50.0	10	----	50.0	0.0	8	-8.0
R2	2	1	0.0	54.1	66	54.1	10	----	54.1	0.0	8	-8.0
R17	3	1	0.0	54.6	66	54.6	10	----	54.6	0.0	8	-8.0
R5	4	1	0.0	54.3	66	54.3	10	----	54.3	0.0	8	-8.0
R15	5	1	0.0	50.5	66	50.5	10	----	50.5	0.0	8	-8.0
R7	6	1	0.0	51.0	66	51.0	10	----	51.0	0.0	8	-8.0
R9	7	1	0.0	52.8	66	52.8	10	----	52.8	0.0	8	-8.0
R11	8	1	0.0	48.0	66	48.0	10	----	48.0	0.0	8	-8.0
R14	9	1	0.0	46.1	66	46.1	10	----	46.1	0.0	8	-8.0
R13	10	1	0.0	50.1	66	50.1	10	----	50.1	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	10	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Hanson 1 November 2022
EMS/AW TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 17H0145 - Wabash
RUN: Existing/No-Build
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1-1	1	1	0.0	50.3	66	50.3	10	----	50.3	0.0	8	-8.0
R1-10	2	1	0.0	48.4	66	48.4	10	----	48.4	0.0	8	-8.0
R1-11	3	1	0.0	49.7	66	49.7	10	----	49.7	0.0	8	-8.0
R1-12	4	1	0.0	49.2	66	49.2	10	----	49.2	0.0	8	-8.0
R1-13	5	1	0.0	48.0	66	48.0	10	----	48.0	0.0	8	-8.0
R1-14	6	1	0.0	52.5	66	52.5	10	----	52.5	0.0	8	-8.0
R1-15	7	1	0.0	48.0	66	48.0	10	----	48.0	0.0	8	-8.0
R1-16	8	1	0.0	51.7	66	51.7	10	----	51.7	0.0	8	-8.0
R1-2	9	1	0.0	43.0	66	43.0	10	----	43.0	0.0	8	-8.0
R1-3	10	1	0.0	40.4	66	40.4	10	----	40.4	0.0	8	-8.0
R1-4	12	1	0.0	42.1	66	42.1	10	----	42.1	0.0	8	-8.0
R1-5	13	1	0.0	43.4	66	43.4	10	----	43.4	0.0	8	-8.0
R1-6	14	1	0.0	51.9	66	51.9	10	----	51.9	0.0	8	-8.0
R1-7	15	1	0.0	51.9	66	51.9	10	----	51.9	0.0	8	-8.0
R1-8	16	1	0.0	52.6	66	52.6	10	----	52.6	0.0	8	-8.0
R1-9	17	1	0.0	49.6	66	49.6	10	----	49.6	0.0	8	-8.0
R10-1	18	1	0.0	53.0	66	53.0	10	----	53.0	0.0	8	-8.0
R10-2	19	1	0.0	52.5	66	52.5	10	----	52.5	0.0	8	-8.0
R11-1	20	1	0.0	44.4	66	44.4	10	----	44.4	0.0	8	-8.0
R11-2	21	1	0.0	45.0	66	45.0	10	----	45.0	0.0	8	-8.0

R11-3	22	1	0.0	44.0	66	44.0	10	----	44.0	0.0	8	-8.0
R11-4	23	1	0.0	44.1	66	44.1	10	----	44.1	0.0	8	-8.0
R11-5	24	1	0.0	46.3	66	46.3	10	----	46.3	0.0	8	-8.0
R11-6	25	1	0.0	46.1	66	46.1	10	----	46.1	0.0	8	-8.0
R11-7	26	1	0.0	48.7	66	48.7	10	----	48.7	0.0	8	-8.0
R11-8	27	1	0.0	49.3	66	49.3	10	----	49.3	0.0	8	-8.0
R12-1	28	1	0.0	50.2	66	50.2	10	----	50.2	0.0	8	-8.0
R12-2	29	1	0.0	53.0	66	53.0	10	----	53.0	0.0	8	-8.0
R13-1	30	1	0.0	53.9	66	53.9	10	----	53.9	0.0	8	-8.0
R13-2	31	1	0.0	55.1	66	55.1	10	----	55.1	0.0	8	-8.0
R14-1	32	1	0.0	46.3	66	46.3	10	----	46.3	0.0	8	-8.0
R15-1	33	1	0.0	52.4	66	52.4	10	----	52.4	0.0	8	-8.0
R15-2	34	1	0.0	52.6	66	52.6	10	----	52.6	0.0	8	-8.0
R15-3	35	1	0.0	49.8	66	49.8	10	----	49.8	0.0	8	-8.0
R15-4	36	1	0.0	41.0	66	41.0	10	----	41.0	0.0	8	-8.0
R15-5	37	1	0.0	43.1	66	43.1	10	----	43.1	0.0	8	-8.0
R15-6	38	1	0.0	41.4	66	41.4	10	----	41.4	0.0	8	-8.0
R16-1	39	1	0.0	52.9	66	52.9	10	----	52.9	0.0	8	-8.0
R16-2	40	1	0.0	52.0	66	52.0	10	----	52.0	0.0	8	-8.0
R16-3	41	1	0.0	52.5	66	52.5	10	----	52.5	0.0	8	-8.0
R16-4	42	1	0.0	47.8	66	47.8	10	----	47.8	0.0	8	-8.0
R16-5	43	1	0.0	41.4	66	41.4	10	----	41.4	0.0	8	-8.0
R16-6	44	1	0.0	40.5	66	40.5	10	----	40.5	0.0	8	-8.0
R16-7	45	1	0.0	40.9	66	40.9	10	----	40.9	0.0	8	-8.0
R16-8	46	1	0.0	47.2	66	47.2	10	----	47.2	0.0	8	-8.0
R16-9	47	1	0.0	48.0	66	48.0	10	----	48.0	0.0	8	-8.0
R17-1	48	1	0.0	52.4	66	52.4	10	----	52.4	0.0	8	-8.0
R17-10	49	1	0.0	47.9	66	47.9	10	----	47.9	0.0	8	-8.0
R17-11	50	1	0.0	47.3	66	47.3	10	----	47.3	0.0	8	-8.0
R17-12	51	1	0.0	35.5	66	35.5	10	----	35.5	0.0	8	-8.0
R17-13	52	1	0.0	36.0	66	36.0	10	----	36.0	0.0	8	-8.0
R17-14	53	1	0.0	37.3	66	37.3	10	----	37.3	0.0	8	-8.0
R17-15	54	1	0.0	40.9	66	40.9	10	----	40.9	0.0	8	-8.0
R17-2	55	1	0.0	52.0	66	52.0	10	----	52.0	0.0	8	-8.0
R17-3	56	1	0.0	52.8	66	52.8	10	----	52.8	0.0	8	-8.0
R17-4	57	1	0.0	54.2	66	54.2	10	----	54.2	0.0	8	-8.0
R17-5	58	1	0.0	54.7	66	54.7	10	----	54.7	0.0	8	-8.0

R17-6	59	1	0.0	48.4	66	48.4	10	----	48.4	0.0	8	-8.0
R17-7	60	1	0.0	48.2	66	48.2	10	----	48.2	0.0	8	-8.0
R17-8	61	1	0.0	47.5	66	47.5	10	----	47.5	0.0	8	-8.0
R17-9	62	1	0.0	48.1	66	48.1	10	----	48.1	0.0	8	-8.0
R2-1	63	1	0.0	52.1	66	52.1	10	----	52.1	0.0	8	-8.0
R2-2	64	1	0.0	50.4	66	50.4	10	----	50.4	0.0	8	-8.0
R2-3	65	1	0.0	49.9	66	49.9	10	----	49.9	0.0	8	-8.0
R2-4	66	1	0.0	49.3	66	49.3	10	----	49.3	0.0	8	-8.0
R2-5	67	1	0.0	50.1	66	50.1	10	----	50.1	0.0	8	-8.0
R2-6	68	1	0.0	51.0	66	51.0	10	----	51.0	0.0	8	-8.0
R2-7	69	1	0.0	49.2	66	49.2	10	----	49.2	0.0	8	-8.0
R2-8	70	1	0.0	51.1	66	51.1	10	----	51.1	0.0	8	-8.0
R3-1	71	1	0.0	49.3	66	49.3	10	----	49.3	0.0	8	-8.0
R3-2	72	1	0.0	50.5	66	50.5	10	----	50.5	0.0	8	-8.0
R3-3	73	1	0.0	50.0	66	50.0	10	----	50.0	0.0	8	-8.0
R3-4	74	1	0.0	49.9	66	49.9	10	----	49.9	0.0	8	-8.0
R3-5	75	1	0.0	47.7	66	47.7	10	----	47.7	0.0	8	-8.0
R3-6	76	1	0.0	51.1	66	51.1	10	----	51.1	0.0	8	-8.0
R3-7	77	1	0.0	50.8	66	50.8	10	----	50.8	0.0	8	-8.0
R4-1	78	1	0.0	52.4	66	52.4	10	----	52.4	0.0	8	-8.0
R4-2	79	1	0.0	52.8	66	52.8	10	----	52.8	0.0	8	-8.0
R4-3	80	1	0.0	45.5	66	45.5	10	----	45.5	0.0	8	-8.0
R4-4	81	1	0.0	47.2	66	47.2	10	----	47.2	0.0	8	-8.0
R4-5	82	1	0.0	52.7	66	52.7	10	----	52.7	0.0	8	-8.0
R4-6	84	1	0.0	51.5	66	51.5	10	----	51.5	0.0	8	-8.0
R4-7	85	1	0.0	51.1	66	51.1	10	----	51.1	0.0	8	-8.0
R4-8	86	1	0.0	51.8	66	51.8	10	----	51.8	0.0	8	-8.0
R4-9	87	1	0.0	52.4	66	52.4	10	----	52.4	0.0	8	-8.0
R5-1	88	1	0.0	47.8	66	47.8	10	----	47.8	0.0	8	-8.0
R5-10	89	1	0.0	52.2	66	52.2	10	----	52.2	0.0	8	-8.0
R5-11	90	1	0.0	53.0	66	53.0	10	----	53.0	0.0	8	-8.0
R5-2	91	1	0.0	47.3	66	47.3	10	----	47.3	0.0	8	-8.0
R5-3	92	1	0.0	50.0	66	50.0	10	----	50.0	0.0	8	-8.0
R5-4	93	1	0.0	48.2	66	48.2	10	----	48.2	0.0	8	-8.0
R5-5	94	1	0.0	49.2	66	49.2	10	----	49.2	0.0	8	-8.0
R5-6	95	1	0.0	48.3	66	48.3	10	----	48.3	0.0	8	-8.0
R5-7	96	1	0.0	49.1	66	49.1	10	----	49.1	0.0	8	-8.0

R5-8	97	1	0.0	47.3	66	47.3	10	----	47.3	0.0	8	-8.0
R5-9	98	1	0.0	51.9	66	51.9	10	----	51.9	0.0	8	-8.0
R6-1	99	1	0.0	52.9	66	52.9	10	----	52.9	0.0	8	-8.0
R6-10	100	1	0.0	50.3	66	50.3	10	----	50.3	0.0	8	-8.0
R6-11	101	1	0.0	49.3	66	49.3	10	----	49.3	0.0	8	-8.0
R6-12	102	1	0.0	48.3	66	48.3	10	----	48.3	0.0	8	-8.0
R6-13	103	1	0.0	48.6	66	48.6	10	----	48.6	0.0	8	-8.0
R6-14	104	1	0.0	48.7	66	48.7	10	----	48.7	0.0	8	-8.0
R6-15	105	1	0.0	49.6	66	49.6	10	----	49.6	0.0	8	-8.0
R6-16	106	1	0.0	52.0	66	52.0	10	----	52.0	0.0	8	-8.0
R6-17	107	1	0.0	52.6	66	52.6	10	----	52.6	0.0	8	-8.0
R6-18	108	1	0.0	51.7	66	51.7	10	----	51.7	0.0	8	-8.0
R6-2	109	1	0.0	54.3	66	54.3	10	----	54.3	0.0	8	-8.0
R6-3	110	1	0.0	53.8	66	53.8	10	----	53.8	0.0	8	-8.0
R6-4	111	1	0.0	53.7	66	53.7	10	----	53.7	0.0	8	-8.0
R6-5	112	1	0.0	53.5	66	53.5	10	----	53.5	0.0	8	-8.0
R6-6	113	1	0.0	53.3	66	53.3	10	----	53.3	0.0	8	-8.0
R6-7	114	1	0.0	54.8	66	54.8	10	----	54.8	0.0	8	-8.0
R6-8	115	1	0.0	51.6	66	51.6	10	----	51.6	0.0	8	-8.0
R6-9	116	1	0.0	53.1	66	53.1	10	----	53.1	0.0	8	-8.0
R7-1	117	1	0.0	50.0	66	50.0	10	----	50.0	0.0	8	-8.0
R7-2	118	1	0.0	50.0	66	50.0	10	----	50.0	0.0	8	-8.0
R7-3	119	1	0.0	49.2	66	49.2	10	----	49.2	0.0	8	-8.0
R7-4	120	1	0.0	49.1	66	49.1	10	----	49.1	0.0	8	-8.0
R7-5	121	1	0.0	48.9	66	48.9	10	----	48.9	0.0	8	-8.0
R7-6	122	1	0.0	50.2	66	50.2	10	----	50.2	0.0	8	-8.0
R7-7	123	1	0.0	50.1	66	50.1	10	----	50.1	0.0	8	-8.0
R7-8	124	1	0.0	50.6	66	50.6	10	----	50.6	0.0	8	-8.0
R7-9	125	1	0.0	50.6	66	50.6	10	----	50.6	0.0	8	-8.0
R8-1	126	1	0.0	49.0	66	49.0	10	----	49.0	0.0	8	-8.0
R8-2	127	1	0.0	43.2	66	43.2	10	----	43.2	0.0	8	-8.0
R9-1	128	1	0.0	51.7	66	51.7	10	----	51.7	0.0	8	-8.0
R9-2	129	1	0.0	46.6	66	46.6	10	----	46.6	0.0	8	-8.0
R9-3	130	1	0.0	48.7	66	48.7	10	----	48.7	0.0	8	-8.0
R9-4	131	1	0.0	42.1	66	42.1	10	----	42.1	0.0	8	-8.0
R9-5	132	1	0.0	43.3	66	43.3	10	----	43.3	0.0	8	-8.0
R9-6	133	1	0.0	50.7	66	50.7	10	----	50.7	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	131	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Hanson 28 December 2022
EMS/AW TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 17H0145 - Wabash
RUN: Proposed
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1-1	1	1	0.0	50.3	66	50.3	10	----	50.3	0.0	8	-8.0
R1-10	2	1	0.0	48.5	66	48.5	10	----	48.5	0.0	8	-8.0
R1-11	3	1	0.0	49.7	66	49.7	10	----	49.7	0.0	8	-8.0
R1-12	4	1	0.0	49.2	66	49.2	10	----	49.2	0.0	8	-8.0
R1-13	5	1	0.0	48.0	66	48.0	10	----	48.0	0.0	8	-8.0
R1-14	6	1	0.0	52.5	66	52.5	10	----	52.5	0.0	8	-8.0
R1-15	7	1	0.0	48.0	66	48.0	10	----	48.0	0.0	8	-8.0
R1-16	8	1	0.0	51.7	66	51.7	10	----	51.7	0.0	8	-8.0
R1-2	9	1	0.0	42.9	66	42.9	10	----	42.9	0.0	8	-8.0
R1-3	10	1	0.0	40.2	66	40.2	10	----	40.2	0.0	8	-8.0
R1-4	12	1	0.0	41.4	66	41.4	10	----	41.4	0.0	8	-8.0
R1-5	13	1	0.0	42.3	66	42.3	10	----	42.3	0.0	8	-8.0
R1-6	14	1	0.0	51.6	66	51.6	10	----	51.6	0.0	8	-8.0
R1-7	15	1	0.0	51.8	66	51.8	10	----	51.8	0.0	8	-8.0
R1-8	16	1	0.0	52.4	66	52.4	10	----	52.4	0.0	8	-8.0
R1-9	17	1	0.0	49.5	66	49.5	10	----	49.5	0.0	8	-8.0
R10-1	18	1	0.0	52.9	66	52.9	10	----	52.9	0.0	8	-8.0
R10-2	19	1	0.0	52.2	66	52.2	10	----	52.2	0.0	8	-8.0
R11-1	20	1	0.0	44.2	66	44.2	10	----	44.2	0.0	8	-8.0
R11-2	21	1	0.0	45.1	66	45.1	10	----	45.1	0.0	8	-8.0
R11-3	22	1	0.0	44.1	66	44.1	10	----	44.1	0.0	8	-8.0
R11-4	23	1	0.0	44.2	66	44.2	10	----	44.2	0.0	8	-8.0
R11-5	24	1	0.0	46.5	66	46.5	10	----	46.5	0.0	8	-8.0
R11-6	25	1	0.0	46.2	66	46.2	10	----	46.2	0.0	8	-8.0

R11-7	26	1	0.0	48.8	66	48.8	10	----	48.8	0.0	8	-8.0
R11-8	27	1	0.0	49.3	66	49.3	10	----	49.3	0.0	8	-8.0
R12-1	28	1	0.0	50.2	66	50.2	10	----	50.2	0.0	8	-8.0
R12-2	29	1	0.0	53.0	66	53.0	10	----	53.0	0.0	8	-8.0
R13-1	30	1	0.0	53.9	66	53.9	10	----	53.9	0.0	8	-8.0
R13-2	31	1	0.0	55.1	66	55.1	10	----	55.1	0.0	8	-8.0
R14-1	32	1	0.0	46.4	66	46.4	10	----	46.4	0.0	8	-8.0
R15-1	33	1	0.0	52.3	66	52.3	10	----	52.3	0.0	8	-8.0
R15-2	34	1	0.0	52.5	66	52.5	10	----	52.5	0.0	8	-8.0
R15-3	35	1	0.0	47.8	66	47.8	10	----	47.8	0.0	8	-8.0
R15-4	36	1	0.0	40.7	66	40.7	10	----	40.7	0.0	8	-8.0
R15-5	37	1	0.0	42.6	66	42.6	10	----	42.6	0.0	8	-8.0
R15-6	38	1	0.0	41.3	66	41.3	10	----	41.3	0.0	8	-8.0
R16-1	39	1	0.0	52.9	66	52.9	10	----	52.9	0.0	8	-8.0
R16-2	40	1	0.0	51.9	66	51.9	10	----	51.9	0.0	8	-8.0
R16-3	41	1	0.0	52.5	66	52.5	10	----	52.5	0.0	8	-8.0
R16-4	42	1	0.0	47.7	66	47.7	10	----	47.7	0.0	8	-8.0
R16-5	43	1	0.0	41.1	66	41.1	10	----	41.1	0.0	8	-8.0
R16-6	44	1	0.0	40.3	66	40.3	10	----	40.3	0.0	8	-8.0
R16-7	45	1	0.0	40.7	66	40.7	10	----	40.7	0.0	8	-8.0
R16-8	46	1	0.0	47.2	66	47.2	10	----	47.2	0.0	8	-8.0
R16-9	47	1	0.0	48.0	66	48.0	10	----	48.0	0.0	8	-8.0
R17-1	48	1	0.0	51.6	66	51.6	10	----	51.6	0.0	8	-8.0
R17-10	49	1	0.0	47.9	66	47.9	10	----	47.9	0.0	8	-8.0
R17-11	50	1	0.0	47.3	66	47.3	10	----	47.3	0.0	8	-8.0
R17-12	51	1	0.0	34.8	66	34.8	10	----	34.8	0.0	8	-8.0
R17-13	52	1	0.0	35.1	66	35.1	10	----	35.1	0.0	8	-8.0
R17-14	53	1	0.0	36.0	66	36.0	10	----	36.0	0.0	8	-8.0
R17-15	54	1	0.0	39.2	66	39.2	10	----	39.2	0.0	8	-8.0
R17-2	55	1	0.0	51.6	66	51.6	10	----	51.6	0.0	8	-8.0
R17-3	56	1	0.0	52.6	66	52.6	10	----	52.6	0.0	8	-8.0
R17-4	57	1	0.0	54.1	66	54.1	10	----	54.1	0.0	8	-8.0
R17-5	58	1	0.0	54.7	66	54.7	10	----	54.7	0.0	8	-8.0
R17-6	59	1	0.0	48.4	66	48.4	10	----	48.4	0.0	8	-8.0
R17-7	60	1	0.0	48.1	66	48.1	10	----	48.1	0.0	8	-8.0
R17-8	61	1	0.0	47.4	66	47.4	10	----	47.4	0.0	8	-8.0
R17-9	62	1	0.0	48.1	66	48.1	10	----	48.1	0.0	8	-8.0
R2-1	63	1	0.0	52.1	66	52.1	10	----	52.1	0.0	8	-8.0
R2-2	64	1	0.0	50.4	66	50.4	10	----	50.4	0.0	8	-8.0
R2-3	65	1	0.0	49.9	66	49.9	10	----	49.9	0.0	8	-8.0
R2-4	66	1	0.0	49.3	66	49.3	10	----	49.3	0.0	8	-8.0

R2-5	67	1	0.0	50.2	66	50.2	10	----	50.2	0.0	8	-8.0
R2-6	68	1	0.0	51.0	66	51.0	10	----	51.0	0.0	8	-8.0
R2-7	69	1	0.0	48.7	66	48.7	10	----	48.7	0.0	8	-8.0
R2-8	70	1	0.0	50.9	66	50.9	10	----	50.9	0.0	8	-8.0
R3-1	71	1	0.0	49.3	66	49.3	10	----	49.3	0.0	8	-8.0
R3-2	72	1	0.0	50.5	66	50.5	10	----	50.5	0.0	8	-8.0
R3-3	73	1	0.0	50.0	66	50.0	10	----	50.0	0.0	8	-8.0
R3-4	74	1	0.0	49.9	66	49.9	10	----	49.9	0.0	8	-8.0
R3-5	75	1	0.0	47.8	66	47.8	10	----	47.8	0.0	8	-8.0
R3-6	76	1	0.0	50.7	66	50.7	10	----	50.7	0.0	8	-8.0
R3-7	77	1	0.0	50.8	66	50.8	10	----	50.8	0.0	8	-8.0
R4-1	78	1	0.0	52.4	66	52.4	10	----	52.4	0.0	8	-8.0
R4-2	79	1	0.0	52.9	66	52.9	10	----	52.9	0.0	8	-8.0
R4-3	80	1	0.0	45.6	66	45.6	10	----	45.6	0.0	8	-8.0
R4-4	81	1	0.0	47.2	66	47.2	10	----	47.2	0.0	8	-8.0
R4-5	82	1	0.0	52.7	66	52.7	10	----	52.7	0.0	8	-8.0
R4-6	84	1	0.0	51.5	66	51.5	10	----	51.5	0.0	8	-8.0
R4-7	85	1	0.0	51.1	66	51.1	10	----	51.1	0.0	8	-8.0
R4-8	86	1	0.0	51.6	66	51.6	10	----	51.6	0.0	8	-8.0
R4-9	87	1	0.0	52.4	66	52.4	10	----	52.4	0.0	8	-8.0
R5-1	88	1	0.0	47.8	66	47.8	10	----	47.8	0.0	8	-8.0
R5-10	89	1	0.0	51.3	66	51.3	10	----	51.3	0.0	8	-8.0
R5-11	90	1	0.0	53.0	66	53.0	10	----	53.0	0.0	8	-8.0
R5-2	91	1	0.0	47.3	66	47.3	10	----	47.3	0.0	8	-8.0
R5-3	92	1	0.0	50.0	66	50.0	10	----	50.0	0.0	8	-8.0
R5-4	93	1	0.0	48.3	66	48.3	10	----	48.3	0.0	8	-8.0
R5-5	94	1	0.0	49.3	66	49.3	10	----	49.3	0.0	8	-8.0
R5-6	95	1	0.0	48.4	66	48.4	10	----	48.4	0.0	8	-8.0
R5-7	96	1	0.0	49.2	66	49.2	10	----	49.2	0.0	8	-8.0
R5-8	97	1	0.0	47.4	66	47.4	10	----	47.4	0.0	8	-8.0
R5-9	98	1	0.0	51.1	66	51.1	10	----	51.1	0.0	8	-8.0
R6-1	99	1	0.0	52.9	66	52.9	10	----	52.9	0.0	8	-8.0
R6-10	100	1	0.0	50.2	66	50.2	10	----	50.2	0.0	8	-8.0
R6-11	101	1	0.0	49.3	66	49.3	10	----	49.3	0.0	8	-8.0
R6-12	102	1	0.0	48.3	66	48.3	10	----	48.3	0.0	8	-8.0
R6-13	103	1	0.0	48.6	66	48.6	10	----	48.6	0.0	8	-8.0
R6-14	104	1	0.0	48.7	66	48.7	10	----	48.7	0.0	8	-8.0
R6-15	105	1	0.0	49.5	66	49.5	10	----	49.5	0.0	8	-8.0
R6-16	106	1	0.0	52.0	66	52.0	10	----	52.0	0.0	8	-8.0
R6-17	107	1	0.0	52.6	66	52.6	10	----	52.6	0.0	8	-8.0
R6-18	108	1	0.0	51.7	66	51.7	10	----	51.7	0.0	8	-8.0

R6-2	109	1	0.0	54.3	66	54.3	10	----	54.3	0.0	8	-8.0
R6-3	110	1	0.0	53.8	66	53.8	10	----	53.8	0.0	8	-8.0
R6-4	111	1	0.0	53.7	66	53.7	10	----	53.7	0.0	8	-8.0
R6-5	112	1	0.0	53.5	66	53.5	10	----	53.5	0.0	8	-8.0
R6-6	113	1	0.0	53.3	66	53.3	10	----	53.3	0.0	8	-8.0
R6-7	114	1	0.0	54.7	66	54.7	10	----	54.7	0.0	8	-8.0
R6-8	115	1	0.0	51.4	66	51.4	10	----	51.4	0.0	8	-8.0
R6-9	116	1	0.0	53.3	66	53.3	10	----	53.3	0.0	8	-8.0
R7-1	117	1	0.0	50.0	66	50.0	10	----	50.0	0.0	8	-8.0
R7-2	118	1	0.0	50.0	66	50.0	10	----	50.0	0.0	8	-8.0
R7-3	119	1	0.0	49.2	66	49.2	10	----	49.2	0.0	8	-8.0
R7-4	120	1	0.0	49.1	66	49.1	10	----	49.1	0.0	8	-8.0
R7-5	121	1	0.0	48.9	66	48.9	10	----	48.9	0.0	8	-8.0
R7-6	122	1	0.0	50.2	66	50.2	10	----	50.2	0.0	8	-8.0
R7-7	123	1	0.0	50.1	66	50.1	10	----	50.1	0.0	8	-8.0
R7-8	124	1	0.0	50.6	66	50.6	10	----	50.6	0.0	8	-8.0
R7-9	125	1	0.0	50.7	66	50.7	10	----	50.7	0.0	8	-8.0
R8-1	126	1	0.0	50.0	66	50.0	10	----	50.0	0.0	8	-8.0
R8-2	127	1	0.0	43.4	66	43.4	10	----	43.4	0.0	8	-8.0
R9-1	128	1	0.0	51.2	66	51.2	10	----	51.2	0.0	8	-8.0
R9-2	129	1	0.0	46.7	66	46.7	10	----	46.7	0.0	8	-8.0
R9-3	130	1	0.0	48.8	66	48.8	10	----	48.8	0.0	8	-8.0
R9-4	131	1	0.0	42.1	66	42.1	10	----	42.1	0.0	8	-8.0
R9-5	132	1	0.0	43.2	66	43.2	10	----	43.2	0.0	8	-8.0
R9-6	133	1	0.0	50.6	66	50.6	10	----	50.6	0.0	8	-8.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	131	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Appendix E – Traffic Data

East/Spring		
2023 AADT	995	VPD
2043 AADT	995	VPD
2045 DHV	90	VPH
Directional Distribution	52	%
Speed Limit	30	MPH
Trucks	0	%

Data from TRAX Traffic Report for this project

Walnut/Maple		
2023 AADT	496	VPD
2043 AADT	496	VPD
2045 DHV	49	VPH
Directional Distribution	54	%
Speed Limit	30	MPH
Trucks	0	%

Data from TCDS website

Hill		
2023 AADT	1,000	VPD
2043 AADT	1,000	VPD
2045 DHV	109	VPH
Directional Distribution	65	%
Speed Limit	30	MPH
Trucks	0	%

Data from TCDS website

Date: February 21, 2023

To: Andrew Passmore, NEPA Review Team Lead
Indiana Department of Transportation, Environmental Services Division

From: Victoria Veach, Ecologist
SJCA Inc.

Re: Additional Information for Des No. 1801915 and Des No. 1900837, North (N.) East Street (St) over Norfolk Southern Railroad Grade Separation Project, City of Wabash, Wabash County, Indiana

Introduction

This Additional Information (Al) memorandum provides supplemental information for the MAP-21 Early Right-of-Way (ROW) Acquisition Categorical Exclusion Level 1 (CE-1) document that was approved on November 10, 2022, for the N. East St over Norfolk Southern Railroad Grade Separation project in the City of Wabash, Wabash County, Indiana. This Al memorandum provides a revised Project Description, Other Alternatives Considered, and ROW Sections, clarifies which parcels are included in the MAP-21 Early ROW Acquisition project, and adds three firm commitments to the document. A revised Aerial Map showing the parcels included in the MAP-21 Early ROW Acquisition project and a revised table detailing the amount of ROW required for each parcel are located in Appendix A. Unless specifically discussed in this document, the impacts identified in the approved MAP-21 CE document remain unchanged. The approved MAP-21 CE document, including the attachments, is located in Appendix B.

Purpose and Need

The need for this project arises from the City of Wabash, with administrative oversight from the Indiana Department of Transportation (INDOT), planning to proceed with the N. East St Railroad Grade Separation project. The demanding schedule has necessitated accelerating delivery of project components. In order to capitalize on economic conditions and fiscal constraints of highway funding, this project seeks to reduce project costs and shorten project delivery schedule, including real estate acquisition. The purpose of this project is to protect the City of Wabash and INDOT from speculative purchase of potential ROW and is needed to begin the process of land acquisition services as early as possible.

Original Project Description

The City of Wabash, with administrative oversight from INDOT, is proposing to complete advance acquisition of permanent ROW from 12 parcels. Temporary ROW only will be acquired from 4 parcels (Parcels 15, 17, 18, 19); these parcels are included in the documentation for this MAP-21 CE, but they will not be part of the MAP-21 early acquisition process. Permanent ROW from 2 parcels (Parcels 2 and 3) has already been acquired using State and Local Funds; these parcels are included in the documentation for this MAP-21 CE, but they will not be part of the MAP-21 early acquisition process. In total, the N. East St over Norfolk Southern Railroad Grade Separation Project will acquire permanent and/or temporary ROW from 18 parcels. A total of 10 relocations will occur as part of the N. East St over Norfolk Southern Railroad Grade Separation Project (Parcels 2, 3, 4, 5, 6, 7, 8, 9, 11, 12). The location of the properties is unique and irregular. As shown in the attached location map (Appendix B12), the properties are located within the limits of the proposed alternative for this project. The draft environmental document is underway for the project. In addition, the City of Wabash intends to proceed (following all standard procedures) with the acquisition of ROW from Parcels 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, and 16 to facilitate construction of the N. East Street over Norfolk Southern Railroad Grade Separation Project in the City of Wabash, Wabash County, Indiana (Des Nos 1801915 and 1900837). ROW services and land, improvements, and damages are expected to be paid using local, state, and federal funds. Please see Appendix B13 for ROW acquisition as well as land, damages, and relocations payments per parcel.

Revised Project Description, including updates to parcels included in MAP-21 Early Acquisition CE

The original project description included discussion of all parcels that the N. East St over Norfolk Southern Railroad Grade Separation Project will acquire ROW from, but not all parcels are included in the MAP-21 Early ROW Acquisition request due to already being purchased using local funds (Parcels 2 and 3) or protection under Section 4(f) (Parcels 17, 18, and 19). To provide clarification, the revised project description includes only the parcels that are included in the MAP-21 Early ROW Acquisition request.

The City of Wabash, with administrative oversight from INDOT, is proposing to complete advance acquisition of ROW from a total of 13 parcels. Permanent ROW will be acquired from 12 parcels (Parcels 1, 4, 6, 7, 8, 9, 10, 11, 12, 13, 16) and temporary ROW from two parcels (Parcels 13, 15). Please note that both permanent and temporary ROW will be acquired from parcel 13. All ROW will be acquired from residential properties. Eight of the 12 parcels included in the early acquisition of permanent ROW will be fully acquired and relocated (Parcels 4, 5, 6, 7, 8, 9, 11, 12). The location of the properties is unique and irregular. As shown in the attached location map (Appendix A1) the properties are located within the limits of the preliminary preferred alternative to raise the grade profile of N. East St and construct a new bridge to carry N. East St over the Norfolk Southern Railroad. A draft National Environmental Policy Act (NEPA) environmental document is underway for the project. In addition, the City of Wabash intends to proceed (following all standard procedures) with the acquisition of ROW from Parcels 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16 to facilitate construction of the N. East St over Norfolk Southern Railroad Grade Separation Project in the City of Wabash, Wabash County, Indiana (Des Nos 1801915 and 1900837). The ROW acquisition is expected to be paid using local, state, and federal funds. Please see Appendix A2 for ROW acquisition as well as payments to be made per parcel.

Under the Moving Ahead for Progress in the 21st Century Act (MAP-21) regulations, advance acquisition of ROW from these parcels is possible, and is a prudent and reasonable option at these specific locations where ROW acquisition is certain to occur under the preliminary preferred alternative. The advance acquisition of ROW from these isolated properties has independent utility and will not cause any adverse environmental impacts and will not limit the choice of reasonable alternatives or prevent an impartial decision between alternatives. All acquisitions will follow the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act) as required.

The ongoing NEPA review and preparation of the draft NEPA environmental document includes grade separation alternatives at five different railroad crossings within the City of Wabash (Wabash St, Huntington St, Allen St, Spring St, and Washington St). Purchase of the parcels for the preliminary preferred alternative, N. East St over Norfolk Southern Railroad, included in this document will not influence the outcome of the ongoing NEPA review. If the N. East St over Norfolk Southern Railroad alternative is not pursued at the completion of the NEPA review, the City of Wabash and INDOT will initiate a new design process, including NEPA review and ROW acquisition, for a new preferred alternative. These are included as firm commitments.

Other Alternatives Considered

The Other Alternatives Considered included in the approved MAP-21 CE document are alternatives being considered in the draft NEPA environmental document, including Wabash St over Norfolk Southern Railroad, Huntington St over Norfolk Southern Railroad, Spring St over Norfolk Southern Railroad, Washington St over Norfolk Southern Railroad, and No Build. The revised Other Alternatives Considered Section is:

No Advance Acquisition: This alternative would construct the preferred alternative, following the completion of the NEPA environmental document, without utilizing the allowable advanced acquisition of right-of-way per MAP-21 regulations. This alternative would substantially lengthen the timeline required for construction of the project and affect the project schedule. Therefore, this alternative was dismissed.

Revised Right-of-Way

This project is a buy and hold for ROW only. All parcels will remain in their current state until the NEPA environmental document for the N. East St over Norfolk Southern Railroad Grade Separation Project is approved by INDOT and Federal Highway Administration (FHWA). ROW will also be acquired from additional parcels not included in this MAP-21 CE. Purchase of ROW from the additional parcels will begin after the approval of the NEPA document.

A total of 1.515 acres of new permanent ROW will be acquired in order to construct a new bridge to carry N. East St over the Norfolk Southern Railroad. Of this permanent ROW acquisition, 0.464 acre is excess land. The excess land is not needed in order to complete the project, and the existing property owner has the right to retain the excess land if they wish; however, it is not anticipated that existing property owners will retain the excess land. A total of 0.034 acre of temporary ROW will be acquired to reconstruct a residential drive and to reconstruct a segment of sidewalk in the northeast quadrant of the N. East St and Maple St intersection that will be disturbed by the reconstruction of N. East St. All new permanent and temporary ROW will be acquired from a total of 13 residential properties. The original MAP-21 CE stated that the N. East St over Norfolk Southern Railroad Grade Separation Project will acquire permanent and/or temporary ROW from a total of 18 parcels, which is still an accurate statement. However, only the parcels listed in the revised project description and below, totaling 13 parcels, are included in the MAP-21 Early ROW Acquisition request and this document.

Permanent ROW will be acquired from 12 properties: Parcels 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16. Of these, eight parcels will be fully acquired and relocated: Parcels 4, 5, 6, 7, 8, 9, 11, 12.

Temporary ROW will be acquired from two parcels: Parcels 13, 15.

Please see Appendix A1 for the parcels affected by the N. East St over Norfolk Southern Railroad Project and Appendix A2 for a table detailing the ROW and estimated acquisition cost per parcel.

Environmental Commitments

The following firm commitments are required for the project:

1. This project is for buy and hold only. No demolitions or ground disturbing activities will occur until the NEPA review is complete and approved by the appropriate agencies for the N. East Street over Norfolk Southern Railroad Grade Separation Project. (FHWA)
2. Purchase of the parcels for the preliminary preferred alternative, N. East St over Norfolk Southern Railroad, included in this document will not influence the outcome of the ongoing NEPA review. (FHWA)
3. If the preliminary proposed N. East St over Norfolk Southern Railroad preferred alternative is not pursued at the completion of the NEPA review, the City of Wabash and INDOT will initiate a new design process, including NEPA review and ROW acquisition, for a new preferred alternative. (FHWA)

Summary

The purpose of this AI memorandum is to provide a revised Project Description, Other Alternatives Considered, and ROW Sections, clarify which parcels are included in the MAP-21 Early ROW Acquisition project, and add three firm commitments to the document. Unless otherwise stated in this AI document, all information and conclusions from the approved MAP-21 CE-1 document remain valid.

Approved by:

Andrew Passmore
NEPA Review Team Lead

March 1, 2023
Date

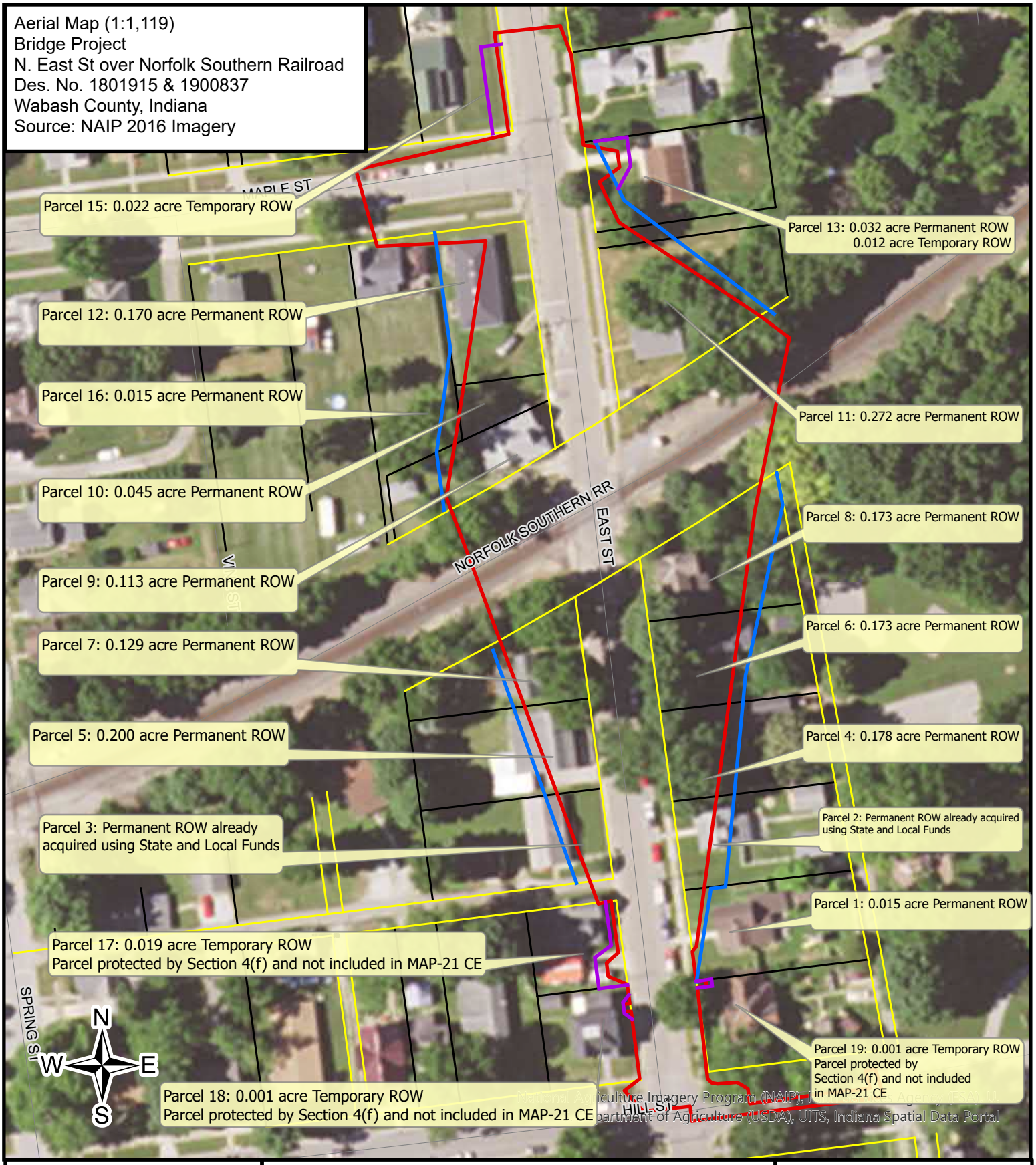
Appendices

Appendix A: Revised Attachments

- A1 Aerial Map
- A2 Parcel Acquisition Cost Estimate

Appendix B: Original Approved MAP-21 CE-1 Document, including attachments

Appendix A: Revised Attachments


Aerial Map (1:1,119)
Bridge Project
N. East St over Norfolk Southern Railroad
Des. No. 1801915 & 1900837
Wabash County, Indiana
Source: NAIP 2016 Imagery
Parcel 15: 0.022 acre Temporary ROW
Parcel 13: 0.032 acre Permanent ROW
0.012 acre Temporary ROW
Parcel 12: 0.170 acre Permanent ROW
Parcel 16: 0.015 acre Permanent ROW
Parcel 11: 0.272 acre Permanent ROW
Parcel 10: 0.045 acre Permanent ROW
NORFOLK SOUTHERN RR
EAST ST
Parcel 8: 0.173 acre Permanent ROW
Parcel 9: 0.113 acre Permanent ROW
Parcel 6: 0.173 acre Permanent ROW
Parcel 7: 0.129 acre Permanent ROW
Parcel 5: 0.200 acre Permanent ROW
Parcel 4: 0.178 acre Permanent ROW
Parcel 3: Permanent ROW already
acquired using State and Local Funds
Parcel 2: Permanent ROW already acquired
using State and Local Funds
Parcel 1: 0.015 acre Permanent ROW
Parcel 17: 0.019 acre Temporary ROW
Parcel protected by Section 4(f) and not included in MAP-21 CE
SPRING ST
N
W
E
S
Parcel 19: 0.001 acre Temporary ROW
Parcel protected by
Section 4(f) and not included
in MAP-21 CE
Parcel 18: 0.001 acre Temporary ROW
Parcel protected by Section 4(f) and not included in MAP-21 CE
HILL ST
National Agriculture Imagery Program (NAIP), [illegible] Agency (FSA),
partment of Agriculture (USDA), UITS, Indiana Spatial Data Portal
0
70
140
Feet
Construction Limits
Parcel Boundary
Existing ROW
Proposed Permanent ROW
Proposed Temporary ROW
2/21/2023
SJCA

N. East St over Norfolk Southern Railroad
Des 1801915 & 1900837

Parcel	Owner	Permanent R/W Acreage	Temporary R/W Acreage	Excess Land R/W Acreage	Land	Damages	Relocation	Parcel Total
1	Erick J. Smith	0.015	0.000	0.000	$10,000	$25,000	$0	$35,000
2	Mark T. Worrick & Lorna L. Worrick							
3	Dorothy S. Gardner							
4	Adam D. Rensberger	0.080	0.000	0.098	$100,000	$0	$90,000	$190,000
5	The Hettmansperger Family Trust	0.073	0.000	0.127	$100,000	$0	$90,000	$190,000
6	Elizabeth K. Hall	0.107	0.000	0.066	$100,000	$0	$90,000	$190,000
7	Jeffrey H. Smith	0.081	0.000	0.048	$80,000	$0	$90,000	$170,000
8	John Shepherd & Carol Shepherd	0.148	0.000	0.025	$100,000	$0	$90,000	$190,000
9	Chris Beachler & Raelynn Beachler	0.076	0.000	0.037	$80,000	$0	$90,000	$170,000
10	Wabash County	0.045	0.000	0.000	$5,000	$0	$0	$5,000
11	Billy E. Clifton Jr. & James R. Clifton	0.209	0.000	0.063	$120,000	$0	$90,000	$210,000
12	Jeffrey B. Ravenscroft & Timothy L. Ravenscroft	0.170	0.000	0.000	$100,000	$0	$90,000	$190,000
13	Vivian A. Wampler	0.032	0.012	0.000	$12,000	$28,000	$0	$40,000
15	James E. Clifton	0.000	0.022	0.000	$1,000	$0	$0	$1,000
16	Jackie D. Hubbard Sr. & Diana L. Hubbard	0.015	0.000	0.000	$2,500	$0	$0	$2,500
17	Shawn L. Burkholder	0.000	0.019	0.000	$1,000	$0	$0	$1,000
18	Steve R. & Tina R. Burger	0.000	0.001	0.000	$1,000	$0	$0	$1,000
19	Phillip Bernon Woodward	0.000	0.001	0.000	$1,000	$0	$0	$1,000
	Subtotals	1.051	0.055	0.464	$813,500	$53,000	$720,000	$1,586,500
						10% Contingency =		$158,650
					Project R/W Total for Early Acquisition =			$1,745,150

*Parcels 2 and 3 have already been acquired using state and local funds.

*Parcels 17, 18, and 19 are protected by Section 4(f) and are not included in the early ROW acquisition request.

*One other parcel in the northeast quadrant of the project area (Parcel 14) had ROW acquisition planned, but it was later removed after design changes reduced the size of the project area in that location.

Appendix B: Original Approved MAP-21 Document

FHWA-Indiana Environmental Document

CATEGORICAL EXCLUSION LEVEL 1 FORM

GENERAL PROJECT INFORMATION

Road No./County:	North (N.) East Street (St), Wabash County
Designation Number(s):	1801915 (N. East St Reconstruction)/1900837 (Bridge Construction)
Project Description/Termini:	This document serves as a MAP-21 Early Acquisition CE for the construction of a new bridge to carry N. East St over the Norfolk Southern Railroad. Project termini extend from the intersection of N. East St and Hill St to approximately 85 feet north of Maple St. Along Hill St, project termini extend approximately 140 feet east of N. East St. Along Maple St, project termini extend approximately 125 feet west of N. East St.

[X] **CE Level 1 documentation for exempted projects**

[ ] **Additional Information to CE Level 1**

Approval: Nicole Fohey-Breting — Digitally signed by Nicole Fohey-Breting, Date: 2022.11.10 10:01:48 -05'00'

INDOT DE/ESD Signature and Date

Release for Public Involvement: _____

INDOT DE/ESD Initials and Date

Certification of Public involvement: _____

INDOT Consultant Services Signature and Date

INDOT DE/ESD Reviewer: _____

Signature and Date

CE Preparer: Victoria Veach, SJCA Inc.

Name and Organization

Version: December 2021

GENERAL PROJECT INFORMATION, DESCRIPTION, AND DESIGN INFORMATION	
Purpose and Need:	**Need**: As the City of Wabash, with administrative oversight from the Indiana Department of Transportation (INDOT), plans to proceed with the N. East St Railroad Grade Separation project. The demanding schedule has necessitated accelerating delivery of project components. In order to capitalize on economic conditions and fiscal constraints of highway funding, this project seeks to reduce project costs and shorten project delivery schedule, including real estate acquisition. **Purpose**: The purpose of this project is to protect the City of Wabash and INDOT from speculative purchase of potential right-of-way (ROW) and is needed to begin the process of land acquisition services as early as possible.
Project Description (Preferred Alternative):	The City of Wabash, with administrative oversight from INDOT, is proposing to complete advance acquisition of permanent ROW from 12 parcels. Temporary ROW only will be acquired from 4 parcels (Parcels 15, 17, 18, 19); these parcels are included in the documentation for this MAP-21 CE, but they will not be part of the MAP-21 early acquisition process. Permanent ROW from 2 parcels (Parcels 2 and 3) has already been acquired using State and Local Funds; these parcels are included in the documentation for this MAP-21 CE, but they will not be part of the MAP-21 early acquisition process. In total, the N. East St over Norfolk Southern Railroad Grade Separation Project will acquire permanent and/or temporary ROW from 18 parcels. A total of 10 relocations will occur as part of the N. East St over Norfolk Southern Railroad Grade Separation Project (Parcels 2, 3, 4, 5, 6, 7, 8, 9, 11, 12). The location of the properties is unique and irregular. As shown in the attached location map (Exhibit A1), the properties are located within the limits of the proposed alternative for this project. The draft environmental document is underway for the project. In addition, the City of Wabash intends to proceed (following all standard procedures) with the acquisition of ROW from Parcels 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, and 16 to facilitate construction of the N. East Street over Norfolk Southern Railroad Grade Separation Project in the City of Wabash, Wabash County, Indiana (Des Nos 1801915 and 1900837). ROW services and land, improvements, and damages are expected to be paid using local, state, and federal funds. Please see Exhibit A2 for ROW acquisition as well as land, damages, and relocations payments per parcel. Under the Moving Ahead for Progress in the 21st Century Act (MAP-21) regulations, advance acquisition of ROW from these parcels is possible, and is a prudent and reasonable option at these specific locations where ROW acquisition is certain to occur under the preferred alternative. The advance acquisition of ROW from these isolated properties has independent utility and will not cause any adverse environmental impacts and will not limit the choice of reasonable alternatives or prevent an impartial decision between alternatives. An alternatives analysis determined that the N. East St over Norfolk Southern Railroad alternative would have the shortest project length and the least impact to historic resources; therefore, bridge and roadway design and advance acquisition of ROW to construct this alternative is proceeding. A discussion of the other alternatives considered is included below, and a table summarizing the impacts incurred by each alternative is attached (Exhibit A3). The purchase of ROW within these proposed advanced acquisition parcels in no way restricts the federal agency from moving forward with the preferred alternative. All acquisitions will follow the Uniform Act as required.
Other Alternatives Considered:	In addition to the preferred alternative, 5 additional grade-separation alternatives and a Do Nothing alternative were considered. No underpass alternatives were considered

	due to the existing topography of the City of Wabash. The existing rail line sits in a valley through Wabash, favoring an overpass at each alternative location. Underpasses are also less desirable per the Indiana Design Manual (IDM). A table summarizing all alternatives considered is included in Exhibit A3. <u>Wabash Street over Norfolk Southern Railroad</u> This alternative consists of the reconstruction of Wabash St to provide a grade separated crossing over the railroad. Wabash St, also known as SR 13, travels north-south and is classified as an Urban Minor Arterial. This alternative would extend between Canal St and Maple St, and it would raise the profile grade of Wabash St. Within the project area, Wabash St is mostly within the Downtown Wabash Historic District (NR-0799), but it is also within the West Wabash Historic District (NR 0891) and the East Wabash Historic District (NR-1916). The reconstruction of Wabash St would impact 2 parcels in the East Wabash Historic District (NR-1916); one of the parcels that would be impacted is rated as Outstanding. Reconstruction of Wabash St would also impact several Contributing properties in the Downtown Wabash Historic District (NR-0799) and 1 Contributing property in the West Wabash Historic District (NR-0891). Reconstruction of Wabash St would also impact 2 properties that are individually listed on the National Register of Historic Places (NRHP): the Solomon Wilson Building (NR-0581), located at 102 S Wabash St, and the James Amoss Building (NR-0582), located at 110 S Wabash St. The reconstruction of Wabash St would potentially require 4 Individual Section 4(f) evaluations. Canal St, Market St, Main St, Hill St, and Sinclair St would all need to be reconstructed and their profile grades would need raised in order to tie into the newly reconstructed Wabash St. This would extend the project area further into the Downtown Wabash Historic District (NR-0799), the West Wabash Historic District (NR-0891), and the East Wabash Historic District (NR-1916). This would create additional impacts to historic resources. Other resources that may be affected by this alternative include the Downtown Cultural Trail, a planned trail along Wabash St, Hill St, and Canal St and the Wabash County Courthouse located in the southwest quadrant of the Wabash St and Hill St intersection. Several hazardous material concerns including underground storage tanks (USTs), leaking underground storage tanks (LUSTs), a Resource Conservation and Recovery Act (RCRA) site, a Voluntary Remediation site, and a Brownfield site are located within the proposed project area for this alternative and would require investigation to determine what impacts these may have on the proposed project. Permanent right-of-way (ROW) would be necessary for this alternative. It is estimated that this alternative would require permanent ROW or significant damages payments from 43 parcels for the reconstruction of Wabash St only. Additional ROW and/or damages payments would be required for the reconstruction of Canal St, Market St, Main St, Hill St, and Sinclair St. This alternative would meet the purpose and need of the project by improving the mobility and by ensuring access to all public and private services in Wabash during stopped train events or long passing trains. However, compared to the other alternatives considered, this alternative would have the longest project area and would require ROW from the highest number of parcels. This alternative would also impact 3 different historic districts as well as 2 resources that are individually listed on the NRHP, requiring multiple Individual Section 4(f) evaluations. One (1) planned trail, the

	Wabash County Courthouse, and several hazardous material concern sites may also be impacted by this alternative. Additionally, this alternative would require reconstruction of 5 cross streets, which would create additional impacts to historic resources and social services and would cause greater disruptions to traffic in Wabash during construction. Due to these factors, it was determined that this alternative was not feasible; therefore, this alternative was removed from further consideration. <u>Huntington St over Norfolk Southern Railroad</u> This alternative consists of the reconstruction of Huntington St to provide a grade separated crossing over the railroad. Huntington St travels north-south and is classified as an Urban Local Street. This alternative would extend between Main St and Maple St, and it would raise the profile grade of Huntington St. Within the project area, Huntington St is entirely within the East Wabash Historic District (NR-1916). The reconstruction of Huntington St would impact 18 parcels within the East Wabash Historic District (NR-1916). Hill St, Sinclair St, and Maple St would all need to be reconstructed and their profile grades would need raised in order to tie into the newly reconstructed Huntington St. This would extend the project further into the East Wabash Historic District (NR-1916) and would create additional impacts to historic resources. This alternative would permanently incorporate the East Wabash Historic District (NR-1916) into a transportation facility and would potentially require an Individual Section 4(f) evaluation. No hazardous material concern sites were identified within the project area associated with this alternative; however, hazardous material concern sites located on Market St and Wabash St would need to be researched in order to determine if any contamination present extends into the project area. No public facilities or services other than utilities were identified within the project area associated with this alternative. Permanent ROW would be necessary for this alternative. It is estimated that this alternative would require permanent ROW or significant damages payments from 18 parcels for the reconstruction of Huntington St only. Additional ROW and/or damages payments would be required for the reconstruction and elevation of Hill St, Sinclair St, and Maple St. This alternative would meet the purpose and need of the project by improving the mobility and by ensuring access to all public and private services in Wabash during stopped train events or long passing trains. However, compared to the other alternatives considered, reconstruction of Huntington St would impact the greatest number of properties located within a historic district. Additionally, this alternative would require reconstruction of 3 cross streets, which would create additional impacts to historic resources and would cause greater disruptions to traffic in Wabash during construction. Due to these factors, it was determined that this alternative was not feasible; therefore, this alternative was removed from further consideration. <u>Allen St over Norfolk Southern Railroad</u> This alternative consists of the reconstruction of Allen St to provide a grade separated crossing over the railroad. Allen St travels north-south and is classified as an Urban Major Collector. This alternative would extend between Main St and Maple St, and it would raise the profile grade of Allen St. Within the project area, Allen St is mostly within the East Wabash Historic District (NR-1916).

	The reconstruction of Allen St would impact 17 parcels within the East Wabash Historic District (NR-1916). Hill St, Sinclair St, and Maple St would all need to be reconstructed and their profile grades would need raised in order to tie into the newly reconstructed Allen St. This would extend the project further into the East Wabash Historic District (NR-1916) and would create additional impacts to historic resources. This alternative would permanently incorporate the East Wabash Historic District (NR-1916) into a transportation facility and would potentially require an Individual Section 4(f) evaluation. While no hazardous material concern sites were identified within the proposed project area for this alternative, 1 former landfill, the Wabash Burning Dump, was identified near the southern terminus of the proposed project area at the intersection of Allen St and Market St. No public facilities or services other than utilities were identified within the project area associated with this alternative. Permanent ROW would be required for this alternative. It is estimated that permanent ROW or significant damages payments would be required from 19 parcels for the reconstruction of Allen St. Additional permanent ROW and/or damages payments would be required for the reconstruction and elevation of Main St, Hill St, Sinclair St, and Maple St. This alternative would meet the purpose and need of the project by improving the mobility and by ensuring access to all public and private services in Wabash during stopped train events or long passing trains. However, compared to the other alternatives considered, reconstruction of Allen St would require a long project area and it would impact a high number of properties located within a historic district. Additionally, this alternative would require reconstruction of 4 cross streets, which would create additional impacts to historic resources and would cause greater disruptions to traffic in Wabash during construction. Due to these factors, it was determined that this alternative was not feasible; therefore, this alternative was removed from further consideration. <u>Spring St over Norfolk Southern Railroad</u> This alternative consists of the reconstruction of Spring St to provide a grade separated crossing over the railroad. Spring St travels north-south and is classified as an Urban Local Street. This alternative would begin a little north of Main St and would extend to Maple St. This alternative would raise the profile grade of Spring St. Within the project area, Spring St is mostly within the East Wabash Historic District (NR-1916). The reconstruction of Spring St would impact 10 parcels within the East Wabash Historic District (NR-1916). Hill St, Sinclair St, and Maple St would all need to be reconstructed and their profile grades would need raised in order to tie into the newly reconstructed Spring St. This would extend the project further into the East Wabash Historic District (NR-1916) and would create additional impacts to historic resources. This alternative would permanently incorporate the East Wabash Historic District (NR-1916) into a transportation facility and would potentially require an Individual Section 4(f) evaluation. No hazardous material concern sites or public facilities and services other than utilities were identified within the proposed project area for this alternative. Permanent ROW would be required for this alternative. It is estimated that permanent ROW or significant damages payments would be required from 15 parcels for the

	reconstruction of Spring St. Additional permanent ROW and/or damages payments would be required for the reconstruction and elevation of Hill St, Sinclair St, and Maple St. This alternative would meet the purpose and need of the project by improving the mobility and by ensuring access to all public and private services in Wabash during stopped train events or long passing trains. However, compared to the other alternatives considered, reconstruction of Spring St would impact a high number of properties located within a historic district. Additionally, this alternative would require reconstruction of 3 cross streets, which would create additional impacts to historic resources and would cause greater disruptions to traffic in Wabash during construction. Due to these factors, it was determined that this alternative was not feasible; therefore, this alternative was removed from further consideration. <u>Washington St over Norfolk Southern Railroad</u> This alternative consists of the reconstruction of Washington St to provide a grade separated crossing over the railroad. Washington St travels north-south and is classified as an Urban Local Street. Washington St currently ends in a dead end on the north side of the railroad, and this alternative would extend Washington St and construct a new intersection at Hill St. The profile grade of the existing portion of Washington St would be raised. Most of the project area associated with this alternative is outside the limits of the East Wabash Historic District (NR-1916). This alternative would impact 2 parcels within the East Wabash Historic District (NR-1916). Hill St and Elm St would need reconstructed and their profile grades would need raised in order to tie into the newly reconstructed/extended Washington St. This would extend the project area, but it would not likely result in additional impacts to the East Wabash Historic District (NR-1916). This alternative would permanently incorporate the East Wabash Historic District (NR-1916) into a transportation facility and it would potentially require an Individual Section 4(f) evaluation. No hazardous material concern sites that may impact the project were identified in or adjacent to the proposed project area, but this alternative would impact Hanna Park, a public park and Section 4(f) resource. A Section 4(f) evaluation would be required for impacts to this resource. Permanent ROW would be required for this alternative. It is estimated that permanent ROW or significant damages payments would need to be acquired from 24 parcels for the reconstruction of Washington St and Hill St. Additional ROW and/or damages payments would be required along Elm St to tie into the newly reconstructed Washington St. This alternative would meet the purpose and need of the project by improving the mobility and by ensuring access to all public and private services in Wabash during stopped train events or long passing trains. However, compared to the other alternatives considered, reconstruction of Washington St would have the second longest overall project length and would require ROW from the second highest number of parcels. This alternative would also impact Hanna Park, a public park and Section 4(f) resource. Additionally, this alternative would require reconstruction of 2 cross streets in order to tie into the newly reconstructed/extended Washington St, causing greater disruption to traffic operations. Compared to other alternatives considered, this alternative minimizes impacts to cultural and historic resources; therefore, this alternative was considered feasible. However, since this alternative would impact Hanna Park and would require ROW acquisition from a high number of

	properties compared to other alternatives considered, this alternative was removed from further consideration. No Build A No Build alternative was considered. This alternative would allow the existing roadway and crossings to remain in place with no improvements, which will result in continued at-grade crossings and blocked emergency vehicles when long trains pass through Wabash and during stopped train events. This alternative does not meet the need, nor does it achieve the purpose of the project. Therefore, this alternative was discarded from further consideration.
Funding Source(s):	[X] Federal [X] State [X] Local [ ] Other
Project Sponsor:	The City of Wabash
Estimated Cost:	$1,745,150 (ROW only, FY2023) — **Project Length:** Approximately 800 feet (0.15 mile)
Public Involvement:	**No: X** **Yes:**
The Categorical Exclusion covers buy and hold of ROW from affected parcels and does not meet the public hearing requirements under INDOT policy. Public involvement activities have taken place for the N. East St over Norfolk Southern Railroad Grade Separation project. In early 2021, a website was established to provide information about the project (https://www.cityofwabash.com/department/index.php?structureid=49). On February 24, 2021, a card advertising the project and a public information meeting scheduled for March 2021 was mailed to 3,358 homes and/or businesses in the City of Wabash. A virtual public information meeting was held via the Zoom platform on March 9, 2021 and an in-person public information meeting was held at the Eagles Theater (106 W. Market St, Wabash, IN) on March 16, 2021. A second public information meeting was held at the Eagles Theater on April 26, 2022. Prior to the meeting, approximately 450 residents of the City of Wabash were mailed information advertising the project and the meeting. Letters were sent on August 30, 2021 to residents owning property within the proposed project area alerting them that the project intends to acquire their property, including all buildings located on the parcel. Please see Exhibit A4 for a sample letter that was sent to property owners. The owners of Parcels 5 and 12 reached out to WSP USA requesting that acquisition take place as soon as possible. Please see Exhibit A5 for a summary of those discussions.	
Right-of-Way:	**No:** **Yes: X**
This project is a buy and hold for ROW only. All parcels will remain in their current state until the environmental document for the N. East St over Norfolk Southern Railroad Grade Separation Project is approved by INDOT and Federal Highway Administration (FHWA). A total of 1.16 acres of new permanent ROW will be acquired in order to construct the new bridge over the Norfolk Southern Railroad. A total of 0.056 acre of temporary ROW will be acquired in order to reconstruct 2 residential drives, 2 staircases providing access to residences from N. East St, and to reconstruct a segment of sidewalk in the northeast quadrant of the N. East St and Maple St intersection that will be disturbed by the reconstruction of N. East St. All new permanent and temporary ROW will be acquired from residential properties. Ten (10) residential properties will be fully acquired and relocated. Excess land from these properties makes up 0.738 acre of the total new permanent ROW amount. The excess land is not needed in order to complete the project, and the existing property owner has the right to retain the excess land if they wish. It is not anticipated that existing property owners will retain the excess land. The parcels that will be fully acquired are parcels 2, 3, 4, 5, 6, 7, 8, 9, 11, and 12.	

Parcels 2 and 3 have already been acquired using 100% Local Funds. Please see Exhibit A1 for the parcels affected by the N. East St over Norfolk Southern Railroad project. All acquisitions will follow the uniform act as required.

Temporary ROW is not included in the MAP-21 early acquisition process, but the information is included in this document for clarity and documentation purposes. The City of Wabash intends to proceed (following all standard procedures) with the acquisition of ROW from Parcels 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, and 16 to facilitate construction of the N. East Street over Norfolk Southern Railroad Grade Separation Project in the City of Wabash, Wabash County, Indiana (Des Nos 1801915 and 1900837). ROW services and land, improvements, and damages are expected to be paid using local, state, and federal funds. Please see Exhibit A2 for ROW acquisition as well as land, damages, and relocations payments per parcel.

Please note that the proposed permanent ROW lines shown on Exhibit A1 represent only the ROW required to construct the new bridge and to reconstruct N. East St, but the permanent ROW amounts reported for Parcels 4-9 and 11-12 in Exhibit A2 reflect acquisition of the entire parcel.

The ROW to be acquired as part of this project will facilitate the development of the N. East St over Norfolk Southern Railroad Grade Separation project.

Maintenance of Traffic (MOT) During Construction:	**No: X**	**Yes:**
This project is a buy and hold for ROW only. All parcels will remain in their current state until the environmental document for the N. East St over Norfolk Southern Railroad project is approved by INDOT and FHWA.		

Bridge(s) and/or Small Structure(s) (include structure number(s)):	**No: X**	**Yes:**
This project is a buy and hold for ROW only. No bridges or small structures will be involved. Land use for the impacted parcels is typical for residential areas, including maintained lawns, scattered trees, and occupied residences. All parcels will remain in their current state until the environmental document for the N. East St over Norfolk Southern Railroad project is approved by INDOT and FHWA.		

IDENTIFICATION AND EVALUATION OF IMPACTS

Early Coordination:

Early coordination efforts are not required for this undertaking. This project is a buy and hold for ROW only. All parcels will remain in their current state until the environmental document for the N. East St over Norfolk Southern Railroad project is approved by INDOT and FHWA.

Streams, Rivers, and Other Jurisdictional Features Impacted:	**No: X**	**Yes:**
This project is a buy and hold for ROW only. No streams, rivers, or watercourses will be impacted. All parcels will remain in their current state until the environmental document for the N. East St over Norfolk Southern Railroad project is approved by INDOT and FHWA.		

Open Water Feature(s):	**No: X**	**Yes:**
This project is a buy and hold for ROW only. No open water features will be impacted. All parcels will remain in their current state until the environmental document for the N. East St over Norfolk Southern Railroad project is approved by INDOT and FHWA.		

Wetlands:	**No: X**	**Yes:**
This project is a buy and hold for ROW only. No wetlands will be impacted. All parcels will remain in their current state until the environmental document for the N. East St over Norfolk Southern Railroad project is approved by INDOT and FHWA.		
Terrestrial Habitat:	**No: X**	**Yes:**
This project is a buy and hold for ROW only. Disturbance of terrestrial habitat will not occur. All parcels will remain in their current state until the environmental document for the N. East St over Norfolk Southern Railroad project is approved by INDOT and FHWA.		
Protected Species:	**No: X**	**Yes:**
This project is a buy and hold for ROW only. No threatened or endangered species will be impacted. All parcels will remain in their current state until the environmental document for the N. East St over Norfolk Southern Railroad project is approved by INDOT and FHWA.		
Geological and Mineral Resources:	**No: X**	**Yes:**
This project is a buy and hold for ROW only. The project is located outside the designated Indiana Karst Region as outlined in the most current *Protection of Karst Features during Project Development and Construction*. No karst features are known to exist within or adjacent to the proposed project area. All parcels will remain in their current state until the environmental document for the N. East St over Norfolk Southern Railroad project is approved by INDOT and FHWA.		
Drinking Water Resources:	**No: X**	**Yes:**
This project is a buy and hold for ROW only. No drinking water resources will be impacted. All parcels will remain in their current state until the environmental document for the N. East St over Norfolk Southern Railroad project is approved by INDOT and FHWA.		
Floodplains:	**No: X**	**Yes:**
This project is a buy and hold for ROW only. No regulated floodplains will be impacted. All parcels will remain in their current state until the environmental document for the N. East St over Norfolk Southern Railroad project is approved by INDOT and FHWA.		
Farmland:	**No: X**	**Yes:**
This project is a buy and hold for ROW only. No impacts to farmland will occur. All parcels will remain in their current state until the environmental document for the N. East St over Norfolk Southern Railroad project is approved by INDOT and FHWA.		
Cultural Resources:	**No: X**	**Yes:**
This project is a buy and hold for ROW only. The East Wabash Historic District (NR-1916), an NRHP listed historic resource, is within the project area. A full Section 106 review was completed for this project, and the results of the review and the impacts to cultural resources will be documented in the environmental document for the N. East St		

over Norfolk Southern Railroad project. All parcels will remain in their current state until the environmental document for the N. East St over Norfolk Southern Railroad project is approved by INDOT and FHWA.

Section 4(f) and Section 6(f) Resources:	**No: X**	**Yes:**

This project is a buy and hold for ROW only. No conversion of Section 4(f) or Section 6(f) resources will occur. A Red Flag Investigation (RFI) was completed for the N. East St over Norfolk Southern Railroad project and approved by INDOT Site Assessment & Management (SAM) on September 30, 2021. Ten (10) Section 4(f) resources were identified within the 0.5 mile search radius. One (1) of the Section 4(f) resources, Hanna Park, is located adjacent to the project area. The project will not use this resource by taking permanent ROW and it will not indirectly use the resource in such a way that the protected activities, features, or attributes that qualify the resource for protection under Section 4(f) are substantially impaired.

The NRHP, Indiana Register of Historic Sites and Structures (State Register), the State Historic Architectural and Archaeological Research Database (SHAARD), Indiana Historic Bridges, Buildings, and Cemetery Map (IHBBC Map), showing the results of the Indiana Historic Sites and Structures Inventory (IHSSI), and the *Wabash County Interim Report* (2010) were consulted to identify historic Section 4(f) resources located within or adjacent to the project area. One (1) historic Section 4(f) resource, the East Wabash Historic District (NR-1916), was identified. No early acquisition of properties within the East Wabash Historic District will occur. A Section 106 review is ongoing and the results will be included in the CE document for the N. East St over Norfolk Southern Railroad Grade Separation project.

No Section 6(f) resources were identified within or near the project limits on the INDOT Environmental Policy Webpage at (https://www.in.gov/indot/engineering/environmental-services/environmental-policy/), under Resources and Section 4(f)/Section 6(f) Information, titled *The Land and Water Conservation Fund (LWCF) County Property List for Indiana (updated March 2022)*.

All parcels will remain in their current state until the environmental document for the N. East St over Norfolk Southern Railroad project is approved by INDOT and FHWA.

Air Quality:	**No: X**	**Yes:**

This project is a buy and hold for ROW only. No impacts to air quality will occur. All parcels will remain in their current state until the environmental document for the N. East St over Norfolk Southern Railroad project is approved by INDOT and FHWA.

Community Impacts:	**No: X**	**Yes:**

This project is a buy and hold for ROW only. No impacts to community events or community cohesion will occur. No Environmental Justice (EJ) populations are present in the project area, and no relocations will occur within an EJ population. All parcels will remain in their current state until the environmental document for the N. East St over Norfolk Southern Railroad project is approved by INDOT and FHWA.

Public Facilities and Services (e.g. schools, emergency services):	**No: X**	**Yes:**

This project is a buy and hold for ROW only. No impacts to public facilities or services, including schools and emergency services, will occur. All parcels will remain in their current state until the environmental document for the N. East St over Norfolk Southern Railroad project is approved by INDOT and FHWA.

Hazardous Materials and Regulated Substances:	**No: X**	**Yes:**

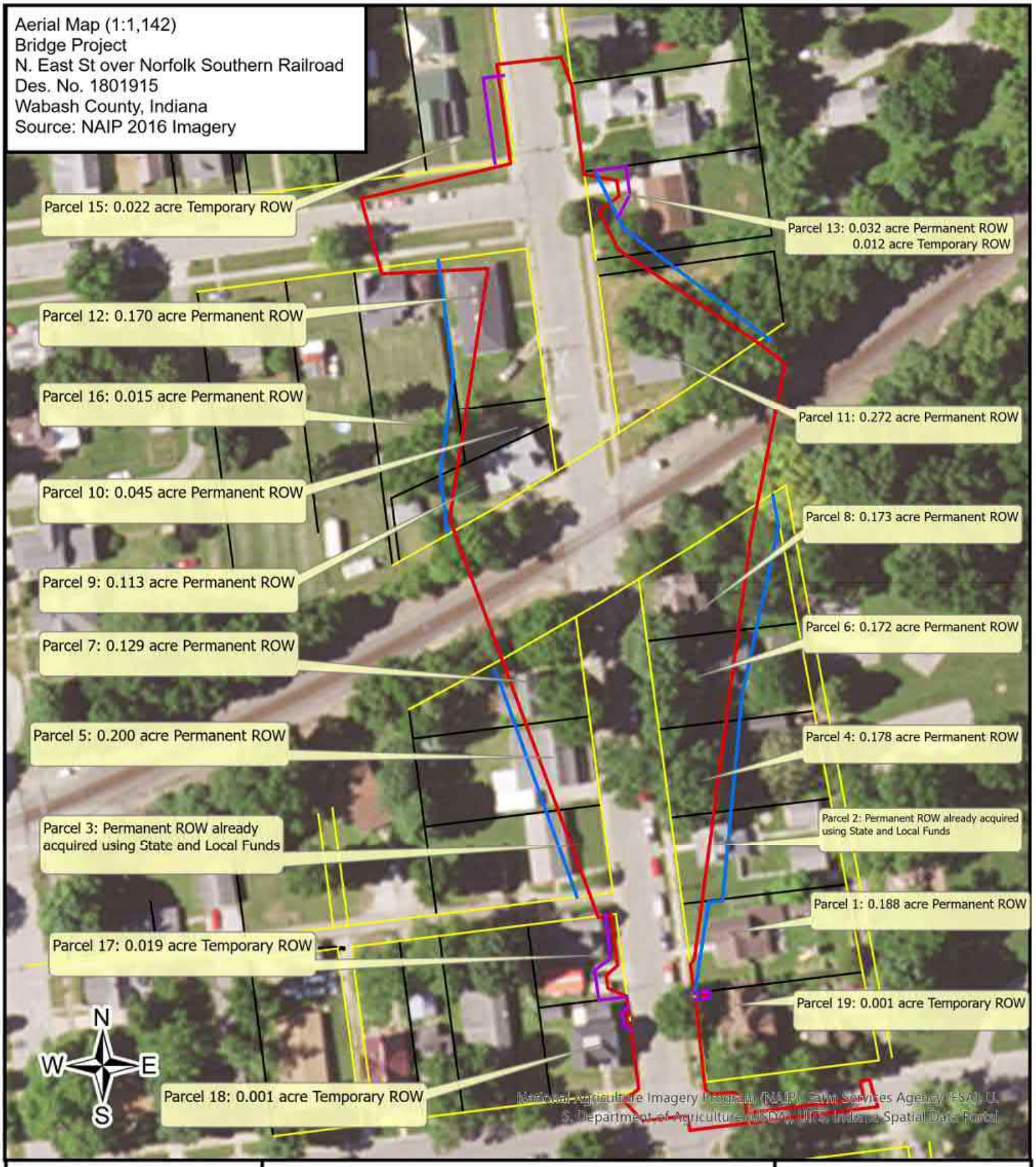
This project is a buy and hold for ROW only. No hazardous material sites will be impacted. All parcels will remain in their current state until the environmental document for the N. East St over Norfolk Southern Railroad project is approved by INDOT and FHWA.

A Red Flag Investigation (RFI) was completed for the N. East St over Norfolk Southern Railroad project and approved by the INDOT Site Assessment & Management (SAM) Unit on September 30, 2021. A total of 48 hazardous material sites were identified within the 0.5 mile search radius. No hazardous material sites were identified within or adjacent to the project area. One antique landfill was identified approximately 0.14 mile south of the project area. The Wabash Burning Dump (351 W Market St, AI# 57567) was formerly the site of a landfill. According to an Indiana Department of Environmental Management (IDEM) site investigation dated March 19, 1985, the site had been shut down approximately 15-20 years prior. The most recent IDEM documentation, dated August 8, 1995, shows a "No Further Remedial Action Plan" judgement was in development, but has not been recorded to date. Coordination with the IDEM Office of Land Quality was initiated on January 25, 2022. IDEM responded on February 3, 2022, stating that the proposed project will not impact the antique landfill. No additional measures are required at this time.

Permits:	**No: X**	**Yes:**
This project is a buy and hold for ROW only. No permits will be required. All parcels will remain in their current state until the environmental document for the N. East St over Norfolk Southern Railroad project is approved by INDOT and FHWA.		

ENVIRONMENTAL COMMITMENTS:

There are no environmental commitments associated with advanced acquisition from the affected parcels.


Aerial Map (1:1,142)
Bridge Project
N. East St over Norfolk Southern Railroad
Des. No. 1801915
Wabash County, Indiana
Source: NAIP 2016 Imagery
Parcel 15: 0.022 acre Temporary ROW
Parcel 13: 0.032 acre Permanent ROW
0.012 acre Temporary ROW
Parcel 12: 0.170 acre Permanent ROW
Parcel 16: 0.015 acre Permanent ROW
Parcel 11: 0.272 acre Permanent ROW
Parcel 10: 0.045 acre Permanent ROW
Parcel 8: 0.173 acre Permanent ROW
Parcel 9: 0.113 acre Permanent ROW
Parcel 6: 0.172 acre Permanent ROW
Parcel 7: 0.129 acre Permanent ROW
Parcel 5: 0.200 acre Permanent ROW
Parcel 4: 0.178 acre Permanent ROW
Parcel 3: Permanent ROW already acquired using State and Local Funds
Parcel 2: Permanent ROW already acquired using State and Local Funds
Parcel 1: 0.188 acre Permanent ROW
Parcel 17: 0.019 acre Temporary ROW
Parcel 19: 0.001 acre Temporary ROW
N
W
E
S
Parcel 18: 0.001 acre Temporary ROW
National Agriculture Imagery Program (NAIP), Farm Services Agency (FSA), U.S. Department of Agriculture (USDA), IIC, Indiana Spatial Data Portal
0
75
150
Feet
Construction Limits
Parcel Boundary
Existing ROW
Proposed Permanent ROW
Proposed Temporary ROW
9/15/2022
SJCA

Des 1801915, N. East St over Norfolk Southern Railroad

Parcel	Owner	Permanent R/W Acreage	Temporary R/W Acreage	Land	Damages	Relocation	Parcel Total
1	Erick J. Smith	0.188	0.000	$10,000	$25,000	$0	$35,000
2	Mark T. Worrick & Lorna L. Worrick						
3	Dorothy S. Gardner						
4	Adam D. Rensberger	0.178	0.000	$100,000	$0	$90,000	$190,000
5	The Hettmansperger Family Trust	0.200	0.000	$100,000	$0	$90,000	$190,000
6	Elizabeth K. Hall	0.172	0.000	$100,000	$0	$90,000	$190,000
7	Jeffrey H. Smith	0.129	0.000	$80,000	$0	$90,000	$170,000
8	John Shepherd & Carol Shepherd	0.173	0.000	$100,000	$0	$90,000	$190,000
9	Chris Beachler & Raelynn Beachler	0.113	0.000	$80,000	$0	$90,000	$170,000
10	Wabash County	0.045	0.000	$5,000	$0	$0	$5,000
11	Billy E. Clifton Jr. & James R. Clifton	0.272	0.000	$120,000	$0	$90,000	$210,000
12	Jeffrey B. Ravenscroft & Timothy L. Ravenscroft	0.170	0.000	$100,000	$0	$90,000	$190,000
13	Vivian A. Wampler	0.032	0.012	$12,000	$28,000	$0	$40,000
15	James E. Clifton	0.000	0.022	$1,000	$0	$0	$1,000
16	Jackie D. Hubbard Sr. & Diana L. Hubbard	0.015	0.000	$2,500	$0	$0	$2,500
17	Shawn L. Burkholder	0.000	0.019	$1,000	$0	$0	$1,000
18	Steve R. & Tina R. Burger	0.000	0.001	$1,000	$0	$0	$1,000
19	Phillip Bernon Woodward	0.000	0.001	$1,000	$0	$0	$1,000
	Subtotals	1.687	0.055	$813,500	$53,000	$720,000	$1,586,500
						10% Contingency =	$158,650
						Project R/W Total for Early Acquisition =	$1,745,150

Parcels 2 and 3 have already been acquired using state and local funds

Summary of Alternatives Considered

Alternative	Project Length (ft)	Total number of parcels ROW will be acquired from for bridge construction	Number of parcels within the East Wabash Historic District (NR-1916) that will be impacted	Number of Historic Districts Affected	Number of NRHP listed properties impacted	Number of Cross Streets that will need reconstruction
Wabash St	1705	43	2	3	2	5
Huntington St	1042	18	`18	1	0	3
Allen St	1278	19	17	1	0	4
Spring St	1040	15	10	1	0	3
East St (preferred)	865	18	3	1	0	1
Washington St	1380	24	1	1	0	2

August 30, 2021

[redacted]

Sample letter sent to property owners alerting them of the plan to acquire their entire property, including all buildings.

Re: Local Trax Project – Wabash, IN
Property Address: 25 N. East Street, Wabash, IN

Dear Sir/Madam:

The Indiana Department of Transportation (INDOT), in partnership with the City of Wabash, is pleased to be undertaking a railroad crossing separation project along East Street.

You are receiving this letter because the project will require partial acquisition of a property in which you have an ownership interest, including the existing building. INDOT and the City has contracted with WSP USA to provide the land acquisition services. WSP USA or one of their acquisition sub-consultants will be contacting you with specifics about how the project impacts your property and with additional information about the acquisition process.

The purchase of real estate by a governmental agency begins with the appraisal of your property, and the property owner is encouraged to accompany the appraiser during this process. A second appraiser will review the assessment, and then recommend a value to INDOT. At that point, you will receive a written offer to purchase the needed portion of the property and will have 30 days to respond.

Please review the forms and documents that you will be receiving which are relative to the acquisition process for this project. Again, WSP USA or one of their acquisition sub-consultants will be contacting you soon after your receipt of the uniform offer to help answer your questions.

While the project is a benefit to the entire community, we understand that it necessitates much more involvement from you and therefore we want to make every effort to address any uncertainty on your part. If you have any questions about the acquisition process, please feel free to contact WSP USA Right of Way Manager, Patrick McCallister, SR/WA, at *Patrick.McCallister@wsp.com* or (317) 972-4529. We look forward to the results this project delivers to the community and hope you share in our anticipation.

Sincerely,

Indiana Department of Transportation
City of Wabash, Indiana

Feedback regarding parcel acquisitions provided to SJCA, Inc. Consultant by WSP USA Right-of-Way Acquisition Manager on 11.4.2022

Parcel 5 – The Hettmansperger Family Trust
The occupant Janice Hettmansperger is in poor health. One of the family members was at the last public information meeting and spoke with me about their desire to have the acquisition completed sooner rather than later, as they want to get Janice moved to an assisted living facility. Then in late September another family member reached out to me, again asking if the acquisition could be completed as soon as possible to allow for Janice to move before winter set in.

Parcel 12 – Jeffrey B. & Timothy L. Ravenscroft
Talked with Tim Ravenscroft on 8/30/21. Mr. Ravenscroft indicated that this is a rental property and asked to have the acquisition completed as soon as possible, as they are not able to get renters now that the project has been made public. Tim again followed up with a voicemail on 12/20/21 asking about a status update and again indicating the desire for an early acquisition.