

Appendix H:

Air Quality



INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N758-Executive Office
Indianapolis, Indiana 46204

PHONE: (855) 463-6848

Eric Holcomb, Governor
Michael Smith, Commissioner

April 26, 2022

Mr. Jermaine R. Hannon, Division Administrator
FHWA Indiana Division
575 North Pennsylvania St., Room 254
Indianapolis, IN 46204

Ms. Kelley Brookins, Regional Administrator
FTA Region 5
200 West Adams St.
Suite 320
Chicago, IL 60606-5253

Dear Mr. Hannon /Ms. Brookins:

The Indiana Department of Transportation is pleased to submit its Draft FY 2022-2026 Statewide Transportation Improvement Program (STIP) for review and comment by your offices.

Included in the final submitted document is a listing of the state’s expansion/preservation and local small urban and rural and rural transit projects. The following Metropolitan Planning Organization TIP’s will be included in the FY 2022-2026 STIP by reference, pending FHWA approval in May 2022.

Area Plan Commission of Tippecanoe County (APCTC)	FY 2022-2026
• <i>Version 3/10/2022</i>	
Bloomington-Monroe County Metropolitan Planning Organization (BMCMPPO)	FY 2022-2026
• <i>Version 3/11/2022</i>	
Columbus Area Metropolitan Planning Organization (CAMPO)	FY 2022-2026
• <i>Version 3/22/2021</i>	
Delaware-Muncie Metropolitan Plan Commission (DMMPC)	FY 2022-2025
• <i>Version 12/15/2021</i>	
Evansville Metropolitan Planning Organization (EMPO)	FY 2022-2026
• <i>Version 3/10/2022</i>	
Kokomo-Howard County Governmental Coordinating Council (KHCGCC)	FY 2022-2026
• <i>Version 3/10/2022</i>	
Kentuckiana Regional Planning and Development Agency (KIPDA)	FY 2020-2025
• <i>Version 3/29/2022</i>	
Indianapolis Metropolitan Planning Organization (IMPO)	FY 2022-2025
• <i>Version 8/18/2021</i>	
Michiana Area Council of Governments (MACOG)	FY 2022-2026
• <i>Version 3/09/2022</i>	

Madison County Council of Governments (MCCOG)	FY 2022-2026
• <i>Version 7/13/2021</i>	
Northeastern Indiana Regional Coordinating Council (NIRCC)	FY 2022-2026
• <i>Version 3/28/2022</i>	
Northwestern Indiana Regional Planning Commission (NIRPC)	FY 2022-2026
• <i>Version 3/17/2022</i>	
Ohio-Kentucky-Indiana Regional Council of Governments (OKI)	FY 2020-2023
• <i>Version 03/10/2022</i>	
Terre Haute Area Metropolitan Planning Organization (THAMPO)	FY 2020-2024
• <i>Version 08/26/2021</i>	

In addition, INDOT has expanded our public involvement process by taking advantage of virtual meeting techniques and allowing accessibility to online documents, materials, virtual meeting registration, recorded virtual meetings, and comment forms. INDOT also leveraged our planning partner contacts (MPOs, RPOs, LTAP), social media, and notifications sent to local libraries, housing authorities, senior aging centers, and local newspapers across the state.

We greatly appreciate FHWA/FTA support in the development of the STIP 2022-2026 and look forward to working together to achieve our mutual goals. Should you have any questions pertaining to this amendment, please contact Michael McNeil, STIP Specialist at 317-232-0223 or at mmcneil@indot.in.gov.

Sincerely,



Michael Smith, Commissioner
Indiana Department of Transportation

cc: (w/enclosure): FTA
Michelle Allen, FHWA
Jeffrey Brooks, INDOT
Kristin Brier, INDOT
Kathy Eaton-McKalip, INDOT
Louis Feagans, INDOT
Roy Nunnally, INDOT
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Federal Transit Administration
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200 West Adams St., Suite 320
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U.S. Department
of Transportation

Federal Highway Administration
Indiana Division
575 N. Pennsylvania St., Rm 254
Indianapolis, IN 46204-1576

June 17, 2022

Mr. Michael Smith
Commissioner
Indiana Department of Transportation
100 N Senate Ave. N955
Indianapolis, IN 46204

SUBJECT: Indiana FY2022-2026 STIP Approval and Associated Federal Planning Finding

Dear Mr. Smith:

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have completed our review of the FY2022-2026 Indiana Statewide Transportation Improvement Program (INSTIP), which was submitted by the INDOT request letter dated April 27, 2022.

Based on our review of the information provided, certifications of the Statewide and Metropolitan transportation planning processes for and within the state of Indiana, and our participation in those transportation planning processes (including planning certification reviews conducted in Transportation Management Areas), FHWA and FTA are jointly approving the FY2022-2026 STIP, including the Metropolitan Planning Organization (MPO) Transportation Improvement Programs (TIPs) directly incorporated into the STIP, subject to the corrective actions identified in the attached Federal Planning Finding (FPF) report. FHWA and FTA consider the projects in the 5th year for informational purposes only, and our approval does not exceed four years per 23 CFR 450.220(c).

FHWA and FTA are required under 23 CFR 450.220(b) to document and issue an FPF in conjunction with the approval of the FY2022-2026 STIP. At a minimum, the FPF verifies that the development of the STIP is consistent with the provisions of both the Statewide and Metropolitan transportation planning requirements. FHWA and FTA find that the Indiana FY2022-2026 STIP substantially meets the transportation planning requirements and are approving the STIP subject to the corrective actions outlined in the FPF. This approval is effective June 17, 2022, and is given with the understanding that an eligibility determination of individual projects for funding must be met, and INDOT must ensure the satisfaction of all administrative and statutory requirements, as well as address the corrective actions outlined in the attached report. FHWA and FTA will continue to partner with INDOT to ensure the previously developed action plan (attached) is implemented to address the corrective actions. If progress is not made in addressing the corrective actions, future amendments to the FY2022-2026 STIP, or adoption of the FY2024-2028 STIP, may not be approved by USDOT.

If you have questions or need additional information concerning our approval and the FPF, please contact Ms. Michelle Allen of the FHWA Indiana Division at (317) 226-7344, or by email at michelle.allen@dot.gov, or Mr. Jason Ciavarella of the FTA Region 5 Office at (312) 353-1653, or by email at jason.ciavarella@dot.gov.

Sincerely,

**KELLEY
BROOKINS** Digitally signed by
KELLEY BROOKINS
Date: 2022.06.13
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Kelley Brookins
Regional Administrator
FTA Region V

Sincerely,

**JERMAINE
R HANNON** Digitally signed by
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HANNON
Date: 2022.06.13
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Jermaine R. Hannon
Division Administrator
FHWA Indiana Division

cc: (transmitted by e-mail)
Louis Feagans, INDOT
Roy Nunnally, INDOT
Karen Hicks, INDOT

Attachments have been removed for the purposes of this NEPA document.

Sponsor	DES	Contract	Resolution	Route	Location	Work Type	Fund Type	Phase	Federal	Match	SFY 2022	SFY 2023	SFY 2024	SFY 2025	SFY 2026	Estimated Total Project Cost	Letting Date
Elkhart	1801611	R-41395	M03-21		Bristol St: from Jeanwood Dr. to CR 15	Added Travel Lanes	STBG	RW	\$ 480,000	\$ 120,000	\$ 600,000					\$ 7,400,000	10/12/2023
Elkhart	1801611	R-41395	Res. 26-19		Bristol St: from Jeanwood Dr. to CR 15	Added Travel Lanes	STBG	CN	\$ 4,800,000	\$ 1,200,000			\$ 6,000,000			\$ 7,400,000	10/12/2023
Elkhart	1801933	B-41845	Res. 06-22		Hively Avenue, east of Main St, crossing the NS Railroad	New Bridge, Other	Local Trax	PE	\$ 1,058,937	\$ -	\$ 1,058,937					\$ 24,138,193	7/12/2023
Elkhart	1801933	B-41845	M02-22		Hively Avenue, east of Main St, crossing the NS Railroad	New Bridge, Other	Local Trax	RW	\$ 2,625,000	\$ 875,000		\$ 3,500,000				\$ 24,138,193	7/12/2023
Elkhart	1801933	B-41845	M02-22		Hively Avenue, east of Main St, crossing the NS Railroad	New Bridge, Other	Local Trax	CN	\$ 7,991,301	\$ 2,345,568			\$ 10,336,869			\$ 24,138,193	7/12/2023
Elkhart	1900821	B-41845	M03-22		Hively Avenue, east of Main St, crossing the NS Railroad	New Bridge, Other	Local Trax	CN	\$ 1,634,650	\$ 4,081,537			\$ 5,716,187			\$ 24,138,193	7/12/2023
Elkhart	2001662	B-41845	M04-22		Hively Avenue, east of Main St, crossing the NS Railroad	New Bridge, Other	Local Trax	CN	\$ 2,742,600	\$ 783,600			\$ 3,526,200			\$ 24,138,193	7/12/2023
Elkhart Co.	1401749	R-38158	M12-21		CR 18 at CR 13 and CR 115 Intersection	Intersection Improvement	CMAQ	CN	\$ 1,916,000	\$ 479,000		\$ 2,395,000				\$ 3,750,164	11/16/2022
Elkhart Co.	1592887	-	Res. 20-17	Various	Countywide Bridge Inspection and inventory program for Cycle Years 2018-2021	Bridge Inspections	Bridge	PE	\$ 54,386	\$ 13,597	\$ 67,983					\$ 67,983	2022
Elkhart Co.	2100291		Res. 06-22		Countywide Bridge Inspection and Inventory Program for Cycle Years 2023-2024	Bridge Inspections	Bridge	PE	\$ 183,846	\$ 45,961		\$ 206,640	\$ 23,167			\$ 229,807	2025
Elkhart Co.	1700310	R-40098	Res. 07-20		CR 17 Multi-Use Path: From US 33 to CR 45	Bike/Pedestrian Facilities	CMAQ	CN	\$ 2,878,765	\$ 719,691		\$ 3,598,456				\$ 3,771,555	1/19/2023
Elkhart Co.	1702848	R-41142	Res. 24-21		CR 40: from SR 19 to CR 7	Road Reconstruction (3R/4R Standards)	ST STBG	CN	\$ 1,893,340	\$ 473,335		\$ 2,366,675				\$ 2,387,845	12/7/2022
Elkhart Co.	1900465	B-419953	Res. 38-19		Bridge #312: on CR 142 over Turkey Creek	Bridge Replacement	ST STBG	RW	\$ 30,151	\$ 7,538		\$ 37,689				\$ 2,282,179	3/13/2024
Elkhart Co.	1900465	B-419953	Res. 38-19		Bridge #312: on CR 142 over Turkey Creek	Bridge Replacement	ST STBG	CN	\$ 1,795,592	\$ 448,898			\$ 2,244,490			\$ 2,282,179	3/13/2024
Elkhart Co.	1900486	B-42769			CR 17 from CR 142 to CR 38	New Road Construction	STBG	RW	\$ 1,949,414	\$ 487,354		\$ 497,768		\$ 1,939,000		\$ 25,944,000	7/9/2025
Elkhart Co.	1900821	B-41846			Sunnyside Ave/ Mall Dr at US 33 (Main St) over NS Railroad	New Bridge Construction	Local Trax	PE	\$ 2,712,744	\$ 164,700		\$ 2,877,444				\$ 27,015,962	3/15/2023
Elkhart Co.	1801913	B-41846	25-21		Sunnyside Ave/ Mall Dr at US 33 (Main St) over NS Railroad	New Bridge Construction	Local Trax	RW	\$ 4,562,446	\$ 1,440,772	\$ 3,650	\$ 5,999,569				\$ 22,239,675	3/15/2023
Elkhart Co.	1801913	B-41846	26-21		Sunnyside Ave/ Mall Dr at US 33 (Main St) over NS Railroad	New Bridge Construction	Local Trax	CN	\$ 6,266,804	\$ 8,708,133		\$ 14,974,937				\$ 22,239,675	3/15/2023
Elkhart Co.	1900836		Res 33-21		County Bridge 148 - Sunnyside Ave / Mall Dr at US 33 over Norfolk Southern Railroad	New Bridge Construction	ST Bridge	PE	\$ 2,413,550	\$ -	\$ 2,413,550					\$ 9,175,523	5/10/2023
Elkhart Co.	1900836	B-41846	27-21		County Bridge 148 - Sunnyside Ave / Mall Dr at US 33 over Norfolk Southern Railroad	New Bridge Construction	Local Trax	CN	\$ 3,694,427	\$ 974,354		\$ 4,668,781				\$ 9,175,523	5/10/2023
Elkhart Co.	1902829	B-42769	Res. 16-20		Bridge 145: on CR 26 over Baugo Creek	Bridge Rehabilitation of Repair	ST Bridge	RW	\$ 43,073	\$ 10,768		\$ 57,841				\$ 2,440,652	12/11/2024
Elkhart Co.	1902829	B-42769			Bridge 145: on CR 26 over Baugo Creek	Bridge Rehabilitation of Repair	ST Bridge	CN	\$ 1,909,449	\$ 477,362				\$ 2,386,811		\$ 2,440,652	12/11/2024
Elkhart Co.	2100065		Res 33-21		Extension and realignment of CR 13 from Sunnyside Avenue to CR 45	New Bridge Construction	ST Bridge	RW	\$ -	\$ 250,000		\$ 250,000				\$ 2,032,990	5/10/2023
Elkhart Co.	2100065	B-41846	30-21		Extension and realignment of CR 13 from Sunnyside Avenue to CR 45	New Bridge Construction	Local Trax	CN	\$ -	\$ 1,349,800		\$ 1,349,800				\$ 2,032,990	5/10/2023
Elkhart Co.	2001723	B-41846	28-21		County Bridge 151 - Concord Mall Drive over Yellow Creek	New Bridge Construction	Local Trax	CN	\$ 997,912	\$ 263,186		\$ 1,261,098				\$ 1,261,098	5/10/2023

Appendix I:

Noise Analysis

HIVELY AVENUE GRADE SEPARATION
Between Sanders Avenue and Clayton Avenue
City of Elkhart, Indiana
Elkhart County
Des #: 1801933

Noise Technical Report
May 24, 2021

Prepared for:

INDIANA DEPARTMENT OF TRANSPORTATION

Prepared by:

Michael Baker International, 3815 River Crossing, Suite 20
Indianapolis, Indiana 46240

Table of Contents

1.0	INTRODUCTION	3
2.0	LEGISLATION AND NOISE FUNDAMENTALS	3
2.1	Regulatory Requirements	3
2.2	Traffic Noise Descriptors	4
3.0	IMPACT CRITERIA	5
3.1	Noise Abatement Criteria	5
3.2	INDOT Definition of Noise Impacts	5
4.0	NOISE STUDY METHODOLOGY	7
4.1	Determination of Existing Noise Levels	7
4.2	Traffic Noise Model	8
4.3	TNM 2.5 Validation	10
5.0	PROPOSED ACTION	10
5.1	Project Description	10
5.2	Existing Roadways	11
5.3	Receptors	11
5.4	Planned Development	11
6.0	EXISTING NOISE LEVELS	12
6.1	TNM Validation	12
6.2	Existing Traffic Noise Results	13
7.0	PREDICTED YEAR 2042 NOISE RESULTS COMPARATIVE ANALYSIS	13
7.1	Design Year No Build Alternative Noise Results	13
7.2	Design Year Build Alternative Noise Results	13
7.3	Comparison of Predicted Year 2042 Traffic Noise Impacts by Alternative	13
8.0	NOISE ABATEMENT EVALUATION	14
8.1	INDOT Noise Abatement Policy	14
8.2	Abatement Measures Evaluation	15
8.3	Noise Barrier Evaluation	17
8.4	Statement of Likelihood	18
9.0	CONSTRUCTION NOISE	18
10.0	NOISE COMPATIBLE PLANNING	19
11.0	SUMMARY	19
12.0	REFERENCES	20
	APPENDIX A: FIGURES	
	APPENDIX B: NOISE METER CALIBRATION AND WEATHER DATA	
	APPENDIX C: AMBIENT NOISE MEASUREMENT LOGS	
	APPENDIX D: TRAFFIC VOLUMES	
	APPENDIX E: PREDICTED SOUND LEVELS	
	APPENDIX F: TNM INPUT/OUTPUT TABLES (Provided electronically)	

1.0 INTRODUCTION

Michael Baker International (Michael Baker) was retained by INDOT to perform a Type I traffic noise study and abatement analysis as a requirement of the Hively Avenue Grade Separation in Elkhart County, INDOT – Local Trax Program. Within the project corridor, the roadway that serves as the primary source of highway noise is Hively Avenue. Cross-streets that may contribute varying degrees of vehicular noise to the total sound level environment include South Main Street, Sterling Avenue, Hammond Avenue and Warren Street.

The major objectives of this highway traffic noise and abatement analysis study are defined as follows:

- Identify areas of potential noise impacts associated with the Proposed Action.
- Evaluate measures to mitigate noise impacts, as necessary.
- Compare the various mitigation alternatives on the basis of potential noise impact and the associated mitigation costs.

The *INDOT Traffic Noise Analysis Procedure* was developed to implement the requirements of 23 Code of Federal Regulations (CFR) Part 772 *Procedures for Abatement of Highway Traffic Noise and Construction Noise* (August 11, 1997), Federal Highway Administration's (FHWA) *Highway Traffic Noise: Analysis and Abatement Guidance* (June 2010), and the noise related requirements of the *National Environmental Policy Act of 1969*. The *INDOT Traffic Noise Analysis Procedure* received FHWA approval and was effective as of July 1st, 2017.

2.0 LEGISLATION AND NOISE FUNDAMENTALS

2.1 Regulatory Requirements

Effective control of undesirable traffic noise focuses upon three areas of responsibility. These are the control of land uses adjacent to a highway, regulation of vehicle noise emission levels, and mitigating noise impacts resulting from certain types of highway improvement projects.

The authority to implement planning and land use control in the State of Indiana is under the jurisdiction of local governments. Both FHWA and INDOT encourage local governments to regulate land uses in such a manner that noise sensitive developments are either prohibited from being located adjacent to major transportation facilities, or that developments are planned, designed, and built in such a manner that potential noise impacts can be avoided or minimized.

The *Noise Control Act of 1972* gives the U.S. Environmental Protection Agency (USEPA) the authority to establish noise regulations to control major noise sources, including motor vehicles and construction equipment. Furthermore, the USEPA is required to set noise emission standards for motor vehicles used for interstate commerce and the FHWA is required to enforce the USEPA noise emission standards through the Office of Motor Carrier Safety.

The *National Environmental Policy Act of 1969* (NEPA) gives broad authority and responsibility to Federal agencies to evaluate and mitigate adverse environmental impacts caused by Federal actions. FHWA is required to comply with NEPA including mitigating adverse highway traffic

noise effects. *The Federal-Aid Highway Act of 1970* mandates FHWA to develop standards for mitigating highway traffic noise. It also requires FHWA to establish traffic noise level criteria for various types of land uses. The Act prohibits FHWA approval of federal-aid highway projects unless adequate consideration has been made for noise abatement measures to comply with the standards.

FHWA regulations for highway traffic noise for federal-aid highway projects are contained in 23 CFR Part 772. The regulations contain noise abatement criteria, which represent the maximum acceptable level of highway traffic noise for specific types of land uses. The regulations do not mandate that the abatement criteria be met in all situations, but rather require that reasonable and feasible efforts be made to provide noise mitigation when the abatement criteria are approached or exceeded.

The traffic noise standards and the description of highway traffic noise prediction requirements, noise analyses, noise abatement criteria, and requirements for informing local officials are found in 23 CFR Part 772. (Procedures for Abatement of Highway Traffic Noise and Construction Noise). Also, FHWA policy requires each state Department of Transportation to adopt a state-specific noise policy, approved by FHWA, which defines specific terms and describes how the state implements the noise standard.

The effective date of the most recent FHWA-approved *INDOT Traffic Noise Analysis Procedure* is July 1st, 2017. This policy is applicable to Type I federal-aid highway projects which involve the construction of a highway on a new location, or which involves the physical alteration of an existing highway that significantly changes either the horizontal or vertical alignment or increases the number of through traffic lanes. The policy is not applicable to Type II federal-aid highway projects for the abatement of noise on existing highways. The structure of the policy focuses on the following principal elements:

1. Identification of Noise-Sensitive Land Uses.
2. Determination of Existing Noise Levels.
3. Prediction of Future Noise Levels.
4. Identification of Traffic Noise Impacts.
5. Identification and Consideration of Abatement.
6. Consideration of Construction Noise.
7. Coordination with Local Government Officials.

2.2 Traffic Noise Descriptors

Noise is generally defined as unwanted or annoying sound. Airborne sound occurs by a rapid fluctuation of air pressure above and below atmospheric pressure. Sound pressure levels are usually measured and expressed in decibels (dB). The decibel scale is logarithmic and expresses the ratio of the sound pressure unit being measured to a standard reference level.

Most sounds occurring in the environment do not consist of a single frequency, but rather a broad band of differing frequencies. The intensities of each frequency add to generate sound. Because the human ear does not respond to all frequencies equally, the method commonly used to quantify environmental noise consists of evaluating all of the frequencies of a sound according to a

weighting system. It has been found that the A-weighted filter on a sound level meter, which includes circuits to differentially measure selected audible frequencies, best approximates the frequency response of the human ear. The A-weighted sound level in decibels is identified as dBA.

Although the dBA may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of noise from distant sources, creating a relatively steady background noise in which no particular source is identifiable. To describe the time-varying character of traffic noise, a statistical noise descriptor called the equivalent hourly sound level, or $L_{eq}(h)$, is commonly used. $L_{eq}(h)$ describes a noise sensitive receptor's cumulative exposure from all noise-producing events over a one-hour period.

Because decibels are logarithmic units, sound levels cannot be added by ordinary arithmetic means. The following general relationships provide a basic understanding of sound generation and propagation:

- An increase, or decrease, of 10 dB will be perceived by a receptor to be a doubling, or halving, of the sound level.
- Doubling the distance between a highway and receptor will produce a 3 dB sound level decrease.
- A 3 dB sound level increase is barely detectable by the human ear.

3.0 IMPACT CRITERIA

3.1 Noise Abatement Criteria

The *INDOT Traffic Noise Analysis Procedure* has adopted the noise abatement criteria (NAC) that have been established by FHWA (23 CFR Part 772) for determining noise impacts for a variety of land uses. The land-use Activity Categories along with the criteria are presented in Table 1 (refer to page 4). The NAC sound levels are only to be used to determine a roadway noise impact. These are the absolute values where abatement must be considered.

3.2 INDOT Definition of Noise Impacts

Traffic noise impacts occur if either of the following two conditions is met:

- The predicted traffic noise levels approach or exceed the NAC, as shown in Table 1. The *INDOT Traffic Noise Analysis Procedure* defines "approach or exceed" as meaning that future levels are higher than 1 dBA below the appropriate NAC activity category. For example, for a category B receptor, 66.0 dBA would be approaching 67.0 dBA and would be considered an impact.
- The predicted traffic noise levels substantially exceed the existing noise level. The *INDOT Traffic Noise Analysis Procedure* defines "substantially exceed" as meaning when predicted traffic noise levels exceed existing noise levels by 15.0 dBA or more. For example, if a receptor's existing noise level is 50.0 dBA, and if the future noise level is 65.0 dBA, then it would be considered an impact.

Table 1
FHWA Noise Abatement Criteria (NAC)
Hourly A-Weighted Sound Levels in Decibels (dBA)

Activity Category	Activity $L_{eq}(h)$	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	67	Exterior	Residential
C	67	Exterior	Active sport areas, amphitheatres, 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	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.

Source: Federal Highway Administration (23 CFR Part 772)

Note: These sound levels are only to be used to determine impact. These are the absolute levels above which abatement must be considered. Noise abatement is designed to achieve a substantial noise reduction. Noise abatement is not designed to achieve the noise abatement criteria.

4.0 NOISE STUDY METHODOLOGY

4.1 Determination of Existing Noise Levels

Existing noise levels are defined in 23 CFR Part 772 as the noise, resulting from the natural and mechanical sources and human activity, considered to be usually present in a particular area during the period of the noise analysis. In accordance with the INDOT *Traffic Noise Analysis Procedure* Traffic Noise Prediction, the existing noise levels are to be determined by the measurements taken at a time of the day that reflects the worst (noisiest) traffic hour. This period is generally the design hourly volume (DHV).

Existing measurements were collected at representative sets of receptors. These representative sets were developed based on an evaluation of the topography, the highway traffic volumes and highways, and the density and proximity of the receptors to the local roadways and highways.

The existing noise level measurement locations were approved by INDOT. The receptors and the land-use activity categories being represented by those locations are shown in Appendix A and/or described in Table 2.

Measurement of the existing noise levels at the representative sites were collected on March 22, 2021, using a Norsonics 132 Sound Level Meter and EXTECH 407744 calibrator. Copies of the Calibration Certificates for the sound level meter, microphone and acoustic calibrator are included in Appendix B. In addition, field sheets depicting the before and after sound level calibration levels for each site is included in Appendix B. All of the existing noise level measurements were recorded at approximately 4.92 feet above the surface of the ground and at locations representing outdoor activities nearest the dominant ambient noise source. The operation of the calibrator was utilized according to manufacturer's specifications and there was no drift in the measurements.

Existing noise measurements were conducted under meteorologically acceptable conditions when the pavement was dry and winds were calm or light. Ambient measurements were conducted for a period of 20 minutes at each location in accordance with the FHWA Report FHWA-PD-96-46, "Measurement of Highway Related Noise." A summary of the existing noise level measurements used as part of this analysis are included in Table 2 and copies of the Ambient Noise Measurement Logs are included in Appendix C.

Traffic data was simultaneously recorded during the noise measurements and classified into three vehicle types: automobiles (including sport utility vehicles, pick-up trucks and motorcycles), medium trucks (two-axles with six wheels) and heavy trucks (three or more axles, plus buses) for subsequent entry into the TNM 2.5 noise prediction computer model for validation purposes.

**Table 2
Existing Noise Level Measurement Locations**

Site No.	Site Description and Land Use Classification	Time		Noise Meter Reading (Leq, in dBA)
		Start	Stop	
M-1	2649 Morton Avenue. Two-story place of worship (Unique Outreach Ministries-Church of God in Christ) at the corner of Morton and E. Hively. Measurement taken west of the building. Site is classified as land use category C. There is an exterior activity site - a picnic table/cooking area.	11:46 PM	12:06 PM	63.5
M-2	1135 E. Hively Avenue. One-two story places of worship (Evangelical Churches-Zion Missionary Church and El Divino Redentor) across from Monger Avenue. Measurement taken north of Zion Church so that traffic on Hively was visible. Land use is classified as land use category C. There is an exterior recreation area south of Zion, but it is located well outside the 500' analysis area. Therefore, interior receptors will be analyzed at the two places of worship.	12:27 PM	12:47 PM	51.1
M-3	1321 E. Hively Avenue. Two-story single-family residential home on the corner of E. Hively and Homer. Measurement taken along Homer closer toward the proposed new alignment but within visibility of E. Lively traffic. This site is classified as land use category B with commercial/industrial to the north and east.	1:13 PM	1:35 PM	56.3
M-4	2719 Homer Avenue. One-story single-family residential home just south of the proposed new alignment. This site is classified as land use category B. The area is primarily single family residential with commercial/industrial land uses to the east.	1:47 PM	2:07 PM	60.6
M-5	1802 Dover Street. One-story single-family residential home at the corner of Hammond and Dover next to an abandoned place of worship, which is proposed to be acquired. This site is classified as land use category B. The area is primarily single family residential with commercial/industrial land uses to the south and west and the former place of worship to the north.	2:34 PM	2:54 PM	67.3
M-6	2800 Warren Street. One-story single-family residential home at the corner of Warren and Dover. Measurement taken on side closest to Warren. This site is classified as land use category B. The area is primarily single family residential with commercial/industrial land uses to the south and west.	3:32 PM	3:53 PM	54.9
M-7	Hammond Avenue empty lot near Yuma Avenue. Backup site to M-5 because there may have been enough noise emanating from an Auto Mechanic shop across the street to possibly skew the validation results.	4:08 PM	4:28 PM	69.2

NOTE: Measurements were taken on March 22, 2021.

4.2 Traffic Noise Model

The traffic noise analysis for this study was performed using the FHWA Traffic Noise Model (TNM), Version 2.5. The FHWA TNM was first released in March 1998. Version 2.5 of the model was released in April 2004 and is the latest approved version.

The FHWA TNM estimates vehicle noise emissions based on mean (average) noise emission levels for three classes of vehicles used for this analysis: automobiles, medium trucks, and heavy trucks. The TNM computer model has capabilities for additional vehicular classes but only three were provided as part of the traffic analysis. The predicted noise levels for the Design Year No-Build and Build Alternative conditions were based on Design Hourly Volumes (DHV) and vehicular fleet mixes for the year 2042.

Terrain and other roadway features were input into TNM. These inputs include roadway widths (including inner and outer shoulders) and elevations, receptor elevations and intervening terrain. Tree zones were not included in the modeling. In accordance with INDOT's *Traffic Noise Analysis Procedure* all receptors located within 500 feet of the edge of pavement of all reasonable

build alternatives were assessed for traffic noise impacts. Based on all this input data, TNM uses its acoustic algorithms to predict noise levels at receptor locations by taking into account sound propagation variables such as atmospheric absorption, divergence, intervening ground, barriers, building rows, and vegetation.

4.2.1 Traffic Data

Traffic that was input into the existing condition runs used to validate the model came from the traffic observed during the ambient measurements.

Appendix D shows the traffic inputs that were used for the TNM runs. Traffic data used as input for TNM was developed from the INDOT Traffic Count Database System (TCDS) and intersection counts performed by Michael Baker. Subsequent future year volumes were determined by Michael Baker based on assumed growth rates, trends and discussions with local agencies. Some local roads and all center turn lanes were entered into the model as a zero input.

Posted traffic speeds were used in the analysis because DHVs were provided as traffic input for the analysis. Flow control devices were applied as applicable. All other local roads were modeled using speeds based on posted limits.

Additionally, a designated route is proposed to facilitate the movement between Hively and Sterling Avenues to accommodate the industrial area north of Hively. The designated route directs the vehicles (all vehicles, not just trucks) to the industrial area by guiding them to Warren Street, then over to Sterling. These vehicle trips were added to Warren Street.

4.2.2 Alignment

The proposed alignment includes a new alignment grade-separation of Hively Avenue over the Norfolk Southern Railroad track, also resulting in creating grade-separation over Hammond Avenue, South Main Street and the Maple Heart Multi-use trail. Homer Avenue will be cul-de-sac'd south of the new alignment. New/modified intersections will be constructed with Warren Street, Roosevelt Avenue, Morton Avenue, Monger Avenue, Lowell Avenue and Sterling Avenue. A planned signed route via Warren Street is proposed to maintain connectivity between the industrial area on Sterling Avenue and Hively Avenue. Roads were input manually from the design files in the Baker GIS database used for this study. Elevations were also input manually through available existing GIS elevation data where needed.

Hively Avenue was modeled using single lanes, plus the added and overlapping inside and outside paved shoulders. Cross-streets with notable traffic volumes were modeled as one lane in each direction. Minor collector streets with little or no available traffic volumes were modeled with a single link to account for the pavement surface.

4.2.3 Receptors

The project study area was divided into four Common Noise Environments (CNE's) based on a combination of land use, traffic volumes and density. In accordance with INDOT's *Traffic Noise Analysis Procedure*, all receptors located within 500 feet of the edge of pavement of the Build

Alternative was assessed for traffic noise impacts. A total of 128 sites were modeled to represent 128 receptors.

The location of all the receptors modeled in TNM can be found in Appendix A. Most of the 128 receptors are residential land uses. Six receptors were representative of the Maple Heart Trail, one receptor was representative of the Monger Elementary School recreational area, one receptor was representative of an exterior people activity area at a place of worship (Unique Outreach Ministry), and there were two interior people activity areas at two separate places of worship (Zion Missionary Church and El Divino Redentor). Retail land uses, industrial land uses, storage facilities and outbuildings were not modeled. The TNM default height of 4.92 feet above the base ground elevation was used for all receptors. Specific receptor placement in the model is generally based on exterior areas where normal human occupation is expected to occur on the property. The TNM computer model input data is included separately provided to INDOT.

4.2.4 Tree Zones and Surface Objects

Tree zones were not modeled since most of the project area is not forested land use. Buildings were modeled as barrier inputs (shielding) where applicable.

4.2.5 Terrain lines

Terrain lines were used sensibly in the model to represent the existing topography and intervening terrain features. Terrain lines input into the model were selectively chosen to optimize their effectiveness in the model and to minimize the extensive model run times.

4.2.6 Barriers

Barriers were used in the noise abatement evaluation. A maximum height of 30 feet was used in this analysis for modeling purposes as a baseline limit to avoid inordinately tall barriers. Barriers were also input as building shielding objects.

4.3 TNM 2.5 Validation

Model validation is a process for testing a model to ensure that it produces reliable results and to confirm that traffic noise is the predominant noise source at the receptor locations. In general, validation involves comparing actual noise measurements obtained with the sound level meter to the noise levels predicted by the model for existing conditions at the same location. The model is considered to be verified if the model results are within ± 3.0 dBA of the field measurements recorded at the site for the same conditions.

5.0 PROPOSED ACTION

5.1 Project Description

The proposed action includes the construction of a 2-lane road paralleling existing Hively Avenue and a grade separation with the existing and heavily active Norfolk Southern railroad tracks. The bypass take-off points for Hively Avenue are from Monger Avenue on the west side and near

Hazel Street on the east side. Modifications to various local intersections are also planned to accommodate all existing travel movements. The new road will also include a sidewalk in the eastbound direction. Additionally, Warren Street South will be realigned to Warren Street North to form a new “plus” intersection with Warren Street North. Furthermore, a short connector road is proposed from existing Hively Avenue to the new Hively bypass in the vicinity of Morton and Roosevelt Avenues.

The project corridor primarily traverses a relatively flat area with mixed residential, commercial, retail, office and industrial land uses areas in a suburban setting. The land uses also include places of worship, a school recreational area, the Maple Heart Multi-use Trail and the Norfolk Southern Railroad corridor.

5.2 Existing Roadways

Existing transportation facilities within the corridor includes the roadway that serves as the primary source of highway noise, Hively Avenue. Cross-streets that may contribute varying degrees of vehicular noise to the total sound level environment include South Main Street, Sterling Avenue and Hammond Avenue. Other local streets have existing DHVs of 100 or less vehicles.

5.3 Receptors

The project corridor generally consists of suburban residential development, mixed with commercial/retail/industrial land uses. Displacements are anticipated with the Build Alternative.

Receptors located within 500 feet of the edge of pavement of the Build Alternative were assessed for potential noise impacts per the INDOT *Traffic Noise Analysis Procedure*.

Additionally, the Maple Heart Trail alongside Hammond Avenue was analyzed for impacts and possible mitigation per the INDOT *Traffic Noise Analysis Procedure*. There is 500’ of trail in the project study area out of the total 11.6 miles. The 500 foot trail section was divided into six receptor points (0’, 100’, 200’, 300’, 400’ and the 500’ distance from the new alignment at the project study area boundary). Noise mitigation for trails is determined by developing representative Equivalent Receptor Units (ERUs) based on trail usage, total trail length and the amount of trail that is in the project noise study area. Due to the low trail usage data and urban nature of the area, the INDOT formula to determine the representative ERUs was not used and receptors were placed along the trail at 100 foot increments to allow for a complete assessment.

5.4 Planned Development

23 CFR §772.9(b)(1) requires that a noise analysis be performed for undeveloped lands for which development is "planned, designed, and programmed. In accordance with the INDOT *Traffic Noise Analysis Procedure*, an undeveloped lot is considered to be planned, designed, and programmed if a building permit has been issued by the local authorities prior to the Date of Public Knowledge for the relevant project. If no zoning or building permit process is in place then land is considered undeveloped unless foundations for new buildings are in place. INDOT considers the Date of Public Knowledge as the date that the final NEPA approval is made. INDOT has no obligation to provide noise mitigation for any undeveloped land that is planned, designed, or programmed after

this date.

Subdivisions result from the division of land into two or more lots that are recorded and then made available for sale. Traditional, or modern, residential subdivisions are typically developed in accordance with a local zoning ordinance that implements a community’s land use or comprehensive plan. Subdivisions often include areas dedicated for public roads and utilities in addition to the platted lots.

6.0 EXISTING NOISE LEVELS

6.1 TNM Validation

Receptors representing the 7 noise measurement locations were modeled using the TNM with the same traffic observed during the noise measurements to confirm that the model accurately replicates the sound environment at each particular location and to confirm that traffic noise is the predominant source of noise at each location.

Model validation is a process for testing a model to ensure that it produces reliable results and to confirm that traffic noise is the predominant noise source at the receptor locations. In general, validation involves comparing actual noise measurements with the noise levels predicted by the model for existing conditions at the same location. The model is considered to be verified if the model results are within ± 3.0 dBA of the field measurements recorded at the site for the same conditions. A comparison of the existing ambient measured sound levels to the predicted sound level for each site is summarized in Table 3. Based on the results, the TNM noise models constructed for the modeled existing, design year no-build and build alternatives are valid except for Site M-5 because of auto repair shop work. Site M-7 was added to the analysis while in the field to be farther away from the auto repair shop noise and provide an alternate to Site M-5.

Based on field observations collected during the existing noise level measurements, Hively Avenue, Hammond Avenue and South Main Street traffic noise were considered to be the dominant source of noise at the noise measurement locations, though train noise could be heard in the background, depending on the distance from the track. The existing measured L_{eq} within the project corridor ranged from 41.6 dBA to 68.7 dBA (Interior; 29.5 dBA to 32.3 dBA).

Table 3 TNM Validation Results						
Site No.	Activity Category	CNE	Existing Measured L_{eq} (dBA)	Existing Modeled L_{eq} (dBA)	Measured Minus Modeled L_{eq} (dBA)	Dominant Noise Source at Site
M-1	C	1	63.5	62.1	+1.4	Traffic noise from Hively
M-2	C	2	51.1	51.1	0.0	Traffic noise from Hively
M-3	B	3	56.3	57.8	-1.5	Traffic noise from Hively
M-4	B	3	59.8	57.7	-2.1	Traffic noise from Hively/Homer
M-5	B	4	67.3	63.2	-4.1	Traffic noise from Hammond, noise from auto workshop
M-6	B	4	54.9	52.8	-2.1	Traffic noise from Warren
M-7	E	4	69.2	66.9	-2.3	Traffic noise from Hammond

6.2 Existing Traffic Noise Results

The project study area was divided into 4 CNEs based on land use, traffic volumes and density. Traffic data used as input into TNM was developed from the INDOT Traffic Count Database System (TCDS) and intersection counts performed by Michael Baker. (Subsequent future year volumes were determined based on assumed growth rates, trends and discussions with local agencies.) These values were used to determine the existing noise levels for the 128 sites within the 4 CNEs throughout the study corridor. The results of the noise analysis conducted for the modeled existing condition resulted in seven receptors that approach or exceed the applicable NAC criteria as defined in the INDOT Traffic Noise Analysis Procedure. These locations consist of seven residential land uses. Appendix E includes the existing sound level results for each modeled site.

7.0 PREDICTED YEAR 2042 NOISE RESULTS COMPARATIVE ANALYSIS

7.1 Design Year No Build Alternative Noise Results

The results of the noise analysis conducted for the Design Year No-Build Alternative at the existing noise modeling locations indicate that design year 2042 predicted noise levels would increase by approximately 1 dBA (on average) over the existing condition. For the No-Build condition, Leq levels are predicted to range from 42.6 dBA to 69.5 dBA (Interior; 30.4 dBA to 33.4 dBA). This increase results from the predicted growth in traffic volumes if the proposed project is not constructed. The predicted number of receptors that approach or exceed the appropriate NAC criteria is 10, an increase of three over the existing condition. These locations are comprised of 10 residences. Appendix E includes the Future No Build Leq sound level results for each modeled site.

7.2 Design Year Build Alternative Noise Results

A noise analysis was performed to determine the predicted design year 2042 noise levels for the receptors located within the modeling limits for the proposed alternative. The results indicate that the year 2042 predicted noise levels for the build condition would range from 45.4 dBA to 69.1 dBA (Interior; 38.6 dBA to 39.8 dBA) for the 128 modeled locations. The predicted number of receptors that approach or exceed the appropriate NAC criteria is 14, an increase of seven over the existing condition and four over the Design Year No-Build condition. These locations are comprised of 14 residences. These predicted noise levels represent a difference from existing noise levels ranging from a decrease of approximately 10.6 to an increase of 13.2 dBA Leq. Therefore, there were no substantial increase impacts of 15.0 dBA or greater. Appendix E includes the Future No Build Leq sound level results for each modeled site.

7.3 Comparison of Predicted Year 2042 Traffic Noise Impacts by Alternative

The noise level impacts are summarized in Table 4 and described below. The values in the table are for all the receptors represented by the modeled location sites. A summary of the type of

impacts for the predicted design year 2042 traffic associated with the design year conditions is contained in Table 5.

Table 4 Noise Level Impacts by Land Use - 2042 Design Year Alternatives		
Receptor (or Land Use) Type	2042 Exterior Noise Level Impacts	
	No-Build Alternative	Build Alternative
Residences	10	14
Places of Worship	0	0
Recreation	0	0
Schools	0	0
Multi-Use Trail	0	0
Commercial (non-retail)	0	0
Total	10	14

Table 5 Noise Level Impact Summary	
Type of Impact	2042 Exterior Noise Level Impacts
	Build Alternative
NAC Only Impact	14
Substantial Increase Only Impact (≥15.0 dBA)	0
NAC and Substantial Increase Impact	0
Total	14

8.0 NOISE ABATEMENT EVALUATION

8.1 INDOT Noise Abatement Policy

Traffic noise abatement measures can be in many forms and may include traffic control measures (TCM), alteration of vertical or horizontal alignment, acquisition of buffering land, noise insulation of public use or non-profit institutional structures, and/or construction of traffic noise barriers. Due to limitations on INDOT's ability to acquire property for mitigation or to mitigate sites off of State Right-of-Way, the most common form of abatement is the construction of noise barriers. Other forms of abatement will be evaluated on a case-by-case basis. INDOT will choose the most feasible and reasonable form of abatement.

8.2 Abatement Measures Evaluation

The following strategies were considered for the predicted highway traffic noise impacts.

Traffic Management Measures: Traffic management measures were not considered reasonable and feasible for abating noise impacts for any receptor. Measures such as installation of additional traffic control devices, prohibition of vehicle types, time-use restrictions, speed limit reductions, and exclusive lane designations would be detrimental to the proposed project's ability to function as a main east-west travel route.

Alteration of Horizontal and Vertical Alignments: This abatement measure typically involves shifting the alternative both vertically and horizontally to minimize noise impacts where other factors are not prohibitive. However, since the build alternative was chosen to be the most efficient alignment while minimizing impacts, it is anticipated that substantial horizontal and/or vertical changes would be prohibitive.

Acquisition of Property Rights or Acquisition of Property: The purchase of property and/or buildings for noise barrier construction or the creation of a "buffer zone" to reduce noise impacts was considered. The amount of property required for this option to be effective would create significant additional impacts (e.g., in terms of displacements), which were determined to outweigh the benefits of land acquisition.

Noise Insulation of Public Use or Nonprofit Institutional Structures: This noise abatement measure option applies only to NAC D land uses. Since no NAC D land uses are anticipated to have interior noise levels exceeding FHWA's interior NAC, this noise abatement option will not be applied.

Coordination Among Local Planning Authorities: Since most of the proposed project would be located near to or along on an existing facility, the potential for local officials and developers to help minimize adverse noise impacts through the use of careful land use planning exists only in the undeveloped areas. With regard to currently undeveloped land, the creation of a "buffer zone" or locating noise sensitive developments a reasonable distance away from the project would help minimize future noise impacts. Local planning authorities will be provided with information that identifies the limits of where 66.0 dBA and 71.0 dBA noise levels are predicted relative to the proposed facility which can be utilized to direct noise compatible land use development outside the 66.0 dBA and 71.0 dBA buffer zones along the highway. This information is provided in this report, as part of the larger environmental document for this project. Copies of the noise report will be provided to or made available to local officials.

Construction of Noise Barriers: The construction of noise barriers between the shoulder and the right-of-way limits is generally one of the most feasible and/or reasonable abatement measures available. Noise barriers can be wall structures, earthen berms, or a combination of the two. The effectiveness of a noise barrier depends on the distance and elevation difference between the roadway and receptor and the available placement location for a barrier. For those receptors experiencing a noise impact, the feasibility and reasonableness of noise abatement were evaluated using INDOT's feasible and reasonableness assessment criteria.

Possible mitigation measures were considered for sites where noise impacts were predicted to occur. Mitigation was assessed in terms of its feasibility and reasonableness.

Feasibility means that INDOT believes traffic noise impact abatement is prudent based on all of the following:

- Acoustic Feasibility. INDOT requires that noise barriers achieve a 5.0 dBA reduction at a majority (greater than 50%) of the impacted receptors. If a barrier cannot achieve this acoustic goal, abatement is considered to not be acoustically feasible.
- Engineering Feasibility. INDOT requires noise abatement to be based on sound engineering and evaluated at the optimum location. For instances in which the roadway is located on fill and is at a higher location than nearby receptors, a barrier will be evaluated near the shoulder. For instances in which the roadway is located below the nearby receptors, a barrier will be evaluated near the edge of the right-of-way near the receptors. In addition, noise barriers require long, uninterrupted segments of barrier to be feasible. As such, if there are existing access points and/or driveways, it is not feasible to construct effective noise barriers for the roadway.

Engineering feasibility also takes into account topography, drainage, safety, barrier height, utilities, and access/maintenance needs (which may include right-of-way considerations). In situations where engineering considerations make noise barriers not feasible, the noise analysis will explicitly state the reasons (topography, drainage, safety, etc.).

Reasonableness means that INDOT believes abatement of traffic noise impacts is prudent based on all of the following factors:

- Cost effectiveness. A barrier is determined to be cost-effective if a five decibel (5.0 dBA) reduction can be achieved at a cost of no more than \$25,000 per benefited receptor if a majority of the nearby receptors in a common noise environment were not constructed prior to the roadway. Using current bid prices, this corresponds to approximately 833 square feet of noise barrier per receptor. The allowed cost is \$30,000 per benefited receptor if a majority of the nearby receptors in a common noise environment were constructed prior to the roadway being constructed. This corresponds to approximately 1,000 square feet of noise barrier per receptor using recent bid prices.
 - Note: Placing noise barriers on structures creates additional challenges, since reinforcement of the structure may be necessary to support the increased load. In these situations, other options are assessed to determine whether cost-effective abatement can be provided without requiring complicated and expensive structural changes. These could include lighter-weight barriers, shorter barriers, or other considerations. Any variations will be worked out in coordination between the FHWA division office and INDOT's Offices of Structural Services, Environmental Services and Construction Management.
- INDOT Design Goal for Noise Abatement. FHWA requires that traffic noise abatement achieve a substantial noise reduction. INDOT's goal for substantial noise reduction is to provide at least a 7.0 dBA reduction for impacted first row receptors in the design year.

However, conflicts with adjacent lands may make it impossible to achieve substantial noise reduction at all impacted first row receptors. Therefore, the noise reduction design goal for Indiana is 7.0 dBA for a majority (greater than 50%) of the impacted first row receptors.

- Consideration and obtaining views of residents and property owners. The viewpoints of the affected property owners and residents are important to FHWA and INDOT. All communication with the public regarding the potential for noise abatement must be coordinated with INDOT's Fort Wayne District. This public involvement requirement can be handled either through a public hearing or via a mailed survey as outlined in the INDOT *Traffic Noise Analysis Procedure*.

8.3 Noise Barrier Evaluation

Using INDOT's *Highway Traffic Analysis Procedure*, receptors that were categorized as having design year (2042) traffic noise impacts for the build alternative was assessed to determine if the construction of noise barriers would be a feasible and reasonable form of noise abatement. As part of the barrier analysis, the most current available data was used.

During the NEPA process, there is normally insufficient design information to fully commit to construction of noise abatement. This analysis report identifies locations where noise impacts are predicted to occur, where noise abatement is likely to be feasible and reasonable, and locations with impacts that are likely to have no feasible or reasonable noise abatement alternatives. The information within this report is completed to the extent that design information on the alternatives under study is available at the time the environmental document is completed. Projects may eventually have a narrower scope, updated survey information, or another change that affects the future noise environment. As such, noise abatement recommendations during the NEPA stage do not constitute commitments by INDOT. All Type I projects will undertake a reevaluation of the noise analysis and noise models once design of the roadway project has progressed to a near final stage to determine if noise abatement still meets the feasibility and reasonability standards set forth in this policy. Additional public involvement will be completed as necessary or if the decision is changed.

A noise barrier analysis was conducted at 1 location in CNE 3. The results of the barrier analysis are shown in Table 6. The analyzed barrier location result was not feasible because it did not achieve the minimum 5.0 dBA sound level reduction.

Feasibility - There were 0 barriers out of the 1 analyzed for the Build Alternative that met INDOT's criteria for "feasibility" for being structurally and acoustically capable of providing a 5.0 dBA reduction in noise levels at a majority of the impacted receptors. Therefore, no barriers are proposed to be carried forward as a result of this preliminary analysis.

There were several impacted receivers that have direct access driveway access to Hively Avenue and/or are located on a corner of an intersecting road with Hively Avenue and/or are adjacent to commercial land uses with direct access driveways. As a result, noise barriers are not feasible to mitigate impacts at these residences because a noise barrier would limit access from these properties and/or adjacent properties, and thus not meet the 5.0 dBA minimum insertion loss (IL) and/or subsequent 7.0 dBA IL design goal.

Reasonableness - As a result of not achieving the minimum sound level reduction, the reasonable analysis criteria is not applicable.

8.4 Statement of Likelihood

The Statement of Likelihood is applicable to the preliminary barrier area locations that are deemed to be feasible and reasonable. Currently, there are no proposed barriers that are predicted to be both reasonable and feasible.

A reevaluation of the noise analysis will occur during final design. If during final design it has been determined that conditions have changed such that noise abatement is feasible and reasonable, then abatement measures may be provided. The final decision on the installation of any abatement measure(s) will be made upon the completion of the project’s final design and any subsequent public involvement processes.

Table 6 Build Alternative Noise Barrier Abatement Analysis									
Proposed Barrier Location	Total Barrier Length (feet)	Average Height (feet)	No. of Impacted Receptors	Number of Benefited Receptors	CNE Area	Feasibility Criteria Met?	Cost of Barrier (\$30/sq ft)	Cost per Benefited Receptor	Reasonableness Criteria Met?
Bar 1	1,407	30.75*	6	0	3	No	N/A	N/A	N/A

*The approximate 30 foot barrier height was considered to be conservative and the barrier does not meet the minimum feasible reduction.

Note1: The maximum sound insertion loss was predicted to be 0.4 dBA. The noise impacts at the receptor sites are being caused by South Main Street traffic and not the proposed project. These sites also have direct driveway access with South Main Street. As a result of not achieving the minimum sound level reduction, the reasonable criteria analysis is not applicable.

9.0 CONSTRUCTION NOISE

Construction of the proposed project will result in a temporary increase in the ambient noise level in the vicinity of the roadway. Equipment associated with construction generally includes backhoes, graders, pavers, concrete trucks, compressors, and other miscellaneous heavy equipment. Construction noise on this project should be controlled by measures including but not limited to the following:

- The construction contract specifications should require that the contractor adhere with all Federal, state, and local noise abatement and control requirements.
- Construction activity in the vicinity of residences should be limited to the hours between 7:00 am and 7:00 pm or as specified by local requirements.
- A responsive communication process should be established with local residents. A telephone number should be posted at the construction site for inquiries concerning project activity.
- Equipment such as generators, which may be used during the nighttime hours, should be enclosed.
- Construction equipment should be in good repair and fitted with "manufacturer

- recommended" mufflers.
- Consideration will be made to provide reasonable and feasible noise abatement early in construction for the added benefit of mitigating construction noise.

10.0 NOISE COMPATIBLE PLANNING

While there is no NAC set up for undeveloped lands (Category G,) as described in Table 1, INDOT *Traffic Noise Analysis Procedure* requires noise contours to be developed for undeveloped lands to aid with future land use planning. As part of the requirements of the INDOT *Traffic Noise Analysis Procedure*, estimated future noise levels associated with the Proposed Build scenario for undeveloped lands that are not planned, designed, and programmed will be provided to local governments so that the appropriate land-use planning can be performed.

Since most of the proposed project would be constructed near to or along an existing facility, the potential for local officials and developers to help minimize adverse noise impacts through the use of careful land use planning exists only in the undeveloped areas. With regard to currently undeveloped land, the creation of a "buffer zone" or the location of noise sensitive developments a reasonable distance away from the project would help minimize future noise impacts. Local planning authorities will be provided with information that identifies the limits of where the 71.0 dBA (non-retail commercial business) and 66.0 dBA (residences, schools, churches, hospitals, parks) noise levels are predicted relative to the proposed facility and can be utilized to direct noise compatible land uses outside the 71.0 and 66.0 dBA buffer zones along the highway. At this time, the estimated distance from the edge of the nearest Hively Avenue travel lane for such buffers are approximately 30 feet for the 66.0 dBA contour. The 71.0 dBA contour is within the pavement. Please note that this distance is for planning purposes only and does not include the effects of local terrain variables, building shielding, tree zones and/or other noise generating sources.

This information is only intended to be used as a guide to assist the local government agencies. Any future land use planning should take into account developments so that they are planned, designed, and constructed in such a way that noise impacts are minimized for the areas developed.

11.0 SUMMARY

A Type I noise analysis was performed for the Build Alternative of the Hively Avenue realignment and grade-separation from the Norfolk Southern Railroad Corridor in Elkhart to determine the predicted traffic noise impacts.

Seven existing ambient measurements were recorded. Two of the ambient levels approached or exceeded the NAC criteria. A total of 128 location sites representing 128 receptors were modeled for the existing, design year build and no-build alternatives. Existing modeled Leq noise levels ranged from 41.6 dBA to 68.7 dBA (Interior; 29.5 dBA to 32.3 dBA). There were seven receptors that approach or exceed the applicable NAC criteria as defined in the INDOT Traffic Noise Analysis Procedure. These locations consisted of seven residential land uses. An evaluation of the design year no-build scenario resulted in the identification of 10 residences that approached or exceeded the NAC criteria.

The Build Alternative is predicted to result in 14 total impacts (14 NAC and zero substantial

increase impacts).

There were 0 barriers out of the 1 analyzed for the Build Alternative that met INDOT's criteria for "feasibility". Therefore, no barriers are proposed to be carried forward as a result of this preliminary analysis. A final determination on noise abatement for the Build Alternative will be made during the final design phase of the project. At such time, additional noise analysis will be performed as applicable to more accurately determine barrier performance, barrier characteristics (length and height), and the optimal barrier location for any potential noise barriers that may be recommended for noise abatement.

12.0 REFERENCES

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

Environmental Protection Agency Publication EPAPB 206717, December 1971, *Noise from Construction Equipment and Operations*.

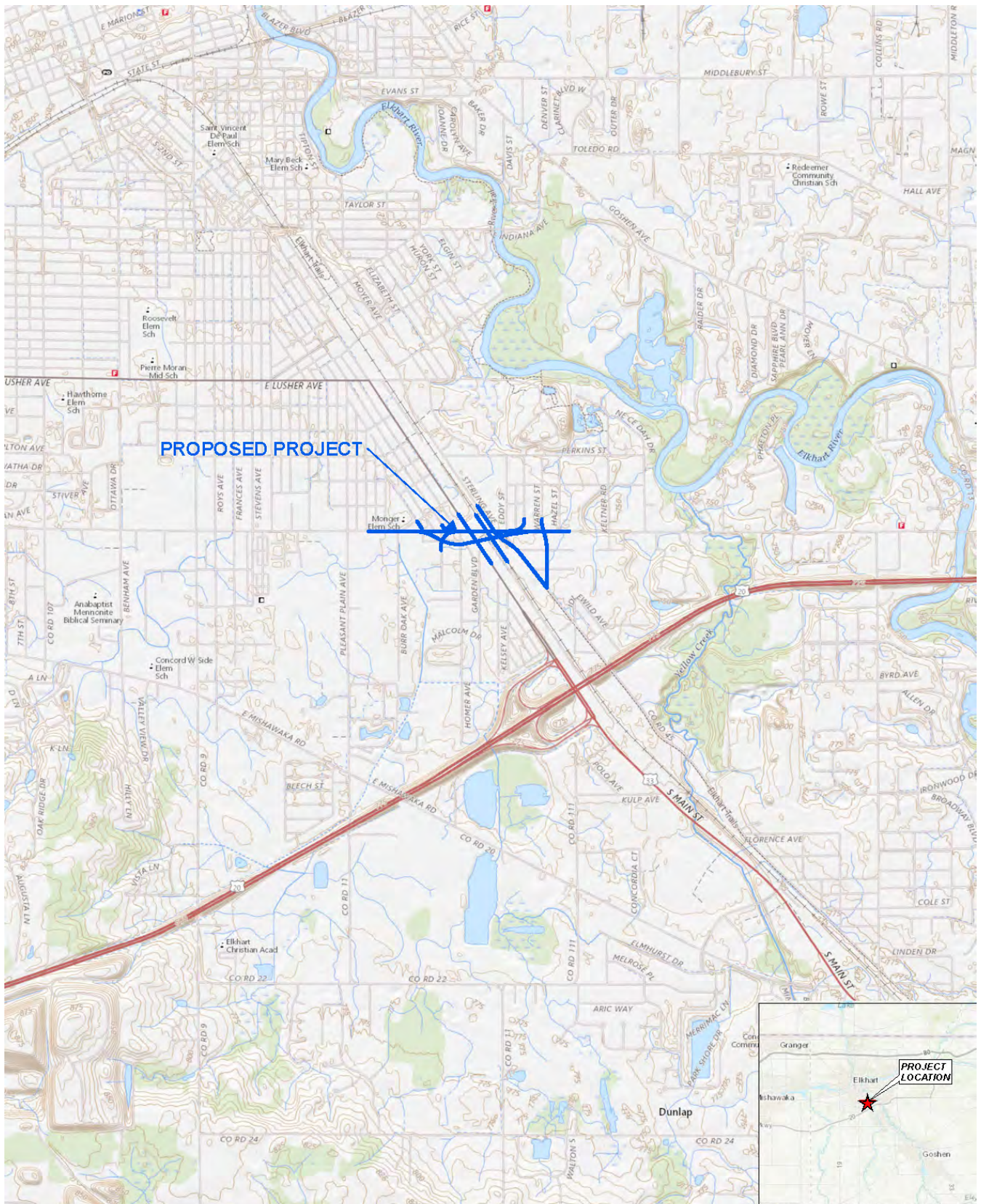
Federal Highway Program Manual, Volume 7, Section 3, August 9, 1982.

FHWA *Highway Traffic Noise Analysis and Abatement Guidance*, August, 2010.

Indiana Department of Transportation Traffic Noise Analysis Procedure, Effective July 1st, 2017.

Lee, Cynthia S.Y., Gregg G. Fleming. "Measurement of Highway-Related Noise", U.S. Department of Transportation Federal Highway Administration Office of Environment and Planning, May, 1996.

Appendix A – Figures



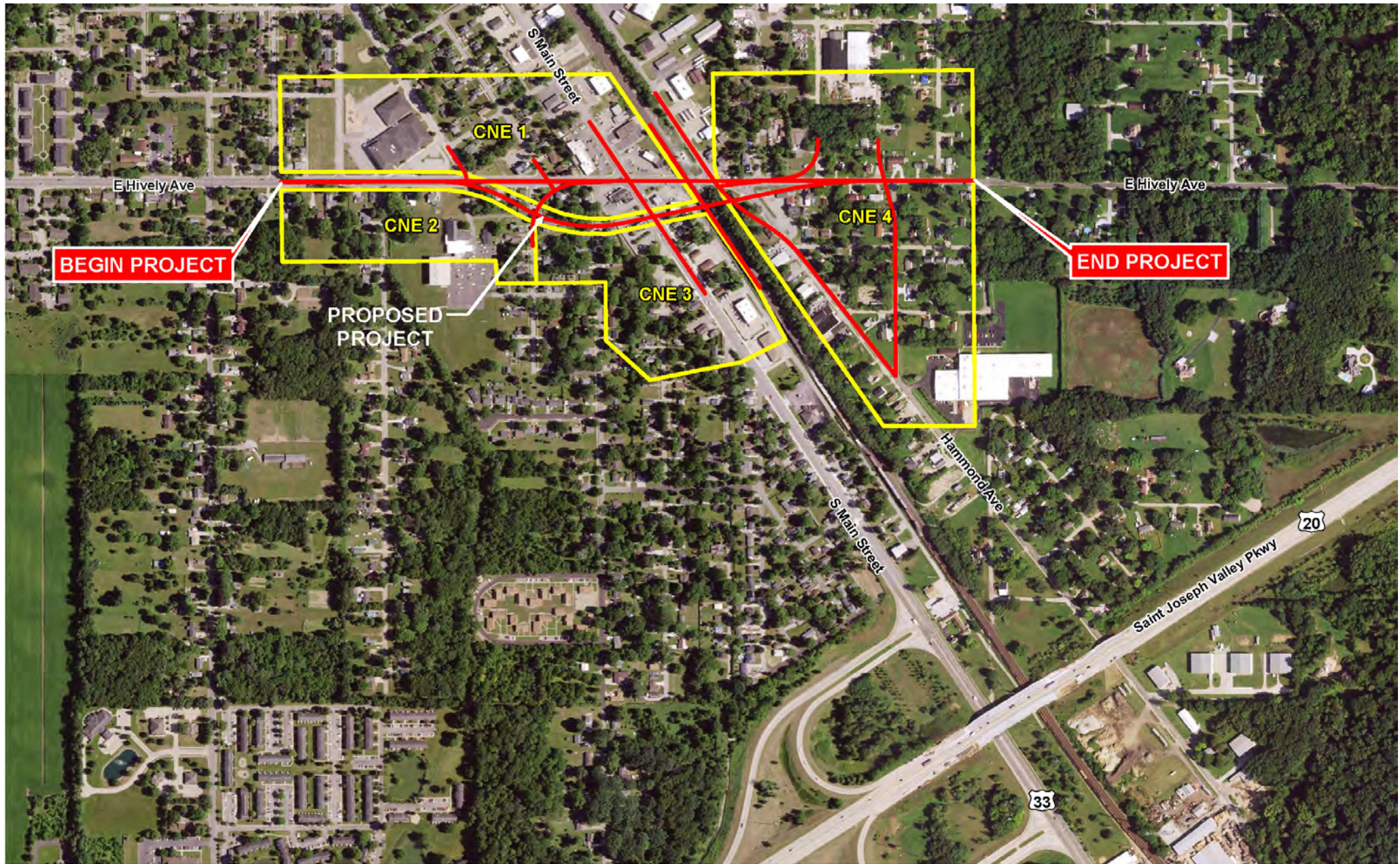
PROPOSED PROJECT

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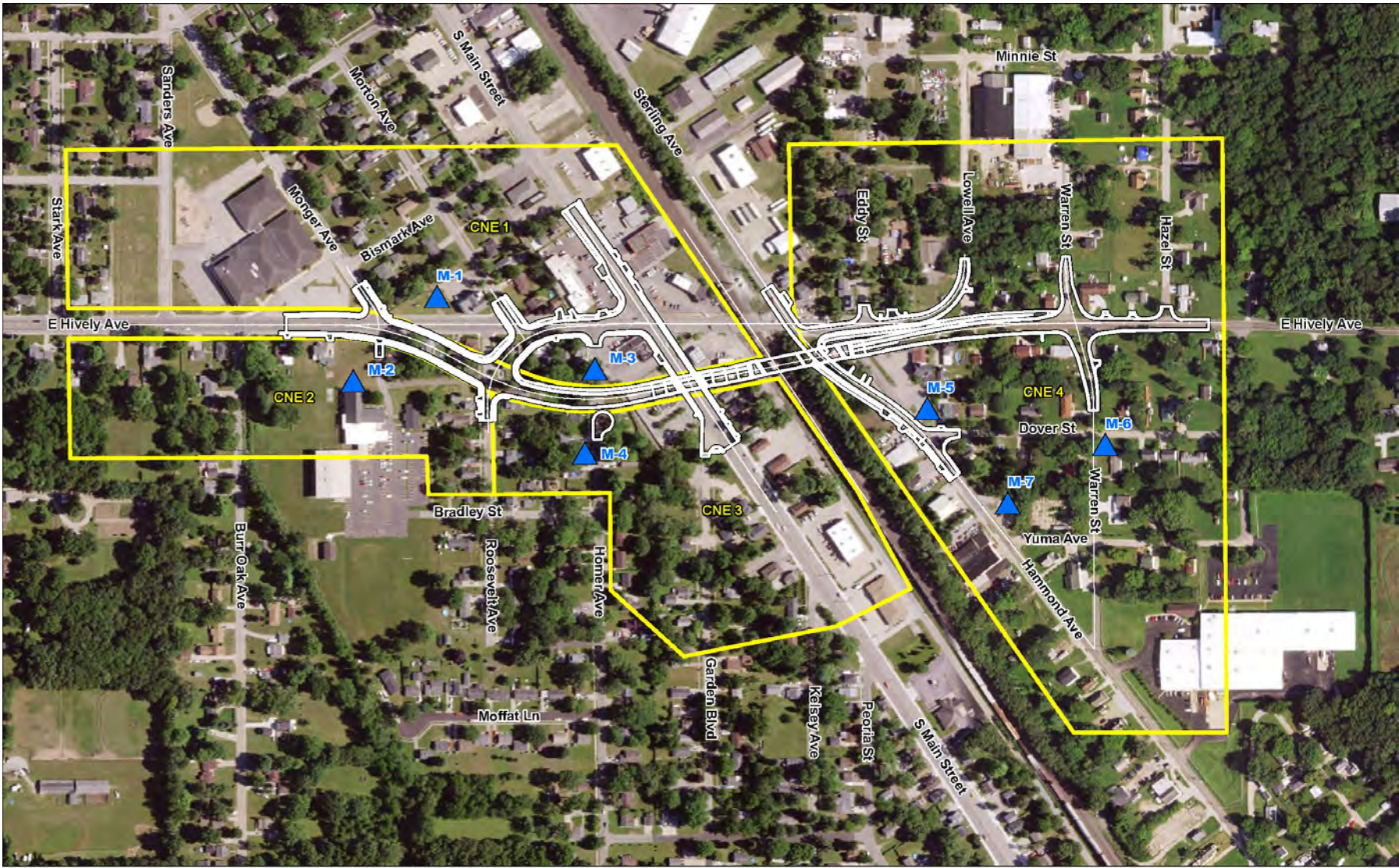
**E Hively Avenue and Norfolk Southern
Railroad Grade Separation
Elkhart County, Indiana**

Project Location Map



E Hively Avenue and Norfolk Southern
 Railroad Grade Separation
 Elkhart County, Indiana

 Common Noise Environments **Common Noise Environments**

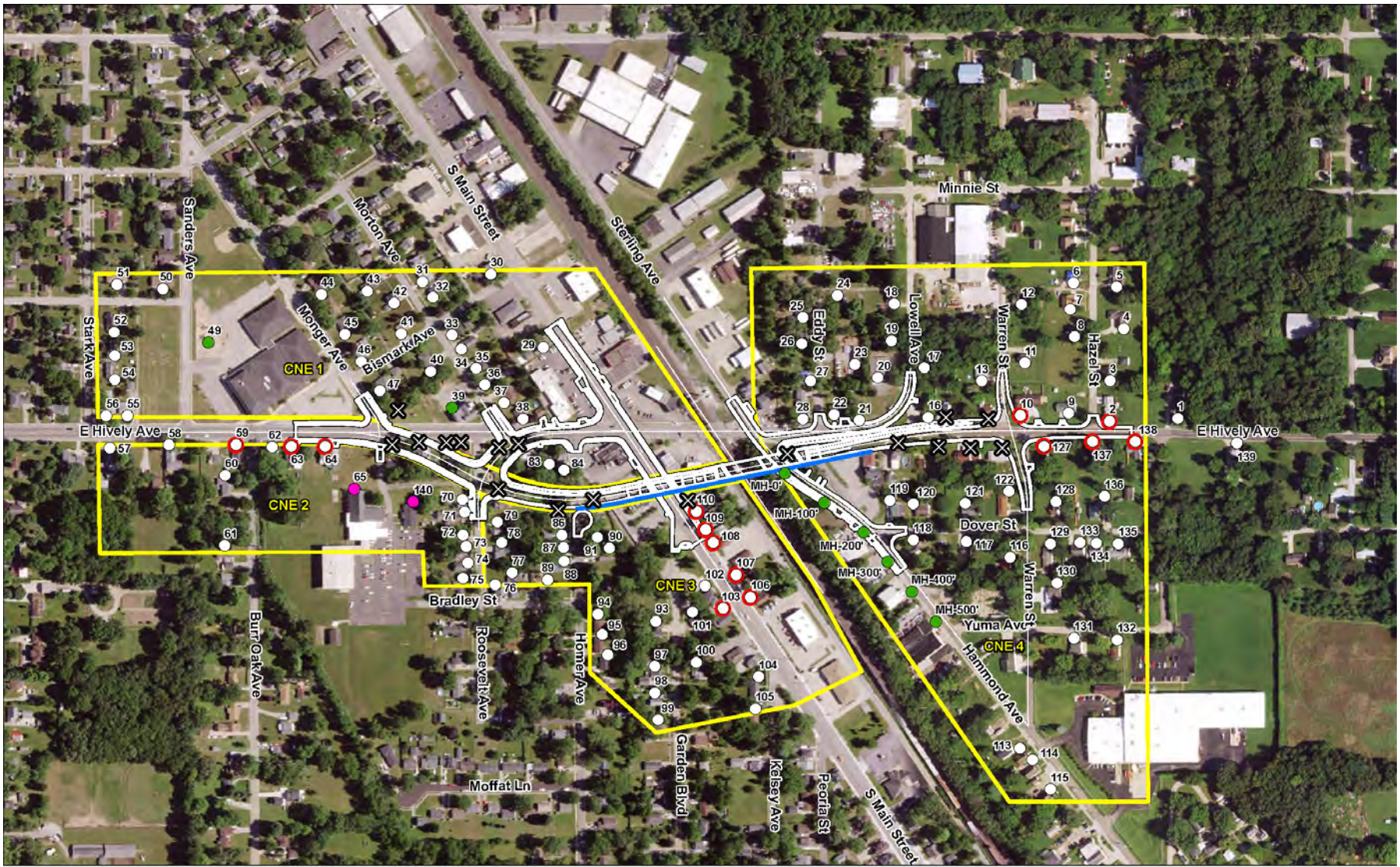


E Hively Avenue and Norfolk Southern
 Railroad Grade Separation
 Elkhart County, Indiana

- Noise Measurement Site
- Proposed Improvement
- Common Noise Environments

Noise Measurement Sites

Sheet 1 of 1



0 250 500 Feet

E Hively Avenue and Norfolk Southern
Railroad Grade Separation
Elkhart County, Indiana

- Receptors
- Category B
- Category C
- Category D
- Category E
- ⊗ Right-of-Way Impacted Receptor
- Proposed Improvement
- Common Noise Environments
- Modeled Barrier

Noise Receptor Locations

Sheet 1 of 1

Appendix B – Noise Meter Calibration and Weather Data

Calibration Certificate No.40569

Instrument: Acoustical Calibrator
Model: 407744
Manufacturer: Extech
Serial number: Z206457
Class (IEC 60942): 2
Barometer type:
Barometer s/n:
Customer: Michael Baker Jr., Inc.
Tel/Fax: 412-269-4644 / 412-375-3988

Date Calibrated: 4/18/2018 **Cal Due:**
Status:

Received	Sent
X	X

In tolerance:

X	X
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Out of tolerance:

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See comments:

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Contains non-accredited tests: Yes X No

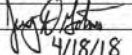
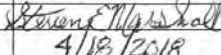
Address: Airside Business Park
100 Airside Drive
Moon Township, PA 15108

Tested in accordance with the following procedures and standards:
Calibration of Acoustical Calibrators, Scantek Inc., Rev. 10/1/2010

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal. Date	Traceability evidence	
				Cal. Lab / Accreditation	Cal. Due
483B-Norsonic	SME Cal Unit	31061	Jul 28, 2017	Scantek, Inc./ NVLAP	Jul 28, 2018
DS-360-SRS	Function Generator	88077	Sep 15, 2016	ACR Env./ A2LA	Sep 15, 2018
34401A-Agilent Technologies	Digital Voltmeter	MY47011118	Sep 20, 2017	ACR Env./ A2LA	Sep 20, 2018
HM30-Thommen	Meteo Station	1040170/39633	Oct 25, 2017	ACR Env./ A2LA	Oct 25, 2018
140-Norsonic	Real Time Analyzer	1403978	Mar 22, 2018	Scantek, Inc. / NVLAP	Mar 22, 2019
PC Program 1018 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	-
4192-Brüel&Kjær	Microphone	2854675	Nov 11, 2017	Scantek, Inc. / NVLAP	Nov 11, 2018
1203-Norsonic	Preamplifier	92268	Oct 18, 2017	Scantek, Inc./ NVLAP	Oct 18, 2018

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK)

Calibrated by:	Jeremy Gotwalt	Authorized signatory:	Steven E. Marshall
Signature		Signature	
Date	4/18/18	Date	4/18/2018

Calibration Certificates or Test Reports shall not be reproduced, except in full, without written approval of the laboratory.
This Calibration Certificate or Test Reports shall not be used to claim product certification, approval or endorsement by NVLAP, NIST, or any agency of the federal government.

Document stored as: Z:\Calibration Lab\Cal 2018\Ex407744_Z206457_M1.doc

Page 1 of 2

Scantek, Inc.

CALIBRATION LABORATORY

ISO 17025: 2005, ANSI/NCCL Z540:1994 Part 1
ACCREDITED by NVLAP (an ILAC MRA signatory)



Calibration Certificate No.40570

Instrument: Sound Level Meter
Model: 132
Manufacturer: Norsonic
Serial number: 1322870
Tested with: Microphone 1229 s/n 00529
Preamplifier
Type (class): 2
Customer: Michael Baker Jr., Inc.
Tel/Fax: 412-269-4644 / 412-375-3988

Date Calibrated: 4/18/2018 **Cal Due:**
Status:

Received	Sent
X	X

In tolerance:

--	--

Out of tolerance:

--	--

See comments:

--	--

Contains non-accredited tests: Yes No
Calibration service: Basic Standard
Address: Airside Business Park
100 Airside Drive
Moon Township, PA 15108

Tested in accordance with the following procedures and standards:
Calibration of Sound Level Meters, Scantek Inc., Rev. 6/26/2015
SLM & Dosimeters – Acoustical Tests, Scantek Inc., Rev. 7/6/2011

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal. Date	Traceability evidence	Cal. Due
				Cal. Lab / Accreditation	
483B-Norsonic	SME Cal Unit	31061	Jul 28, 2017	Scantek, Inc./ NVLAP	Jul 28, 2018
DS-360-SRS	Function Generator	88077	Sep 15, 2016	ACR Env./ A2LA	Sep 15, 2018
34401A-Agilent Technologies	Digital Voltmeter	MY47011118	Sep 20, 2017	ACR Env./ A2LA	Sep 20, 2018
HM30-Thommen	Meteo Station	1040170/39633	Oct 25, 2017	ACR Env./ A2LA	Oct 25, 2018
PC Program 1019 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	-
1251-Norsonic	Calibrator	30878	Nov 10, 2017	Scantek, inc./ NVLAP	Nov 10, 2018
4226-Brüel&Kjær	Multifunction calibrator	2305103	Sep 5, 2017	Brüel&Kjær/ A2LA	Sep 5, 2018

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
23.7	99.62	43.1

Calibrated by:	Jeremy Gotwalt	Authorized signatory:	Steven E. Marshall
Signature		Signature	
Date	4/18/18	Date	4/18/2018

Calibration Certificates or Test Reports shall not be reproduced, except in full, without written approval of the laboratory.
This Calibration Certificate or Test Reports shall not be used to claim product certification, approval or endorsement by NVLAP, NIST, or any agency of the federal government.
Document stored Z:\Calibration Lab\SLM 2018\NOR132_1322870_M1.doc Page 1 of 2

Summary
March 22, 2021

	High	Low	Average
Temperature	70.5 °F	34.3 °F	52.3 °F
Dew Point	53.2 °F	26.6 °F	40.5 °F
Humidity	77 %	52 %	65 %
Precipitation	0.00 in	--	--

	High	Low	Average
Wind Speed	15.0 mph	0.0 mph	2.4 mph
Wind Gust	15.0 mph	--	5.4 mph
Wind Direction	--	--	SSW
Pressure	29.94 in	29.77 in	--

March 22, 2021



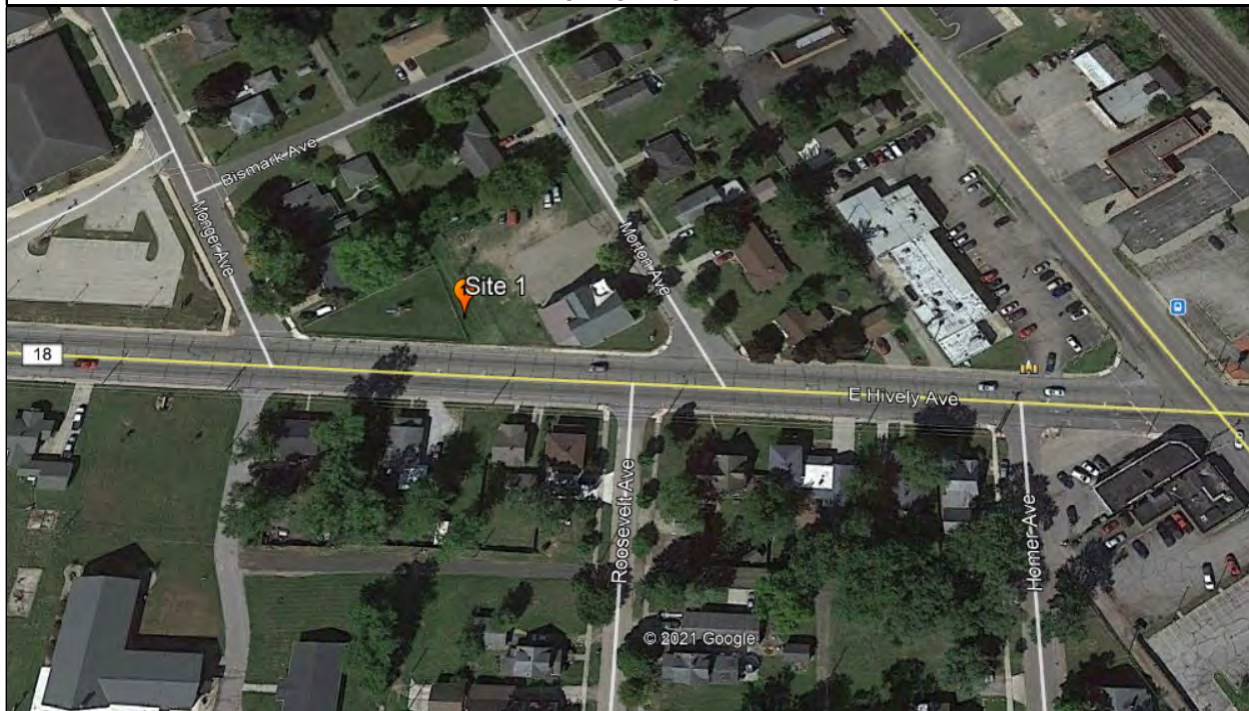
Source: Weather Underground. East Elkhart Station
<https://www.wunderground.com/dashboard/pws/KINELKHA19/graph/2021-03-22/2021-03-22/daily>

Appendix C – Ambient Noise Measurement Logs

EQUIPMENT:	METER	Norsonics 132		CALIBRATOR	EXTECH 407744	
CALIBRATION:	START	93.8	dB	END	94.0	dB
RESPONSE:	FAST		SLOW	X	A-WEIGHTING	X
WEATHER DATA:		Clear, Sunny, Mid 60's , Approximately 10+ mph wind				

TRAFFIC DATA			DATE:	3/22/2021
ROAD	Hively Ave. EB	Hively Ave. WB	SITE #:	1
AUTOS	71	67	START:	11:46
MED TRKS	10	6	END:	12:06
HVY TRKS	3	2	LEQ:	63.5
DURATION	20 Minutes	20 Minutes	SPEED:	35 mph

SITE SKETCH



BACKGROUND NOISE	Birds Chirping * Noticed at 14 minutes in
MAJOR SOURCES	Hively Ave.
UNUSUAL EVENTS	
OTHER NOTES	

Period length	(0:1:0.0)	H:M:S.mS	
Total number of periods		20	
Number of periods before trigger		0	
Number of periods after trigger		20	
Trig time	(2021/3/22 12:17:50.0)	Y-Mo-D H:M:S.mS	
Measurement effective duration	(0:20:0.0)	H:M:S.mS	
Period:	Time:		LAeq
	0 (2021-03-22 12:17:50.000)		61.4
	1 (2021-03-22 12:18:50.000)		60.9
	2 (2021-03-22 12:19:50.000)		63.5
	3 (2021-03-22 12:20:50.000)		60
	4 (2021-03-22 12:21:50.000)		64.2
	5 (2021-03-22 12:22:50.000)		64.7
	6 (2021-03-22 12:23:50.000)		67.8
	7 (2021-03-22 12:24:50.000)		61.3
	8 (2021-03-22 12:25:50.000)		60.8
	9 (2021-03-22 12:26:50.000)		61.1
	10 (2021-03-22 12:27:50.000)		62.2
	11 (2021-03-22 12:28:50.000)		62.3
	12 (2021-03-22 12:29:50.000)		61.8
	13 (2021-03-22 12:30:50.000)		63.9
	14 (2021-03-22 12:31:50.000)		60.7
	15 (2021-03-22 12:32:50.000)		64.1
	16 (2021-03-22 12:33:50.000)		62
	17 (2021-03-22 12:34:50.000)		64.1
	18 (2021-03-22 12:35:50.000)		64.1
	19 (2021-03-22 12:36:50.000)		67.5

EQUIPMENT:	METER	Norsonics 132		CALIBRATOR	EXTECH 407744	
CALIBRATION:	START	93.8	dB	END	94.0	dB
RESPONSE:	FAST		SLOW	X	A-WEIGHTING	X
WEATHER DATA:		Clear, Sunny, Mid 60's , Approximately 10+ mph wind				

TRAFFIC DATA			DATE:	3/22/2021
ROAD	E. Hively Ave. EB	E. Hively Ave. WB	SITE #:	2
AUTOS	78	88	START:	12:27
MED TRKS	2	3	END:	12:47
HVY TRKS	1	3	LEQ:	51.1
DURATION	20 Minutes	20 Minutes	SPEED:	35

SITE SKETCH



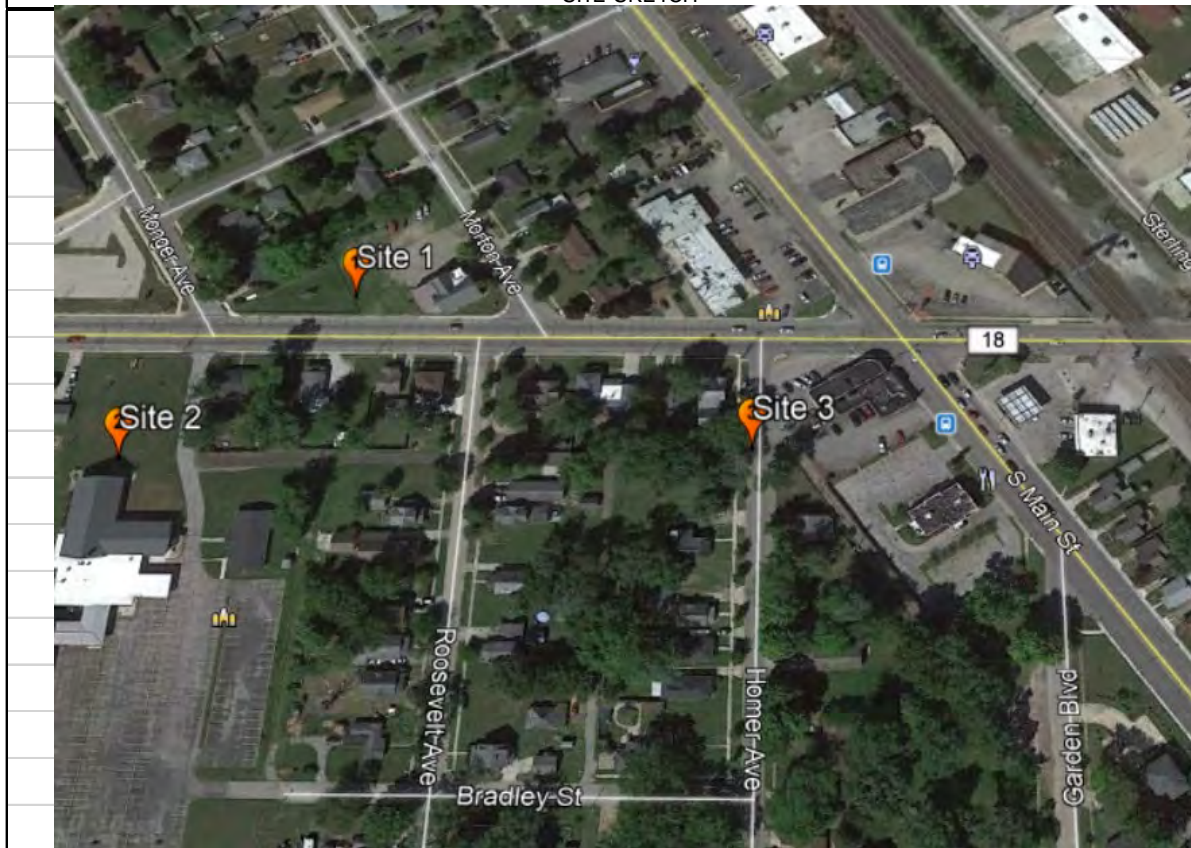
BACKGROUND NOISE	Flag occassionally hitting flag pole, Birds Chirping/Squawking
MAJOR SOURCES	Hively Ave.
UNUSUAL EVENTS	Steady train passing by (no whistle) ~1/4 mile away, distant
OTHER NOTES	

Period length	(0:1:0.0)	H:M:S.mS	
Total number of periods		20	
Number of periods before trigger		0	
Number of periods after trigger		20	
Trig time	(2021/3/22 12:58:39.0)	Y-Mo-D H:M:S.mS	
Measurement effective duration	(0:20:0.0)	H:M:S.mS	
Period:	Time:		LAeq
	0 (2021-03-22 12:58:39.000)		50.8
	1 (2021-03-22 12:59:39.000)		51
	2 (2021-03-22 13:00:39.000)		48.6
	3 (2021-03-22 13:01:39.000)		51.3
	4 (2021-03-22 13:02:39.000)		52
	5 (2021-03-22 13:03:39.000)		48.9
	6 (2021-03-22 13:04:39.000)		52.5
	7 (2021-03-22 13:05:39.000)		51.7
	8 (2021-03-22 13:06:39.000)		52.4
	9 (2021-03-22 13:07:39.000)		51.8
	10 (2021-03-22 13:08:39.000)		47.6
	11 (2021-03-22 13:09:39.000)		50.6
	12 (2021-03-22 13:10:39.000)		49.9
	13 (2021-03-22 13:11:39.000)		49.7
	14 (2021-03-22 13:12:39.000)		55.7
	15 (2021-03-22 13:13:39.000)		50.8
	16 (2021-03-22 13:14:39.000)		49.3
	17 (2021-03-22 13:15:39.000)		49.6
	18 (2021-03-22 13:16:39.000)		49.1
	19 (2021-03-22 13:17:39.000)		50.1

EQUIPMENT:	METER	Norsonics 132		CALIBRATOR	EXTECH 407744	
CALIBRATION:	START	93.8	dB	END	94.0	dB
RESPONSE:	FAST		SLOW	X	A-WEIGHTING	X
WEATHER DATA:		Clear, Sunny, Mid 60's , Approximately 10+ mph wind				

TRAFFIC DATA			DATE:	3/22/2021
ROAD	E. Hively Ave. EB	E. Hively Ave. WB	SITE #:	3
AUTOS	101	78	START:	1:13 PM
MED TRKS	3	4	END:	1:35 PM
HVY TRKS	5	4	LEQ:	56.3
DURATION	20 Minutes	20 Minutes	SPEED:	35

SITE SKETCH



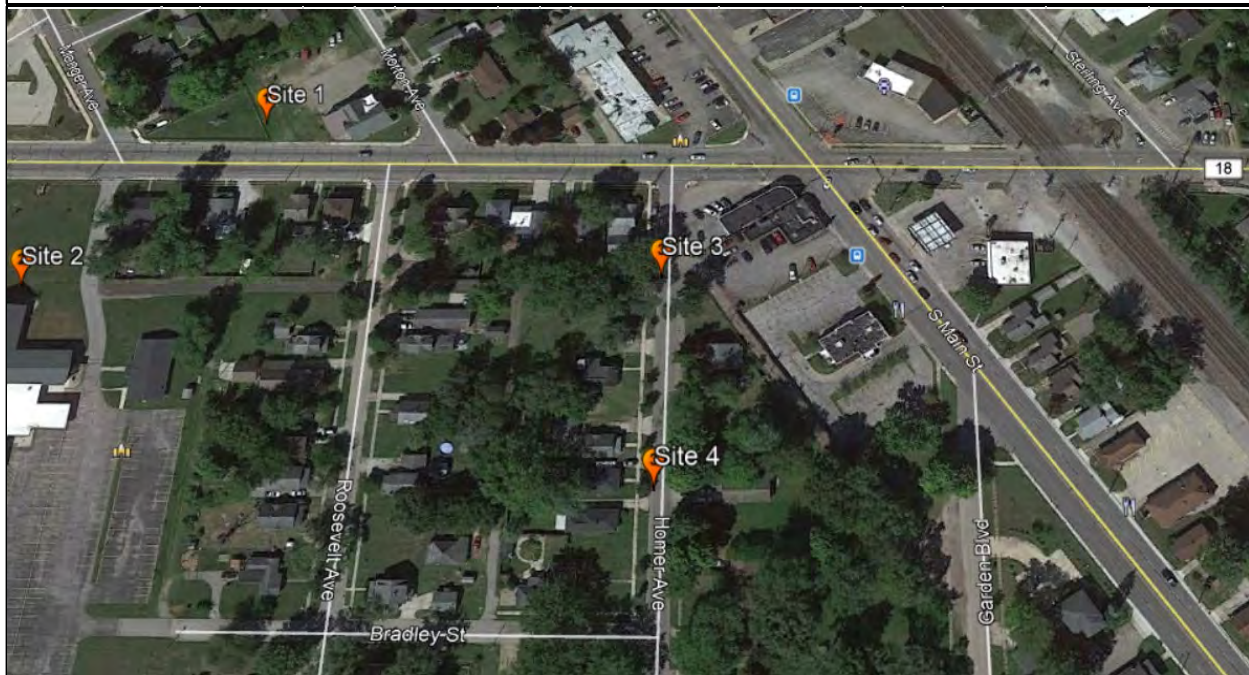
BACKGROUND NOISE	Distant AC Unit, Train in background, Car horn @ 1:23, Loud Car Music @ 1:32
MAJOR SOURCES	Homer Ave. Hively Ave.
UNUSUAL EVENTS	
OTHER NOTES	14 cars on Homer - Overall time was 22 minutes due pause from residents asking Q's.

Period length	(0:1:0.0)	H:M:S.mS	
Total number of periods		20	
Number of periods before trigger		0	
Number of periods after trigger		20	
Trig time	(2021/3/22 12:58:39.0)	Y-Mo-D H:M:S.mS	
Measurement effective duration	(0:20:0.0)	H:M:S.mS	
Period:	Time:		LAeq
	0 (2021-03-22 12:58:39.000)		50.8
	1 (2021-03-22 12:59:39.000)		51
	2 (2021-03-22 13:00:39.000)		48.6
	3 (2021-03-22 13:01:39.000)		51.3
	4 (2021-03-22 13:02:39.000)		52
	5 (2021-03-22 13:03:39.000)		48.9
	6 (2021-03-22 13:04:39.000)		52.5
	7 (2021-03-22 13:05:39.000)		51.7
	8 (2021-03-22 13:06:39.000)		52.4
	9 (2021-03-22 13:07:39.000)		51.8
	10 (2021-03-22 13:08:39.000)		47.6
	11 (2021-03-22 13:09:39.000)		50.6
	12 (2021-03-22 13:10:39.000)		49.9
	13 (2021-03-22 13:11:39.000)		49.7
	14 (2021-03-22 13:12:39.000)		55.7
	15 (2021-03-22 13:13:39.000)		50.8
	16 (2021-03-22 13:14:39.000)		49.3
	17 (2021-03-22 13:15:39.000)		49.6
	18 (2021-03-22 13:16:39.000)		49.1
	19 (2021-03-22 13:17:39.000)		50.1

EQUIPMENT:	METER	Norsonics 132		CALIBRATOR	EXTECH 407744	
CALIBRATION:	START	93.8	dB	END	94.0	dB
RESPONSE:	FAST		SLOW	X	A-WEIGHTING	X
WEATHER DATA:		Clear, Sunny, Mid 60's , Approximately 10+ mph wind				

TRAFFIC DATA			DATE:	3/22/2021
ROAD	E. Hively Ave. EB	E. Hively Ave. WB	SITE #:	4
AUTOS	133	93	START:	1:47
MED TRKS	7	6	END:	2:09
HVY TRKS	2	1	LEQ:	59.8
DURATION	20 Minutes	20 Minutes	SPEED:	35

SITE SKETCH



BACKGROUND NOISE	Birds chirping, Train noise in background, no whistle
MAJOR SOURCES	Homer Ave. Hively Ave.
UNUSUAL EVENTS	Train 1:52, Truck backing up 10 & 14 mins in,
OTHER NOTES	28 cars on Homer

Period length	(0:1:0.0)	H:M:S.mS	
Total number of periods		22	
Number of periods before trigger		0	
Number of periods after trigger		22	
Trig time	(2021/3/22 13:43:55.0)	Y-Mo-D H:M:S.mS	
Measurement effective duration	(0:20:0.0)	H:M:S.mS	
Period:	Time:		LAeq
	0 (2021-03-22 13:43:55.000)		58.7
	1 (2021-03-22 13:44:55.000)		62.1
	2 (2021-03-22 13:45:55.000)		61.8
	3 (2021-03-22 13:46:55.000)		68.7
	4 (2021-03-22 13:47:55.000)		58.3
	5 (2021-03-22 13:48:55.000)		62.9
	6 (2021-03-22 13:49:55.000)		60.2
	7 (2021-03-22 13:50:55.000)		64.6
	8 (2021-03-22 13:51:55.000)		61.7
	9 (2021-03-22 13:52:55.000)		59.8
	10 (2021-03-22 13:53:55.000)		58.7
	11 (2021-03-22 13:54:55.000)		57.3
	12 (2021-03-22 13:55:55.000)		55.8
	13 (2021-03-22 13:56:55.000)		59.7
	14 (2021-03-22 13:57:55.000)		63
	15 (2021-03-22 13:58:55.000)		63.8
	16 (2021-03-22 13:59:55.000)		56
	17 (2021-03-22 14:00:55.000)		58.4
	18 (2021-03-22 14:01:55.000)		57.4
	19 (2021-03-22 14:02:55.000)		67.7
	20 (2021-03-22 14:03:55.000)		65
	21 (2021-03-22 14:04:55.000)		63.6

EQUIPMENT:	METER	Norsonics 132		CALIBRATOR	EXTECH 407744	
CALIBRATION:	START	94.0	dB	END	94.0	dB
RESPONSE:	FAST		SLOW	X	A-WEIGHTING	X
					BATTERY CHECK	X
WEATHER DATA:	Clear, Sunny, Mid 60's , Approximately 10+ mph wind					

TRAFFIC DATA			DATE:	3/22/2021
ROAD	Hammond Ave. SB	Hammond Ave. NB	SITE #:	5
AUTOS	51	66	START:	2:34
MED TRKS	1	1	END:	2:56
HVY TRKS	0	1	LEQ:	67.3
DURATION	20 Minutes	20 Minutes	SPEED:	35

SITE SKETCH



BACKGROUND NOISE	Auto Mechanic Shop nearby,
MAJOR SOURCES	Hammond Ave, E. Hively Ave.
UNUSUAL EVENTS	19:17 min Train Whistle
OTHER NOTES	Nearby construction: Added alternative site (Site 7) for less background noise

Period length	(0:1:0.0)	H:M:S.mS	
Total number of periods		22	
Number of periods before trigger		0	
Number of periods after trigger		22	
Trig time	(2021/3/22 15:4:50.0)	Y-Mo-D H:M:S.mS	
Measurement effective duration	(0:20:0.0)	H:M:S.mS	
Period:	Time:		LAeq
	0 (2021-03-22 15:04:50.000)		68.6
	1 (2021-03-22 15:05:50.000)		67.5
	2 (2021-03-22 15:06:50.000)		63.7
	3 (2021-03-22 15:07:50.000)		70.4
	4 (2021-03-22 15:08:50.000)		67.7
	5 (2021-03-22 15:09:50.000)		67.2
	6 (2021-03-22 15:10:50.000)		69.7
	7 (2021-03-22 15:11:50.000)		68.7
	8 (2021-03-22 15:12:50.000)		69.5
	9 (2021-03-22 15:13:50.000)		67.9
	10 (2021-03-22 15:14:50.000)		66
	11 (2021-03-22 15:15:50.000)		63.9
	12 (2021-03-22 15:16:50.000)		64.6
	13 (2021-03-22 15:17:50.000)		63.8
	14 (2021-03-22 15:18:50.000)		65.6
	15 (2021-03-22 15:19:50.000)		68
	16 (2021-03-22 15:20:50.000)		64.4
	17 (2021-03-22 15:21:50.000)		65.6
	18 (2021-03-22 15:22:50.000)		68.2
	19 (2021-03-22 15:23:50.000)		70.1
	20 (2021-03-22 15:24:50.000)		68.9
	21 (2021-03-22 15:25:50.000)		69

EQUIPMENT:	METER	Norsonics 132		CALIBRATOR	EXTECH 407744	
CALIBRATION:	START	94.0	dB	END	94.0	dB
RESPONSE:	FAST		SLOW	X	A-WEIGHTING	X
					BATTERY CHECK	X
WEATHER DATA:	Clear, Sunny, Mid 60's , Approximately 10+ mph wind					

TRAFFIC DATA			DATE:	3/22/2021
ROAD	Dover St.	Warren St.	SITE #:	6
AUTOS	0	2	START:	3:32
MED TRKS	0	1	END:	3:53
HVY TRKS	0	0	LEQ:	54.9
DURATION	20 Minutes	20 Minutes	SPEED:	35

SITE SKETCH



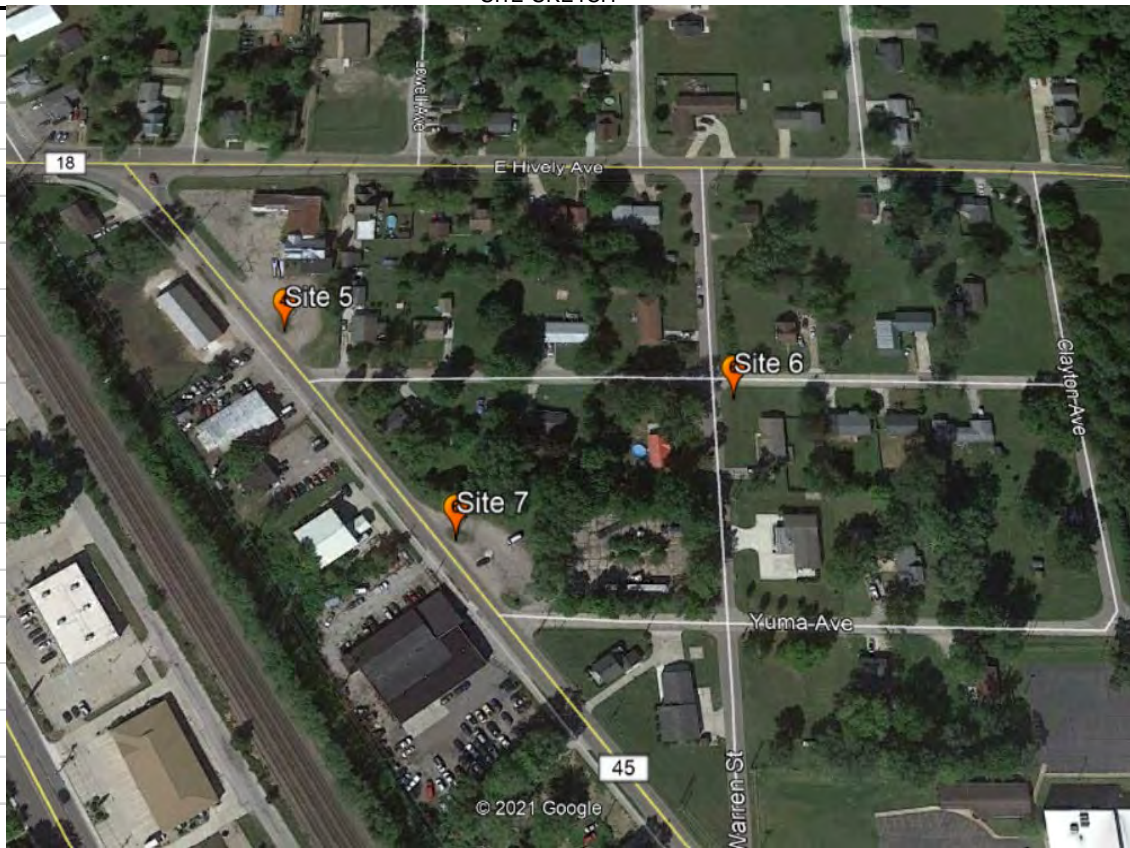
BACKGROUND NOISE	Kids playing outside nearby, train (no whistle)
MAJOR SOURCES	Dover St., Warren St., Hammond St., Hively Ave.,
UNUSUAL EVENTS	
OTHER NOTES	

Period length	(0:1:0.0)	H:M:S.mS	
Total number of periods		20	
Number of periods before trigger		0	
Number of periods after trigger		20	
Trig time	(2021/3/22 15:33:21.0)	Y-Mo-D H:M:S.mS	
Measurement effective duration	(0:20:0.0)	H:M:S.mS	
Period:	Time:		LAeq
	0 (2021-03-22 15:33:21.000)		54
	1 (2021-03-22 15:34:21.000)		53
	2 (2021-03-22 15:35:21.000)		54.2
	3 (2021-03-22 15:36:21.000)		73.1
	4 (2021-03-22 15:37:21.000)		57
	5 (2021-03-22 15:38:21.000)		52.2
	6 (2021-03-22 15:39:21.000)		61.3
	7 (2021-03-22 15:40:21.000)		56.3
	8 (2021-03-22 15:41:21.000)		52.5
	9 (2021-03-22 15:42:21.000)		51.8
	10 (2021-03-22 15:43:21.000)		52.7
	11 (2021-03-22 15:44:21.000)		53.2
	12 (2021-03-22 15:45:21.000)		54.1
	13 (2021-03-22 15:46:21.000)		52.9
	14 (2021-03-22 15:47:21.000)		55.3
	15 (2021-03-22 15:48:21.000)		53.7
	16 (2021-03-22 15:49:21.000)		55
	17 (2021-03-22 15:50:21.000)		52.5
	18 (2021-03-22 15:51:21.000)		53.3
	19 (2021-03-22 15:52:21.000)		52.1

EQUIPMENT:	METER	Norsonics 132	CALIBRATOR	EXTECH 407744
CALIBRATION:	START	94.0	dB	END 94.0 dB
RESPONSE:	FAST	SLOW	X	A-WEIGHTING X BATTERY CHECK X
WEATHER DATA: Clear, Sunny, Mid 60's , Approximately 10+ mph wind				

TRAFFIC DATA			DATE:	3/22/2021
ROAD	Hammond Ave. SB	Hammond Ave. NB	SITE #:	7 (5 alt/backup)
AUTOS	72	60	START:	4:08
MED TRKS	2	3	END:	4:28
HVY TRKS	3	4	LEQ:	69.2
DURATION	20 Minutes	20 Minutes	SPEED:	35

SITE SKETCH



BACKGROUND NOISE	Distant Auto Mechanic Shop, birds
MAJOR SOURCES	Hammond Ave
UNUSUAL EVENTS	
OTHER NOTES	

Period length	(0:1:0.0)	H:M:S.mS	
Total number of periods		20	
Number of periods before trigger		0	
Number of periods after trigger		20	
Trig time	(2021/3/22 15:59:1.0)	Y-Mo-D H:M:S.mS	
Measurement effective duration	(0:20:0.0)	H:M:S.mS	
Period:	Time:		LAeq
	0 (2021-03-22 15:59:01.000)		68.4
	1 (2021-03-22 16:00:01.000)		74.3
	2 (2021-03-22 16:01:01.000)		68.7
	3 (2021-03-22 16:02:01.000)		71.9
	4 (2021-03-22 16:03:01.000)		65.7
	5 (2021-03-22 16:04:01.000)		68.7
	6 (2021-03-22 16:05:01.000)		67.1
	7 (2021-03-22 16:06:01.000)		71.9
	8 (2021-03-22 16:07:01.000)		69
	9 (2021-03-22 16:08:01.000)		69.1
	10 (2021-03-22 16:09:01.000)		75.6
	11 (2021-03-22 16:10:01.000)		69.8
	12 (2021-03-22 16:11:01.000)		68.9
	13 (2021-03-22 16:12:01.000)		69.3
	14 (2021-03-22 16:13:01.000)		64.8
	15 (2021-03-22 16:14:01.000)		68.6
	16 (2021-03-22 16:15:01.000)		74
	17 (2021-03-22 16:16:01.000)		65.8
	18 (2021-03-22 16:17:01.000)		70.1
	19 (2021-03-22 16:18:01.000)		71.4

Appendix D – Traffic Volumes

Road Name	Location	2022 No Build		2042 No Build		2042 (Build)		T-24 %	DHV	Exis	By D-split, as needed		DHV	DYNB	By D-split, as needed		DHV	DYBLD	By D-split, as needed		
		AADT	DHV	AADT	DHV	AADT	DHV				2-lanes				2-lanes				2-lanes		
Hively Ave	West of Monger	8,550	900	11,920	1,210	11,920	1,210	2.5%	900	97.50%	456	421	1,210	97.50%	613	566	1,210	97.50%	613	566	A
									900	1.25%	6	5	1210	1.25%	8	7	1210	1.25%	8	7	MT
									900	1.25%	6	5	1210	1.25%	8	7	1210	1.25%	8	7	HT
Hively Ave (existing)	East of Monger to Warren	8,200	820	9,900	990	3,700	370	3.0%	820	97.00%	437	358	990	97.00%	528	432	370	97.00%	197	162	A
									820	1.50%	7	6	990	1.50%	8	7	370	1.50%	3	2	MT
									820	1.50%	7	6	990	1.50%	8	7	370	1.50%	3	2	HT
Hively Ave (exis/bld)	East of Warren	5,000	500	6,800	680	8,200	820	3.0%	500	97.50%	254	234	680	97.50%	345	318	820	97.50%	416	384	A
									500	1.25%	3	3	680	1.25%	4	4	820	1.25%	5	5	MT
									500	1.25%	3	3	680	1.25%	4	4	820	1.25%	5	5	HT
Hively Ave (new)	bet Warren/Hively Ave Conn	0	0	0	0	9,100	910	3.0%	0	97.50%	0	0	0	97.50%	0	0	910	97.50%	452	435	A
									0	1.25%	0	0	0	1.25%	0	0	910	1.25%	6	6	MT
									0	1.25%	0	0	0	1.25%	0	0	910	1.25%	6	6	HT
Main St	S of Hively	14,640	1,410	17,570	1,700	17,570	1,700	3.0%	1,410	97.00%	684	684	1,700	97.00%	825	825	1,700	97.00%	825	825	A
									1410	1.50%	11	11	1700	1.50%	13	13	1700	1.50%	13	13	MT
									1410	1.50%	11	11	1700	1.50%	13	13	1700	1.50%	13	13	HT
Sterling Ave	N of Hively	3,550	330	5,680	520	4,400	400	2.0%	330	98.00%	165	158	520	98.00%	260	250	400	98.00%	200	192	A
									330	1.00%	2	2	520	1.00%	3	3	400	1.00%	2	2	MT
									330	1.00%	2	2	520	1.00%	3	3	400	1.00%	2	2	HT
Hammond Ave	S of Hively	3,610	360	4,340	440	4,340	440	3.0%	360	97.00%	182	168	440	97.00%	222	205	440	97.00%	304	107	A
									360	1.50%	3	3	440	1.50%	3	3	440	1.50%	5	5	MT
									360	1.50%	3	3	440	1.50%	3	3	440	1.50%	5	5	HT

Road Name	Location	2022 No Build		2042 No Build		2042 (Build)		T-24 %		DHV	Exis			DHV	DYNB			DHV	DYBLD			
		AAADT	DHV	AAADT	DHV	AAADT	DHV															1-lane
Morton Ave	N of Hively	600	80	600	80	600	80	0.0%		80	100.00%	80	40	80	100.00%	80	40	80	100.00%	80	40	A
										80	0.00%	0	0	80	0.00%	0	0	80	0.00%	0	0	MT
										80	0.00%	0	0	80	0.00%	0	0	80	0.00%	0	0	HT
Monger Ave	N of Hively	270	40	270	40	870	120	2.5%		40	97.50%	39	20	40	97.50%	39	20	120	97.50%	117	59	A
										40	1.25%	1	0	40	1.25%	1	0	120	1.25%	2	1	MT
										40	1.25%	1	0	40	1.25%	1	0	120	1.25%	2	1	HT
Bismark Ave	E of Main	240	20	240	20	240	20	0.0%		20	100.00%	20	10	20	100.00%	20	10	20	100.00%	20	10	A
										20	0.00%	0	0	20	0.00%	0	0	20	0.00%	0	0	MT
										20	0.00%	0	0	20	0.00%	0	0	20	0.00%	0	0	HT
Burr Oak Ave	S of Hively	340	40	340	40	340	40	0.0%		40	100.00%	40	20	40	100.00%	40	20	40	100.00%	40	20	A
										40	0.00%	0	0	40	0.00%	0	0	40	0.00%	0	0	MT
										40	0.00%	0	0	40	0.00%	0	0	40	0.00%	0	0	HT
Roosevelt Ave	S of Hively	340	90	340	90	1,170	190	0.0%		90	100.00%	90	45	90	100.00%	90	45	190	100.00%	190	95	A
										90	0.00%	0	0	90	0.00%	0	0	190	0.00%	0	0	MT
										90	0.00%	0	0	90	0.00%	0	0	190	0.00%	0	0	HT
Homer Ave	S of Hively	830	80	830	80	0	0	0.0%		80	100.00%	80	40	80	100.00%	80	40	0	100.00%	0	0	A
										80	0.00%	0	0	80	0.00%	0	0	0	0.00%	0	0	MT
										80	0.00%	0	0	80	0.00%	0	0	0	0.00%	0	0	HT
Garden St	E of Main	240	30	240	30	240	30	0.0%		30	100.00%	30	15	30	100.00%	30	15	30	100.00%	30	15	A
										30	0.00%	0	0	30	0.00%	0	0	30	0.00%	0	0	MT
										30	0.00%	0	0	30	0.00%	0	0	30	0.00%	0	0	HT
Eddy St	N of Hively	250	30	250	30	250	30	0.0%		30	100.00%	30	15	30	100.00%	30	15	30	100.00%	30	15	A
										30	0.00%	0	0	30	0.00%	0	0	30	0.00%	0	0	MT
										30	0.00%	0	0	30	0.00%	0	0	30	0.00%	0	0	HT
Lowell Ave	N of Hively	120	10	120	10	120	10	0.0%		10	100.00%	10	5	10	100.00%	10	5	10	100.00%	10	5	A
										10	0.00%	0	0	10	0.00%	0	0	10	0.00%	0	0	MT
										10	0.00%	0	0	10	0.00%	0	0	10	0.00%	0	0	HT
Dover St	Btwn Hammond and Warren	70	10	70	10	1,950	10	0.0%		10	100.00%	10	5	10	100.00%	10	5	10	100.00%	10	5	A
										10	0.00%	0	0	10	0.00%	0	0	10	0.00%	0	0	MT
										10	0.00%	0	0	10	0.00%	0	0	10	0.00%	0	0	HT
Hively Ave Connector	Btwn New Hively and Main	0	0	0	0	8,490	780	2.5%		0	97.50%	0	0	0	97.50%	0	0	780	97.50%	761	380	A
										0	1.25%	0	0	0	1.25%	0	0	780	1.25%	10	5	MT
										0	1.25%	0	0	0	1.25%	0	0	780	1.25%	10	5	HT
N Warren St	N of Hively	110	10	110	10	2,040	210	0.0%		10	100.00%	10	5	10	100.00%	10	5	10	100.00%	10	5	A
										10	0.00%	0	0	10	0.00%	0	0	10	0.00%	0	0	MT
										10	0.00%	0	0	10	0.00%	0	0	10	0.00%	0	0	HT
S Warren St	S of Hively	110	10	110	10	2,040	210	50.0%		10	100.00%	10	5	10	100.00%	10	5	210	97.00%	204	102	A
										10	0.00%	0	0	10	0.00%	0	0	210	1.50%	3	2	MT
										10	0.00%	0	0	10	0.00%	0	0	210	1.50%	3	2	HT

Appendix E – Predicted Sound Levels

Receptor Number	Land Use	CNE	NAC	Number of DU's	NAC	Existing Year	Design Year No-Build	Design Year Build Alt	DYBLD Subst Incr
1	Residential	4	B	1	66	61.7	63.0	63.7	2.0
2	Residential	4	B	1	66	63.1	64.4	66.0	2.9
3	Residential	4	B	1	66	50.1	51.3	55.2	5.1
4	Residential	4	B	1	66	44.5	45.6	48.8	4.3
5	Residential	4	B	1	66	41.9	43.0	45.9	4.0
6	Residential	4	B	1	66	41.6	42.6	45.7	4.1
7	Residential	4	B	1	66	43.4	44.4	48.3	4.9
8	Residential	4	B	1	66	44.6	45.7	49.8	5.2
9	Residential	4	B	1	66	60.3	61.5	63.6	3.3
10	Residential	4	B	1	66	61.5	62.6	66.2	4.7
11	Residential	4	B	1	66	47.3	48.3	53.4	6.1
12	Residential	4	B	1	66	44.5	45.8	48.8	4.3
13	Residential	4	B	1	66	52.1	53.0	58.2	6.1
16	Residential	4	B	1	66	63.8	64.6	57.8	-6.0
17	Residential	4	B	1	66	51.7	52.3	54.0	2.3
18	Residential	4	B	1	66	46.8	47.5	50.2	3.4
19	Residential	4	B	1	66	47.7	48.4	51.3	3.6
20	Residential	4	B	1	66	52.9	53.7	53.3	0.4
21	Residential	4	B	1	66	65.3	66.2	55.8	-9.5
22	Residential	4	B	1	66	66.0	66.7	55.4	-10.6
23	Residential	4	B	1	66	51.4	52.1	51.4	0.0
24	Residential	4	B	1	66	48.8	49.4	50.5	1.7
25	Residential	4	B	1	66	51.2	51.9	51.8	0.6
26	Residential	4	B	1	66	52.7	53.5	53.0	0.3
27	Residential	4	B	1	66	54.2	54.7	52.9	-1.3
28	Residential	4	B	1	66	65.2	65.9	55.8	-9.4
29	Residential	1	B	1	66	63.7	64.5	65.9	2.2
30	Residential	1	B	1	66	58.8	59.5	60.2	1.4
31	Residential	1	B	1	66	52.6	52.7	53.2	0.6
32	Residential	1	B	1	66	53.5	53.8	55.4	1.9
33	Residential	1	B	1	66	55.5	55.6	56.9	1.4
34	Residential	1	B	1	66	55.2	55.4	56.3	1.1
35	Residential	1	B	1	66	55.1	55.5	56.6	1.5
36	Residential	1	B	1	66	57.0	57.5	58.2	1.2
37	Residential	1	B	1	66	59.6	60.3	60.1	0.5
38	Residential	1	B	1	66	64.7	65.5	64.8	0.1
39	Place of Worship - Exterior people activity area	1	C	-	66	57.5	58.3	58.6	1.1
40	Residential	1	B	1	66	53.4	54.0	55.7	2.3
41	Residential	1	B	1	66	51.6	52.1	54.1	2.5
42	Residential	1	B	1	66	50.5	50.8	52.4	1.9
43	Residential	1	B	1	66	47.8	48.2	50.4	2.6
44	Residential	1	B	1	66	49.9	50.1	54.0	4.1
45	Residential	1	B	1	66	51.0	51.5	55.3	4.3
46	Residential	1	B	-	66	54.2	54.9	58.2	4.0
47	Residential	1	B	1	66	57.9	58.9	62.1	4.2
49	School - Recreational area	1	C	-	66	47.8	49.1	49.3	1.5
50	Residential	1	B	1	66	43.8	45.0	45.5	1.7

Receptor Number	Land Use	CNE	NAC	Number of DU's	NAC	Existing Year	Design Year No-Build	Design Year Build Alt	DYBLD Subst Incr
51	Residential	1	B	1	66	43.8	45.0	45.4	1.6
52	Residential	1	B	1	66	46.3	47.5	47.7	1.4
53	Residential	1	B	1	66	49.0	50.3	50.4	1.4
54	Residential	1	B	1	66	53.3	54.6	54.7	1.4
55	Residential	1	B	1	66	63.5	64.8	64.9	1.4
56	Residential	1	B	1	66	63.5	64.8	64.8	1.3
57	Residential	2	B	1	66	63.6	64.9	65.0	1.4
58	Residential	2	B	1	66	64.6	65.9	65.9	1.3
59	Residential	2	B	1	66	65.0	66.3	66.4	1.4
60	Residential	2	B	1	66	53.5	54.7	55.1	1.6
61	Residential	2	B	1	66	48.9	49.5	50.8	1.9
62	Residential	2	B	1	66	64.0	65.3	65.6	1.6
63	Residential	2	B	1	66	64.3	65.5	66.0	1.7
64	Residential	2	B	1	66	64.2	65.5	66.8	2.6
65	Place of Worship (interior)	2	D	-	51	32.3	33.4	38.6	6.3
70	Residential	2	B	1	66	52.6	52.9	65.8	13.2
71	Residential	2	B	1	66	53.7	53.8	62.7	9.0
72	Residential	2	B	1	66	53.0	53.1	59.3	6.3
73	Residential	2	B	1	66	53.4	53.5	58.7	5.3
74	Residential	2	B	1	66	54.3	54.4	58.6	4.3
75	Residential	2	B	1	66	52.1	52.2	55.7	3.6
76	Residential	3	B	1	66	53.0	53.1	56.6	3.6
77	Residential	3	B	1	66	46.8	47.2	53.2	6.4
78	Residential	3	B	1	66	48.8	49.2	56.5	7.7
79	Residential	3	B	1	66	51.1	51.4	63.3	12.2
83	Residential	1	B	1	66	47.8	48.3	60.4	12.6
84	Residential	1	B	1	66	57.5	58.0	62.0	4.5
86	Residential	3	B	1	66	53.1	53.5	59.0	5.9
87	Residential	3	B	1	66	53.8	54.0	53.7	-0.1
88	Residential	3	B	1	66	54.1	54.4	53.0	-1.1
89	Residential	3	B	1	66	49.8	50.2	52.8	3.0
90	Residential	3	B	1	66	54.0	54.8	55.7	1.7
91	Residential	3	B	1	66	54.4	55.0	57.4	3.0
93	Residential	3	B	1	66	53.7	54.4	54.8	1.1
94	Residential	3	B	1	66	52.3	52.7	51.9	-0.4
95	Residential	3	B	1	66	49.6	50.2	50.4	0.8
96	Residential	3	B	1	66	49.0	49.6	49.9	0.9
97	Residential	3	B	1	66	50.9	51.6	52.5	1.6
98	Residential	3	B	1	66	49.4	50.0	50.6	1.2
99	Residential	3	B	1	66	49.9	50.4	50.9	1.0
100	Residential	3	B	1	66	53.7	54.3	54.9	1.2

Receptor Number	Land Use	CNE	NAC	Number of DU's	NAC	Existing Year	Design Year No-Build	Design Year Build Alt	DYBLD Subst Incr
101	Residential	3	B	1	66	57.5	58.2	57.6	0.1
102	Residential	3	B	1	66	65.7	66.4	65.2	-0.5
103	Residential	3	B	1	66	66.3	67.1	66.6	0.3
104	Residential	3	B	1	66	64.7	65.5	65.0	0.3
105	Residential	3	B	1	66	59.4	60.2	60.0	0.6
106	Residential	3	B	1	66	68.3	69.0	69.0	0.7
107	Residential	3	B	1	66	68.1	68.9	68.6	0.5
108	Residential	3	B	1	66	68.7	69.5	69.1	0.4
109	Residential	3	B	1	66	68.3	69.0	68.6	0.3
110	Residential	3	B	1	66	67.5	68.3	66.0	-1.5
113	Residential	4	B	1	66	57.6	58.0	59.8	2.2
114	Residential	4	B	1	66	58.8	59.2	60.8	2.0
115	Residential	4	B	1	66	56.7	57.2	58.8	2.1
116	Residential	4	B	1	66	48.8	49.3	57.3	8.5
117	Residential	4	B	1	66	50.5	50.9	53.4	2.9
118	Residential	4	B	1	66	56.3	56.8	59.2	2.9
119	Residential	4	B	1	66	54.5	55.1	56.6	2.1
120	Residential	4	B	1	66	50.7	51.3	54.1	3.4
121	Residential	4	B	1	66	49.6	50.3	54.5	4.9
122	Residential	4	B	1	66	49.6	50.4	57.1	7.5
127	Residential	4	B	1	66	62.1	63.2	66.2	4.1
128	Residential	4	B	1	66	48.1	49.1	55.5	7.4
129	Residential	4	B	1	66	45.5	46.2	54.3	8.8
130	Residential	4	B	1	66	44.3	44.9	51.5	7.2
131	Residential	4	B	1	66	44.2	44.9	49.5	5.3
132	Residential	4	B	1	66	43.5	44.2	47.3	3.8
133	Residential	4	B	1	66	43.8	44.8	49.1	5.3
134	Residential	4	B	1	66	43.3	44.3	47.7	4.4
135	Residential	4	B	1	66	43.3	44.4	47.4	4.1
136	Residential	4	B	1	66	47.7	48.8	53.2	5.5
137	Residential	4	B	1	66	63.4	64.7	67.5	4.1
138	Residential	4	B	1	66	63.6	64.9	67.5	3.9
139	Residential	4	B	1	66	63.9	64.2	65.6	1.7
140	Place of Worship (interior)	2	D	-	51	29.5	30.4	39.8	10.3
MH-0	Maple Heart Trail 0'	4	C	-	66	56.5	57.3	65.1	8.6
MH-100	Maple Heart Trail 100'	4	C	-	66	58.1	58.7	65.2	7.1
MH-200	Maple Heart Trail 200'	4	C	-	66	62.8	63.5	65.2	2.4
MH-300	Maple Heart Trail 300'	4	C	-	66	63.4	64.1	64.9	1.5
MH-400	Maple Heart Trail 400'	4	C	-	66	63.1	63.8	64.7	1.6
MH-500	Maple Heart Trail 500'	4	C	-	66	63.3	63.9	65.0	1.7

From: [Bales, Ronald](#)
To: [Jack, Laura](#)
Cc: [Miller, Brandon](#); [Vachet, Wendy](#); [Kuchta, Andrew](#); [Springer, Jason](#)
Subject: RE: EXTERNAL: RE: Des 1801933 E Hively Avenue Grade Separation Noise Report- Submittal
Date: Tuesday, May 25, 2021 9:29:34 AM

INDOT Environmental Services Division (ESD) has reviewed the noise analysis for the above-referenced project and found it to be technically sufficient. As you are aware, INDOT no longer comments on recommendations provided in noise studies for local agency projects. However, it is our assessment that the study has been completed in accordance with federal guidelines and state policy. Please ensure the town and county planning offices receive a copy of noise analysis for their records. Thank you.

Ron Bales

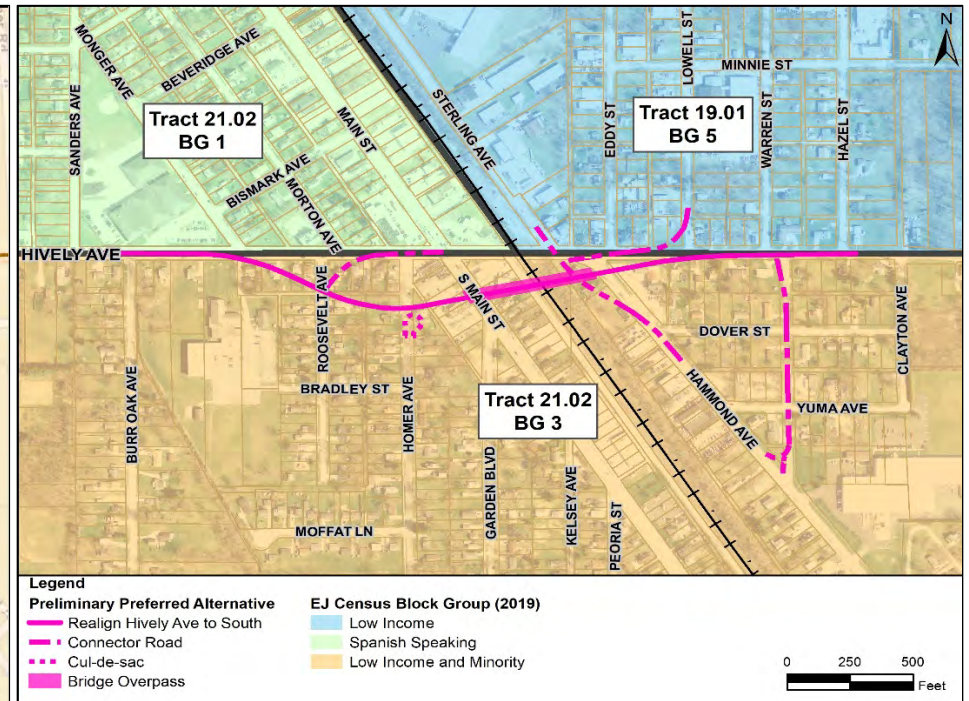
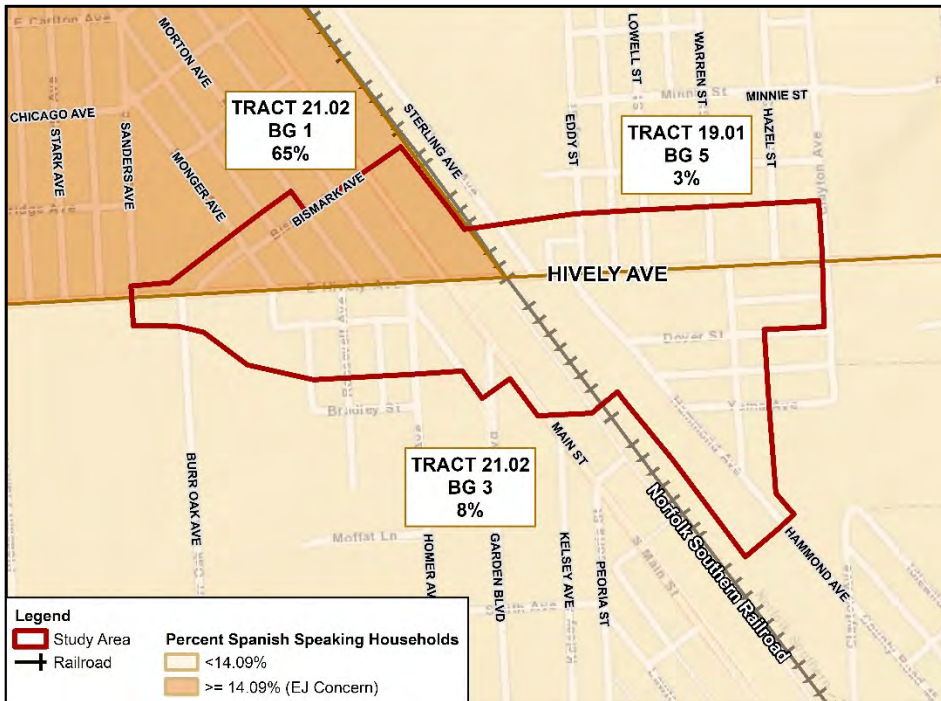
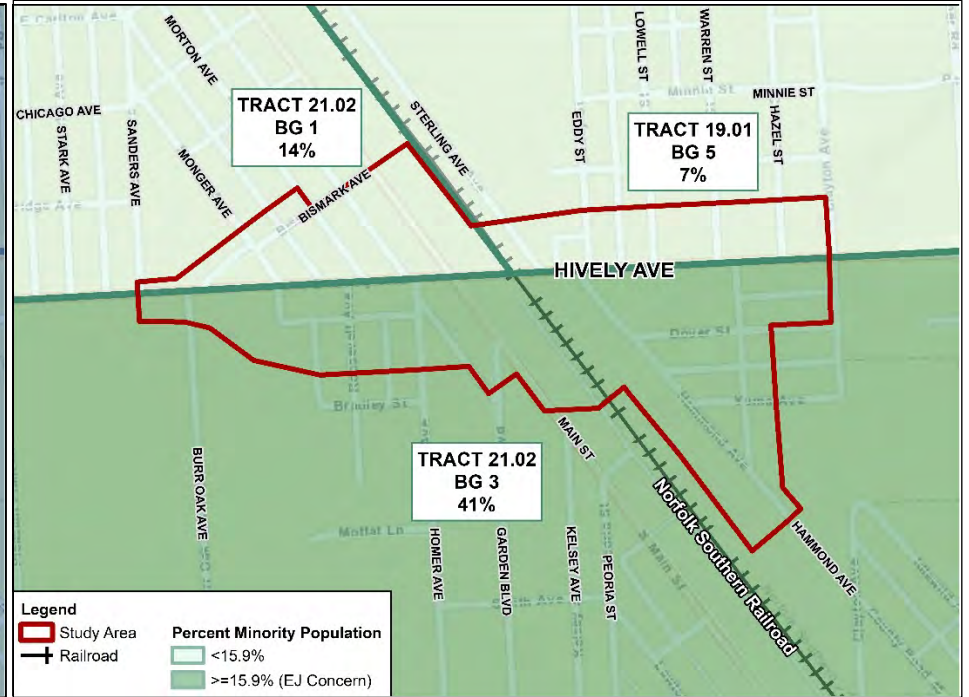
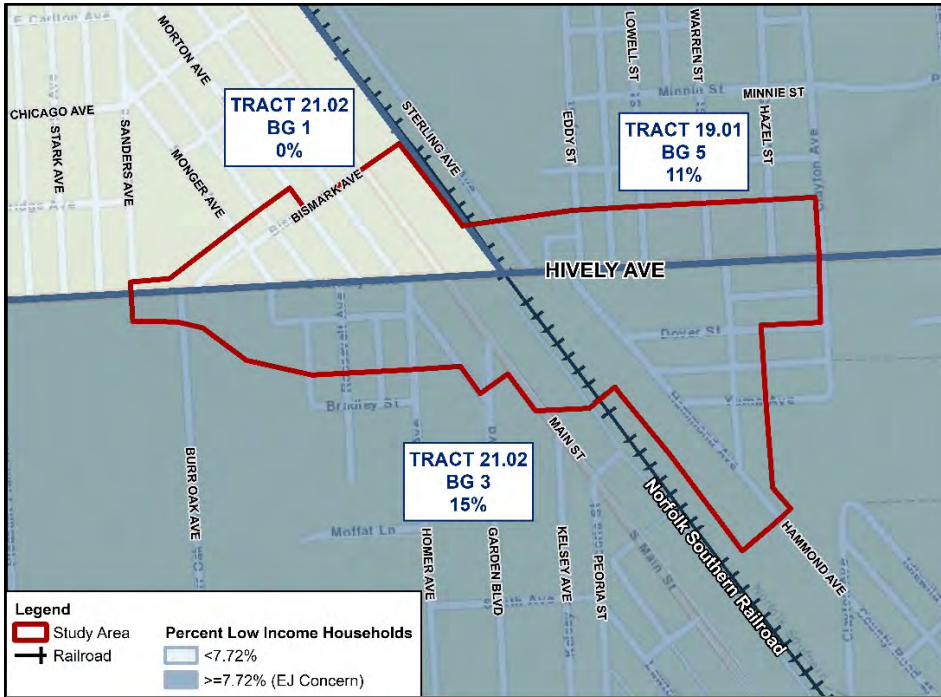
INDOT-Environmental Services Division

Office: (317) 515-7908

Email: rbales@indot.in.gov

Appendix J:

Environmental Justice Analysis



RACE		United States[®] Census Bureau
Note: The table shown may have been modified by user selections. Some information may be missing.		
DATA NOTES		
TABLE ID:	B02001	
SURVEY/PROGRAM:	American Community Survey	
VINTAGE:	2019	
DATASET:	ACSDT5Y2019	
PRODUCT:	ACS 5-Year Estimates Detailed Tables	
UNIVERSE:	Total population	
FTP URL:	None	
API URL:	https://api.census.gov/data/2019/acs/acs5	
USER SELECTIONS		
TOPICS	Race and Ethnicity	
GEOS	Elkhart County, Indiana; Block Group 5, Census Tract 19.01, Elkhart County, Indiana; Block Group 1, Census Tract 21.02, Elkhart County, Indiana; Block Group 3, Census Tract 21.02, Elkhart County, Indiana	
VINTAGES	2019	
DATASETS	Detailed Tables	
EXCLUDED COLUMNS		
	None	
APPLIED FILTERS		
	None	
APPLIED SORTS		
	None	

Table: ACSDT5Y2019.B02001

WEB ADDRESS	https://data.census.gov/cedsci/table?q=&t=Race%20and%20Ethnicity&g=0500000US18039_1500000US180390019015,180390021021,180390021023&y=2019&d=ACS%205-Year%20Estimates%20Detailed%20Tables&tid=ACSDT5Y2019.B02001&hidePreview=true
TABLE NOTES	<p>Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.</p>
	<p>Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.</p> <p>Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.</p>
	<p>Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates</p>
	<p>Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see ACS Technical Documentation). The effect of nonsampling error is not represented in these tables.</p>
	<p>The 2015-2019 American Community Survey (ACS) data generally reflect the September 2018 Office of Management and Budget (OMB) delineations of metropolitan and micropolitan statistical areas. In certain instances, the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB delineation lists due to differences in the effective dates of the geographic entities.</p>
	<p>Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.</p>

Table: ACSDT5Y2019.B02001

	<p>Explanation of Symbols: * An "***" entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.</p> <p>* An "-" entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution, or the margin of error associated with a median was larger than the median itself.</p> <p>* An "-" following a median estimate means the median falls in the lowest interval of an open-ended distribution.</p> <p>* An "+" following a median estimate means the median falls in the upper interval of an open-ended distribution.</p> <p>* An "****" entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.</p> <p>* An "*****" entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.</p> <p>* An "N" entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.</p> <p>* An "(X)" means that the estimate is not applicable or not available.</p>
COLUMN NOTES	None

Table: ACSDT5Y2019.B02001

	Elkhart County, Indiana		Block Group 1, Census Tract 21.02, Elkhart County, Indiana	
Label	Estimate	Margin of Error	Estimate	Margin of Error
Total:	204,558	*****	1,286	±556
White alone	178,541	±1,183	1,109	±568
Black or African American alone	11,115	±695	37	±43
American Indian and Alaska Native alone	479	±205	0	±12
Asian alone	2,147	±203	30	±34
Native Hawaiian and Other Pacific Islander alone	184	±104	0	±12
Some other race alone	5,678	±1,157	86	±109
Two or more races:	6,414	±818	24	±37
Two races including Some other race	870	±370	24	±37
Two races excluding Some other race, and three or more races	5,544	±848	0	±12
Non-White Percent Minority	26,017 12.72%		177 13.76%	

Table: ACSDT5Y2019.B02001

	Block Group 3, Census Tract 21.02, Elkhart County, Indiana		Block Group 5, Census Tract 19.01, Elkhart County, Indiana	
Label	Estimate	Margin of Error	Estimate	Margin of Error
Total:	2,798	±523	1,115	±573
White alone	1,653	±419	1,033	±565
Black or African American alone	789	±327	33	±46
American Indian and Alaska Native alone	5	±9	0	±12
Asian alone	17	±27	0	±12
Native Hawaiian and Other Pacific Islander alone	0	±12	0	±12
Some other race alone	195	±228	0	±12
Two or more races:	139	±119	49	±58
Two races including Some other race	12	±19	0	±12
Two races excluding Some other race, and three or more races	127	±110	49	±58
Non-White Percent Minority	1,145 40.92%		82 7.35%	

HISPANIC OR LATINO ORIGIN		United States[®] Census Bureau
Note: The table shown may have been modified by user selections. Some information may be missing.		
DATA NOTES		
TABLE ID:	B03003	
SURVEY/PROGRAM:	American Community Survey	
VINTAGE:	2019	
DATASET:	ACSDT5Y2019	
PRODUCT:	ACS 5-Year Estimates Detailed Tables	
UNIVERSE:	Total population	
FTP URL:	None	
API URL:	https://api.census.gov/data/2019/acs/acs5	
USER SELECTIONS		
TOPICS	Hispanic or Latino	
GEOS	Elkhart County, Indiana; Block Group 5, Census Tract 19.01, Elkhart County, Indiana; Block Group 1, Census Tract 21.02, Elkhart County, Indiana; Block Group 3, Census Tract 21.02, Elkhart County, Indiana	
EXCLUDED COLUMNS		
	None	
APPLIED FILTERS		
	None	
APPLIED SORTS		
	None	
WEB ADDRESS		
	https://data.census.gov/cedsci/table?q=&t=Hispanic%20or%20Latino&g=0500000US18039_1500000US180390019015,180390021021,180390021023&tid=ACSDT5Y2019.B03003&hidePreview=true	

Table: ACSDT5Y2019.B03003

TABLE NOTES	Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.
	<p>Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.</p> <p>Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.</p>
	Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates
	Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see ACS Technical Documentation). The effect of nonsampling error is not represented in these tables.
	The 2015-2019 American Community Survey (ACS) data generally reflect the September 2018 Office of Management and Budget (OMB) delineations of metropolitan and micropolitan statistical areas. In certain instances, the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB delineation lists due to differences in the effective dates of the geographic entities.
	Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Table: ACSDT5Y2019.B03003

	<p>Explanation of Symbols: * An "***" entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.</p> <p>* An "-" entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution, or the margin of error associated with a median was larger than the median itself.</p> <p>* An "-" following a median estimate means the median falls in the lowest interval of an open-ended distribution.</p> <p>* An "+" following a median estimate means the median falls in the upper interval of an open-ended distribution.</p> <p>* An "****" entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.</p> <p>* An "*****" entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.</p> <p>* An "N" entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.</p> <p>* An "(X)" means that the estimate is not applicable or not available.</p>
COLUMN NOTES	None

Table: ACSDT5Y2019.B03003

	Elkhart County, Indiana		Block Group 1, Census Tract 21.02, Elkhart County, Indiana	
Label	Estimate	Margin of Error	Estimate	Margin of Error
Total:	204,558	*****	1,286	±556
Not Hispanic or Latino	171,975	*****	435	±182
Hispanic or Latino	32,583	*****	851	±523
	15.93%		66.17%	

Table: ACSDT5Y2019.B03003

	Block Group 3, Census Tract 21.02, Elkhart County, Indiana		Block Group 5, Census Tract 19.01, Elkhart County, Indiana	
Label	Estimate	Margin of Error	Estimate	Margin of Error
Total:	2,798	±523	1,115	±573
Not Hispanic or Latino	2,328	±465	1,075	±593
Hispanic or Latino	470	±292	40	±75
	16.80%		3.59%	


POVERTY STATUS IN THE PAST 12 MONTHS OF FAMILIES BY FAMILY TYPE BY PRESENCE OF RELATED CHILDREN UNDER 18 YEARS BY AGE OF RELATED CHILDREN		
Note: The table shown may have been modified by user selections. Some information may be missing.		
DATA NOTES		
TABLE ID:	B17010	
SURVEY/PROGRAM:	American Community Survey	
VINTAGE:	2019	
DATASET:	ACSDT5Y2019	
PRODUCT:	ACS 5-Year Estimates Detailed Tables	
UNIVERSE:	Families	
FTP URL:	None	
API URL:	https://api.census.gov/data/2019/acs/acs5	
USER SELECTIONS		
TOPICS	Income and Poverty	
GEOS	Elkhart County, Indiana; Block Group 5, Census Tract 19.01, Elkhart County, Indiana; Block Group 1, Census Tract 21.02, Elkhart County, Indiana; Block Group 3, Census Tract 21.02, Elkhart County, Indiana	
VINTAGES	2019	
DATASETS	Detailed Tables	
EXCLUDED COLUMNS		
	None	
APPLIED FILTERS		
	None	
APPLIED SORTS		
	None	

Table: ACSDT5Y2019.B17010

WEB ADDRESS	https://data.census.gov/cedsci/table?q=&t=Income%20and%20Poverty&g=0500000US18039_1500000US180390019015,180390021021,180390021023&y=2019&d=ACS%205-Year%20Estimates%20Detailed%20Tables&tid=ACSDT5Y2019.B17010&hidePreview=true
TABLE NOTES	<p>Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.</p>
	<p>Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.</p> <p>Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.</p>
	<p>Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates</p>
	<p>Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see ACS Technical Documentation). The effect of nonsampling error is not represented in these tables.</p>
	<p>The categories for relationship to householder were revised in 2019. For more information see Revisions to the Relationship to Household item.</p>
	<p>The 2015-2019 American Community Survey (ACS) data generally reflect the September 2018 Office of Management and Budget (OMB) delineations of metropolitan and micropolitan statistical areas. In certain instances, the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB delineation lists due to differences in the effective dates of the geographic entities.</p>

Table: ACSDT5Y2019.B17010

	<p>Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.</p>
	<p>Explanation of Symbols: * An "***" entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.</p> <p>* An "-" entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution, or the margin of error associated with a median was larger than the median itself.</p> <p>* An "-" following a median estimate means the median falls in the lowest interval of an open-ended distribution.</p> <p>* An "+" following a median estimate means the median falls in the upper interval of an open-ended distribution.</p> <p>* An "***" entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.</p> <p>* An "*****" entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.</p> <p>* An "N" entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.</p> <p>* An "(X)" means that the estimate is not applicable or not available.</p>
COLUMN NOTES	None

Table: ACSDT5Y2019.B17010

	Elkhart County, Indiana		Block Group 1, Census Tract 21.02, Elkhart County, Indiana	
Label	Estimate	Margin of Error	Estimate	Margin of Error
Total:	50,065	±858	267	±110
Income in the past 12 months below poverty level:	4,432	±541	0	±12
Married-couple family:	1,435	±283	0	±12
With related children of the householder under 18 years:	893	±237	0	±12
Under 5 years only	132	±91	0	±12
Under 5 years and 5 to 17 years	384	±143	0	±12
5 to 17 years only	377	±176	0	±12
No related children of the householder under 18 years	542	±169	0	±12
Other family:	2,997	±465	0	±12
Male householder, no spouse present:	480	±197	0	±12
With related children of the householder under 18 years:	444	±189	0	±12
Under 5 years only	76	±71	0	±12
Under 5 years and 5 to 17 years	129	±116	0	±12
5 to 17 years only	239	±130	0	±12
No related children of the householder under 18 years	36	±49	0	±12
Female householder, no spouse present:	2,517	±406	0	±12
With related children of the householder under 18 years:	2,187	±384	0	±12
Under 5 years only	472	±194	0	±12
Under 5 years and 5 to 17 years	690	±188	0	±12

Table: ACSDT5Y2019.B17010

	Block Group 3, Census Tract 21.02, Elkhart County, Indiana		Block Group 5, Census Tract 19.01, Elkhart County, Indiana	
Label	Estimate	Margin of Error	Estimate	Margin of Error
Total:	730	±153	223	±93
Income in the past 12 months below poverty level:	172	±99	37	±44
Married-couple family:	26	±33	37	±44
With related children of the householder under 18 years:	14	±24	26	±45
Under 5 years only	0	±12	0	±12
Under 5 years and 5 to 17 years	14	±24	26	±45
5 to 17 years only	0	±12	0	±12
No related children of the householder under 18 years	12	±20	11	±21
Other family:	146	±101	0	±12
Male householder, no spouse present:	30	±43	0	±12
With related children of the householder under 18 years:	30	±43	0	±12
Under 5 years only	0	±12	0	±12
Under 5 years and 5 to 17 years	30	±43	0	±12
5 to 17 years only	0	±12	0	±12
No related children of the householder under 18 years	0	±12	0	±12
Female householder, no spouse present:	116	±90	0	±12
With related children of the householder under 18 years:	116	±90	0	±12
Under 5 years only	37	±38	0	±12
Under 5 years and 5 to 17 years	23	±29	0	±12

Table: ACSDT5Y2019.B17010

	Elkhart County, Indiana		Block Group 1, Census Tract 21.02, Elkhart County, Indiana	
Label	Estimate	Margin of Error	Estimate	Margin of Error
5 to 17 years only	1,025	±290	0	±12
No related children of the householder under 18 years	330	±128	0	±12
Income in the past 12 months at or above poverty level:	45,633	±997	267	±110
Married-couple family:	36,194	±973	209	±108
With related children of the householder under 18 years:	15,466	±640	115	±100
Under 5 years only	2,520	±308	0	±12
Under 5 years and 5 to 17 years	3,391	±394	0	±12
5 to 17 years only	9,555	±464	115	±100
No related children of the householder under 18 years	20,728	±709	94	±41
Other family:	9,439	±732	58	±57
Male householder, no spouse present:	3,304	±435	19	±31
With related children of the householder under 18 years:	1,820	±310	0	±12
Under 5 years only	439	±149	0	±12
Under 5 years and 5 to 17 years	268	±126	0	±12
5 to 17 years only	1,113	±258	0	±12
No related children of the householder under 18 years	1,484	±294	19	±31
Female householder, no spouse present:	6,135	±569	39	±49
With related children of the householder under 18 years:	4,035	±502	39	±49
Under 5 years only	674	±238	0	±12

Table: ACSDT5Y2019.B17010

	Block Group 3, Census Tract 21.02, Elkhart County, Indiana		Block Group 5, Census Tract 19.01, Elkhart County, Indiana	
Label	Estimate	Margin of Error	Estimate	Margin of Error
5 to 17 years only	56	±75	0	±12
No related children of the householder under 18 years	0	±12	0	±12
Income in the past 12 months at or above poverty level:	558	±139	186	±81
Married-couple family:	275	±87	164	±82
With related children of the householder under 18 years:	95	±55	0	±12
Under 5 years only	28	±31	0	±12
Under 5 years and 5 to 17 years	49	±53	0	±12
5 to 17 years only	18	±21	0	±12
No related children of the householder under 18 years	180	±73	164	±82
Other family:	283	±109	22	±31
Male householder, no spouse present:	8	±14	0	±12
With related children of the householder under 18 years:	0	±12	0	±12
Under 5 years only	0	±12	0	±12
Under 5 years and 5 to 17 years	0	±12	0	±12
5 to 17 years only	0	±12	0	±12
No related children of the householder under 18 years	8	±14	0	±12
Female householder, no spouse present:	275	±108	22	±31
With related children of the householder under 18 years:	242	±114	22	±31
Under 5 years only	42	±50	0	±12

Table: ACSDT5Y2019.B17010

	Elkhart County, Indiana		Block Group 1, Census Tract 21.02, Elkhart County, Indiana	
Label	Estimate	Margin of Error	Estimate	Margin of Error
Under 5 years and 5 to 17 years	334	±158	31	±47
5 to 17 years only	3,027	±421	8	±13
No related children of the householder under 18 years	2,100	±319	0	±12
Percent below poverty level	8.85%		0.00%	
125% of COC	11.07%			

Table: ACSDT5Y2019.B17010

	Block Group 3, Census Tract 21.02, Elkhart County, Indiana		Block Group 5, Census Tract 19.01, Elkhart County, Indiana	
Label	Estimate	Margin of Error	Estimate	Margin of Error
Under 5 years and 5 to 17 years	0	±12	14	±24
5 to 17 years only	200	±110	8	±17
No related children of the householder under 18 years	33	±31	0	±12
Percent below poverty level	23.56%		16.59%	
125% of COC				

HOUSEHOLD LANGUAGE BY HOUSEHOLD LIMITED ENGLISH SPEAKING STATUS		United States[®] Census Bureau
Note: The table shown may have been modified by user selections. Some information may be missing.		
DATA NOTES		
TABLE ID:	C16002	
SURVEY/PROGRAM:	American Community Survey	
VINTAGE:	2019	
DATASET:	ACSDT5Y2019	
PRODUCT:	ACS 5-Year Estimates Detailed Tables	
UNIVERSE:	Households	
FTP URL:	None	
API URL:	https://api.census.gov/data/2019/acs/acs5	
USER SELECTIONS		
TOPICS	Language Spoken at Home	
GEOS	Elkhart County, Indiana; Block Group 5, Census Tract 19.01, Elkhart County, Indiana; Block Group 1, Census Tract 21.02, Elkhart County, Indiana; Block Group 3, Census Tract 21.02, Elkhart County, Indiana	
VINTAGES	2019	
DATASETS	ACS 5-Year Estimates Detailed Tables	
EXCLUDED COLUMNS		
	None	
APPLIED FILTERS		
	None	
APPLIED SORTS		
	None	

Table: ACSDT5Y2019.C16002

WEB ADDRESS	https://data.census.gov/cedsci/table?q=&t=Language%20Spoken%20at%20Home&g=0500000US18039_1500000US18039019015,180390021021,180390021023&y=2019&d=ACS%205-Year%20Estimates%20Detailed%20Tables&tid=ACSDT5Y2019.C16002&hidePreview=true
TABLE NOTES	<p>Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.</p>
	<p>Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.</p> <p>Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.</p>
	<p>Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates</p>
	<p>Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see ACS Technical Documentation). The effect of nonsampling error is not represented in these tables.</p>
	<p>A "limited English speaking household" is one in which no member 14 years old and over (1) speaks only English or (2) speaks a non-English language and speaks English "very well." In other words, all members 14 years old and over have at least some difficulty with English. By definition, English-only households cannot belong to this group. Previous Census Bureau data products have referred to these households as "linguistically isolated" and "Households in which no one 14 and over speaks English only or speaks a language other than English at home and speaks English 'very well'." This table is directly comparable to tables from earlier years that used these labels.</p>

Table: ACSDT5Y2019.C16002

	<p>The household language assigned to the housing unit is the non-English language spoken by the first person with a non-English language in the following order: reference person, spouse, parent, sibling, child, grandchild, in-law, other relative, unmarried partner, housemate/roommate, roomer/boarder, foster child, or other nonrelative. If no member of the household age 5 and over speaks a language other than English at home then the household language is English only.</p>
	<p>The 2015-2019 American Community Survey (ACS) data generally reflect the September 2018 Office of Management and Budget (OMB) delineations of metropolitan and micropolitan statistical areas. In certain instances, the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB delineation lists due to differences in the effective dates of the geographic entities.</p>
	<p>Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.</p>

Table: ACSDT5Y2019.C16002

	<p>Explanation of Symbols: * An "***" entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.</p> <p>* An "-" entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution, or the margin of error associated with a median was larger than the median itself.</p> <p>* An "-" following a median estimate means the median falls in the lowest interval of an open-ended distribution.</p> <p>* An "+" following a median estimate means the median falls in the upper interval of an open-ended distribution.</p> <p>* An "****" entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.</p> <p>* An "*****" entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.</p> <p>* An "N" entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.</p> <p>* An "(X)" means that the estimate is not applicable or not available.</p>
COLUMN NOTES	None

Table: ACSDT5Y2019.C16002

	Elkhart County, Indiana		Block Group 1, Census Tract 21.02, Elkhart County, Indiana	
Label	Estimate	Margin of Error	Estimate	Margin of Error
Total:	71,718	±705	396	±124
English only	58,911	±770	120	±49
Spanish:	8,086	±377	256	±130
Limited English speaking household	1,907	±335	56	±61
Not a limited English speaking household	6,179	±455	200	±123
Other Indo-European languages:	3,954	±376	20	±22
Limited English speaking household	382	±117	0	±12
Not a limited English speaking household	3,572	±372	20	±22
Asian and Pacific Island languages:	552	±111	0	±12
Limited English speaking household	89	±56	0	±12
Not a limited English speaking household	463	±116	0	±12
Other languages:	215	±116	0	±12
Limited English speaking household	12	±19	0	±12
Not a limited English speaking household	203	±115	0	±12
Limited English Speaking Household	2390		56	
Percent Limited English Speaking	3.33%		14.14%	
125% of COC	4.17%			

Table: ACSDT5Y2019.C16002

	Block Group 3, Census Tract 21.02, Elkhart County, Indiana		Block Group 5, Census Tract 19.01, Elkhart County, Indiana	
Label	Estimate	Margin of Error	Estimate	Margin of Error
Total:	1,150	±198	351	±94
English only	1,032	±184	340	±96
Spanish:	96	±60	11	±21
Limited English speaking household	0	±12	0	±12
Not a limited English speaking household	96	±60	11	±21
Other Indo-European languages:	0	±12	0	±12
Limited English speaking household	0	±12	0	±12
Not a limited English speaking household	0	±12	0	±12
Asian and Pacific Island languages:	17	±27	0	±12
Limited English speaking household	17	±27	0	±12
Not a limited English speaking household	0	±12	0	±12
Other languages:	5	±9	0	±12
Limited English speaking household	0	±12	0	±12
Not a limited English speaking household	5	±9	0	±12
Limited English Speaking Household	17		0	
Percent Limited English Speaking	1.48%		0.00%	
125% of COC				

Table: ACSDT5Y2019.C16002

	Elkhart County, Indiana		Block Group 1, Census Tract 21.02, Elkhart County, Indiana	
Label	Estimate	Margin of Error	Estimate	Margin of Error
Percent Speaking Spanish	11.27%		64.65%	

Table: ACSDT5Y2019.C16002

	Block Group 3, Census Tract 21.02, Elkhart County, Indiana		Block Group 5, Census Tract 19.01, Elkhart County, Indiana	
Label	Estimate	Margin of Error	Estimate	Margin of Error
Percent Speaking Spanish	8.35%		3.13%	



Hively Avenue Overpass Project Environmental Justice Burdens & Benefits Analysis

Updated June 6, 2022

Prepared for:
City of Elkhart
&
Indiana Department of Transportation

Table of Contents

Acronyms and Abbreviations	4
Purpose of Environmental Justice Burdens & Benefits Analysis	5
Definition and Guiding Principles of Burdens and Benefits Analysis	5
EJ Definitions	5
Minority	6
Low Income	6
Populations	6
Adverse Effects	6
Disproportionately High and Adverse Effect	7
Project Introduction	7
Background	7
Network Area Context	10
Regional and Local Planning Context	11
MPO	11
Elkhart County	15
City of Elkhart	15
Regional Public Transit and Trail Resources	18
Project Purpose and Need	20
Community Context and Resources within Network Area	20
Project Study Area Context	22
Community Resources within Study Area	23
EJ Populations within Study Area	24
EJ Considerations for Public Outreach	28
Existing Conditions within Study Area	29
Roadways/RR Crossing	29
Pedestrian, Bicycle, and Transit Resources	30
Sidewalks & Crosswalks	30
Trail	31
Red Line Bus Flag Stops	32
Cultural Resources	33
Hazardous Materials	33
Existing Conditions Summary	34
Alternatives Analysis	34
Existing Deficiencies	34

No Build	34
Build	34
Alternative Analysis Summary	35
Community Engagement	37
Preferred Alternative	38
Project Description	38
Preferred Alternative Impacts	41
Right of Way/Property Impacts	41
Environmental Justice	42
Cultural Resources	43
Hazardous Materials	44
Noise	44
Tax Base/Property Values	44
Consistency with Regional and Local Planning	45
STIP	45
MPO TIP	45
MPO LRTP	45
City of Elkhart	45
Additional Public Outreach	45
Burdens & Benefits Summary	47
Burdens Summary	46
Benefits Summary	49
Identify and Address Disproportionately High and Adverse Impacts	50
Mitigation Measures	52
Off-set Benefits	52
Fair Participation	52
Conclusion	54

Acronyms and Abbreviations

AC	- Affected Community
ADA	- Americans with Disabilities Act
ADT	- Average Daily Traffic
COC	- Community of Comparison
CR	- County Road
CSRS	- Conceptual Site Relocation Study
Des.	- Designation
DVRPC	- Delaware Valley Regional Planning Commission
HUD	- U.S. Department of Housing and Urban Development
IPD	- Indicators of Potential Disadvantage
EJ	- Environmental Justice
EO	- Executive Order
EPA	- EPA
FAST	- Fixing America's Surface Transportation Act
FHWA	- Federal Highway Administration
FY	- Fiscal Year
INDOT	- Indiana Department of Transportation
LEP	- Limited English Proficiency
LPA	- Local Public Agency
L RTP	- Long Range Transportation Plan
MACOG	- Michiana Area Council of Government
MPO	- Metropolitan Planning Organization
NEPA	- National Environmental Policy Act
No.	- Number
PIP	- Public Information Plan
ROW	- Right of Way
RR	- Railroad
SFY	- State Fiscal Year
STIP	- State Transportation Improvement Program
TIP	- Transportation Improvement Program
USDOT	- U.S. Department of Transportation

Purpose of Environmental Justice Burdens & Benefits Analysis

Executive Order (EO) 12898: Federal Actions to Address Environmental Justice (EJ) in Minority Populations and Low-Income Populations (59 FR 7629; 1994) directs each Federal agency to develop a strategy for identifying and addressing disproportionately high and adverse human health or environmental effects on low-income populations and minority populations. The guidance advises the Federal Highway Administration (FHWA) to address EJ during the National Environmental Policy Act (NEPA) review, including documentation requirements. It supplements the FHWA Technical Advisory 6640.8A, which provides guidance for documenting the potential social, economic, and environmental impacts considered in the selection and implementation of highway projects.

As part of the NEPA review of the Project, a review of Environmental Justice (EJ) populations of minority and low-income was conducted within the Study Area. EJ populations were identified within the Study Area, therefore requiring EJ analysis to be conducted.

FHWA advances Environmental Justice (EJ) through its numerous policies, programs, and activities. It is FHWA's policy to identify and prevent discriminatory effects by actively administering its programs, policies, and activities to ensure that social impacts to communities and people are recognized early and continually throughout the transportation decision-making process from early planning through implementation and operations.

The purpose of this analysis is to determine if EJ populations will receive an equitable distribution of benefits and burdens associated with the Hively Avenue Overpass Project. Should this not be the case, the Study Team will investigate options to mitigate disproportionately high and adverse effects borne by EJ populations.

(https://www.environment.fhwa.dot.gov/env_topics/ej/guidance_ejustice-nepa.aspx).

Definition and Guiding Principles of Burdens and Benefits Analysis

EJ Definitions

The U.S. Environmental Protection Agency (EPA) Office of EJ defines EJ as "The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies." "Fair treatment" means that "No group of people, including racial, ethnic, or socio-economic groups should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local and tribal programs and policies."

FHWA carries out its EJ responsibilities through the U.S. Department of Transportation (USDOT) EJ Order 5610.2(a) and the FHWA EJ Order 6640.23A. These orders define EJ populations and the measures of effect to these populations in the text that follows.¹

¹ USDOT Federal Highway Administration. *Federal Highway Administration: Environmental Justice Reference Guide*. April 1, 2015. Pages 10-11.

Minority

A “minority” individual is a person who identifies with one or more of the following categories:

- (1) Black: a person having origins in any of the black racial groups of Africa;
- (2) Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race;
- (3) Asian American: a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent;
- (4) American Indian and Alaskan Native: a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through tribal affiliation or community recognition; or
- (5) Native Hawaiian and Other Pacific Islander: a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

Low Income

The FHWA and USDOT EJ Orders define a “low-income” individual as a person whose median household income is at or below the Department of Health and Human Services (HHS) poverty guidelines.²

Populations

For the terms “minority” and “low-income,” the FHWA and USDOT EJ Orders define a “population” as any readily identifiable group of minority and/or low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons of those groups (such as migrant workers, homeless persons, or Native Americans) who will be similarly affected by a proposed FHWA/DOT program, policy, or activity.

Adverse Effects

The FHWA and USDOT EJ Orders state that “adverse effects” means the totality of significant individual or cumulative human health or environmental effects, including interrelated social and economic effects, which may include, but are not limited to: bodily impairment, infirmity, illness, or death; air, noise, and water pollution and soil contamination; destruction or disruption of human-made or natural resources; destruction or diminution of aesthetic values; destruction or disruption of community cohesion or a community’s economic vitality; destruction or disruption of the availability of public and private facilities and services; vibration; adverse employment effects; displacement of persons, businesses, farms, or nonprofit organizations; increased traffic congestion, isolation, exclusion, or separation of minority or low-income individuals within a given community or from the broader community; and, the denial of, reduction in, or significant delay in the receipt of benefits of FHWA/DOT programs, policies, or activities.

² The USDOT’s use of HHS’s “poverty guidelines” differs from the Council on Environmental Quality (CEQ) guidance on EJ, which suggests the use of U.S. Census Bureau “poverty thresholds” when determining the presence of low income populations. Poverty *thresholds* are calculated each year by the Census Bureau and serve as the federal government’s official statistics on the number of people in poverty. Poverty *guidelines* are a simplified version of the federal poverty thresholds and are used for administrative purposes, such as determining financial eligibility for certain federal programs. HHS issues poverty guidelines for the year based, in part, on the Census Bureau’s poverty threshold statistics.

Disproportionately High and Adverse Effect

The FHWA and USDOT EJ Orders state that “disproportionately high and adverse” refers to a adverse effect that

- (1) is predominately borne by a minority population and/or a low-income population; or
- (2) will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the nonminority population and/or non-low-income population.

Project Introduction

Background

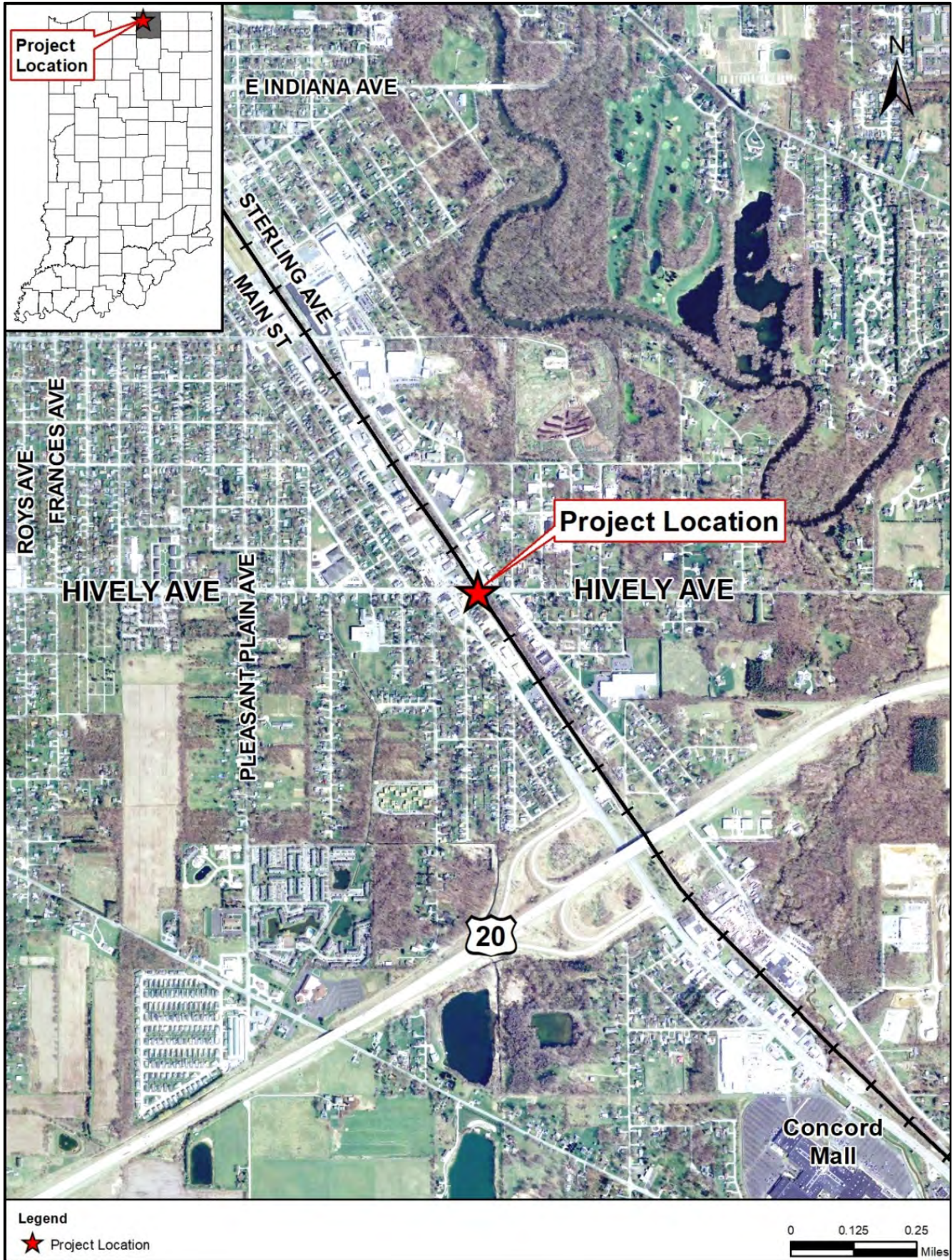
The Hively Avenue Overpass Project (the Project) is part of the Indiana Department of Transportation (INDOT) Local TRAX rail overpass program. The Local TRAX program is a partnership with INDOT, local communities, businesses, industry and railroads to improve the quality of life for residents through large scale rail related transportation projects. Through the Local TRAX program, INDOT provides grants to cities, towns, and counties for grade separation, crossing closure, and other safety enhancement projects at highway-rail intersections. INDOT will fund 100% of project design fees and 80% of total project construction and right-of-way costs. However, grant recipients are required to provide a local match of 20%; made possible through a variety of local partnerships, including funding from the host railroad.

The City of Elkhart funded a Preliminary Grade Separation Feasibility Study in 2017. The purpose of the report was to document the feasibility study phase of a grade separation of Hively Avenue at the Norfolk Southern Railroad (RR) crossing. INDOT awarded the City of Elkhart a grant through the Local TRAX program for grade separating East (E) Hively Avenue, also referred to as Hively Avenue, and the Norfolk Southern RR crossing in Elkhart, Elkhart County, Indiana.

The Local TRAX grant was awarded in 2018. As part of the grant award, INDOT funds and manages the project development process in cooperation with the City of Elkhart. The project study team (lead by Michael Baker International) is performing preliminary engineering, environmental analysis and documentation, public outreach and engagement, final design, and right-of-way services. A Public Hearing is anticipated in early 2022 with an approved environmental document to follow shortly thereafter.

The Project Location map is shown in Figure 1.

Figure 1. Project Location Map



Network Area Context

Hively Avenue is a major east-west corridor connecting the west side of Elkhart to the east side of Elkhart. This roadway currently has an average daily traffic (ADT) of approximately 6,000 vehicles per day at the railroad crossing and with a 20-year horizon forecast of 10,000 at the crossing. Hively Avenue has an ADT of 9,000 vehicles per day west of the crossing, with a 20-year horizon forecast of 12,000 vehicles per day as shown in Table 1. Hively Avenue also intersects with South (S) Main Street approximately 274 feet west of the RR crossing. S Main Street runs parallel to the RR and traffic travels north into downtown Elkhart and south turning into State Route (SR) 33, south of SR 20, and connects Elkhart to Goshen. A previous City of Elkhart project located at E Indiana Avenue created an underpass at the crossing with Norfolk Southern RR, located approximately 1.2 miles northwest of the Hively Avenue crossing. The other at-grade crossings within the network include E. Lusher Avenue, Sunnyside Avenue, and County Road (CR) 13. Both Lusher Ave and CR 13 serve only local traffic.

The Norfolk Southern RR runs north and south. The Norfolk Southern rail yard is located approximately 3.8 miles northwest of Hively Avenue and Norfolk Southern RR crossing. Approximately 70-100 trains pass through the Hively Avenue crossing per day. This can cause a delay of up to 5 minutes, sometimes several time a day, when stopping for a train at the existing at-grade railroad crossing. Generally, freight movements are expected to increase, and trains continue to become longer, putting additional strain on existing transportation systems.

As a condition of the Local TRAX Program Grant Agreement, the City of Elkhart and Norfolk Southern will negotiate a crossing closure. As proposed, this closure will occur at E. Lusher Avenue, however, another location could be agreed upon. Any subsequent local road (railroad crossing location on the local network) closure will be executed as a separate project with local funding per the City of Elkhart's Board of Works sometime in the future. The timing of these activities is undefined at this time. The broader area network is shown in Figure 2.

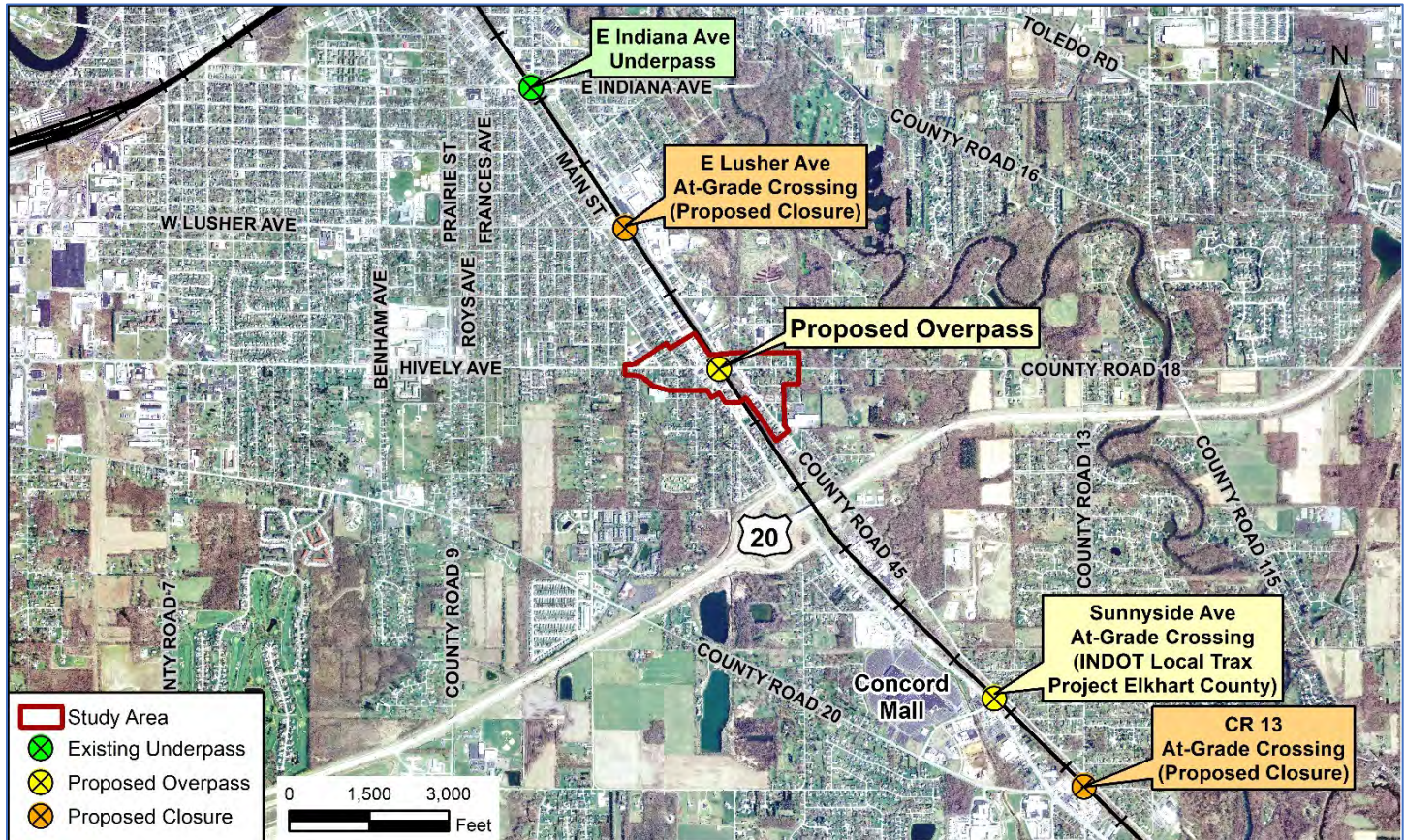
Table 1. ADT for Roadways within Study Area and associated Roadways within Network Area

Location	Current ADT (based on 2019)	Future ADT 2044 No Build	Future ADT 2044 Build
Hively Ave RR Xing	6,000	8,200	9,900 (Grade-separated)
Lusher Ave RR Xing (Network Area)	2,800	3,400	Closed*
CR 13 RR Xing (Network Area)	4,200	5,000	Closed*
Hively Ave west of Monger Ave	8,600	10,000	11,900
Main St south of Hively	14,600	16,000	17,600
Sterling Ave north of Hively	3,600	5,700	4,400
Hammond Ave south of Hively	3,600	4,300	4,300
Morton Ave north of Hively	600	600	600
Monger Ave north of Hively	300	300	900
Bismark Ave east of Main	200	200	200
Burr Oak Ave south of Hively	300	300	300
Roosevelt Ave south of Hively	300	300	1,200
Homer Ave south of Hively	800	800	---
Garden Blvd south of Main	200	200	200
Eddy St north of Hively	300	300	300

Location	Current ADT (based on 2019)	Future ADT 2044 No Build	Future ADT 2044 Build
Lowell Ave north of Hively	100	100	100
Warren St south of Hively	100	100	2,000
Dover St between Hammond and Warren	70	70	2,000
Hively Ave Connector between Hively and Main	---	---	8,500

*proposed closures as part of separate projects

Figure 2. Network Area Map



Regional and Local Planning Context

MPO

The Project is located in the City of Elkhart, Elkhart County which is part of the Michiana Area Council of Governments (MACOG) that serves as the Metropolitan Planning Organization (MPO). MACOG is responsible for producing a 20 year long-range transportation plan (LRTP) which is updated every four years. The plan, *Michiana on the Move: Transportation Plan 2045*, was adopted on October 2019. Michiana on the Move is a roadmap for implementing multimodal transportation improvements in the Michiana region through the year 2045. The regional transportation system is evaluated in order to identify and formulate the best solutions to

topic areas such as safety, congestion, highway, public transit, bike and pedestrian and multi-modal systems for the local communities.³

In 2015, the Fixing America's Surface Transportation Act (FAST Act) was signed into law by President Obama that built upon much of the former Act's (Moving Ahead for Progress in the 21st Century MAP-21) directive to address transportation infrastructure issues through performance-based planning frameworks. The FAST Act lists ten (10) Planning Factors, which MACOG took into consideration during the planning and development of the 2045 Transportation Plan. Planning factors relevant to the Project include:

- Support the economic vitality of the metropolitan area.
- Increase the safety of the transportation system for motorized and non-motorized users.
- Increase accessibility and mobility of people and freight.
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
- Enhance travel and tourism.

The current transportation legislation outlines seven (7) national goals for which state DOTs and transit agencies, in cooperation with MPO's should establish targets for performance measures. National goals relevant to the Project include:

- Safety - to achieve a significant reduction in traffic fatalities and serious injuries on all public roads
- Congestion Reduction - to achieve a significant reduction in congestion on the National Highway System
- System Reliability - to improve the efficiency of the surface transportation system
- Freight Movement and Economic Vitality - to improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
- Reduced Project Delivery Delays - to reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices⁴

Pedestrian Transportation

MACOG conducted a How We Grow survey and nearly half of people who participated identified the ability to walk, bike or take public transit to daily activities as a top reason for choosing to live in a community. Over 90%

³ Michiana Area Council of Governments (MACOG). *Michiana on the Move: Transportation Plan 2045*. Adopted on October 9, 2019, as confirmed in MACOG Resolution 48-19. Chapter 1, Page 2.

⁴ Michiana Area Council of Governments (MACOG). *Michiana on the Move: Transportation Plan 2045*. Adopted on October 9, 2019, as confirmed in MACOG Resolution 48-19. Chapter 5, Page 54.

of people supported transportation investments that make streets complete and functional for all modes of transportation.⁵

Sidewalks and accessibility sidewalks are an important component of the transportation network because no matter the destination, every trip starts and ends with pedestrian travel. Sidewalks should be connected and accessible. MACOG has worked with many Local Public Agencies (LPAs) in the region to adopt Americans with Disabilities Act (ADA) Transition Plans for the public right-of-way, which addresses sidewalk accessibility. The purpose of these plans is to ensure communities are creating reasonable, accessible paths of travel in the public right-of-way for everyone, including people with disabilities. These plans provide a schedule for communities on how they should address and improve sidewalk accessibility. As part of the plan, communities have adopted Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way. These guidelines suggest that whenever there is an intersection improvement project or new construction project, any affected curb ramps, sidewalks, and crosswalks will be rebuilt to these ADA design guidelines, where feasible and reasonable. MACOG has created an ADA inventory database that can be used as a guide for sidewalk improvements and a resource for creating a better pedestrian network.

Environmental Justice

MACOG supports and models their EJ process based upon guidelines from the Delaware Valley Regional Planning Commission (DVRPC) in Pennsylvania. DVRPC developed the **Indicators of Potential Disadvantage (IPD) method**, which locates selected population groups in the region to better inform how the regional transportation system and MPO programs, policies, and investments might impact these groups. These population groups include minorities, low-income, carless households, persons with physical disabilities, elderly over age 65, Hispanic, and Limited English Proficiency (LEP).⁶

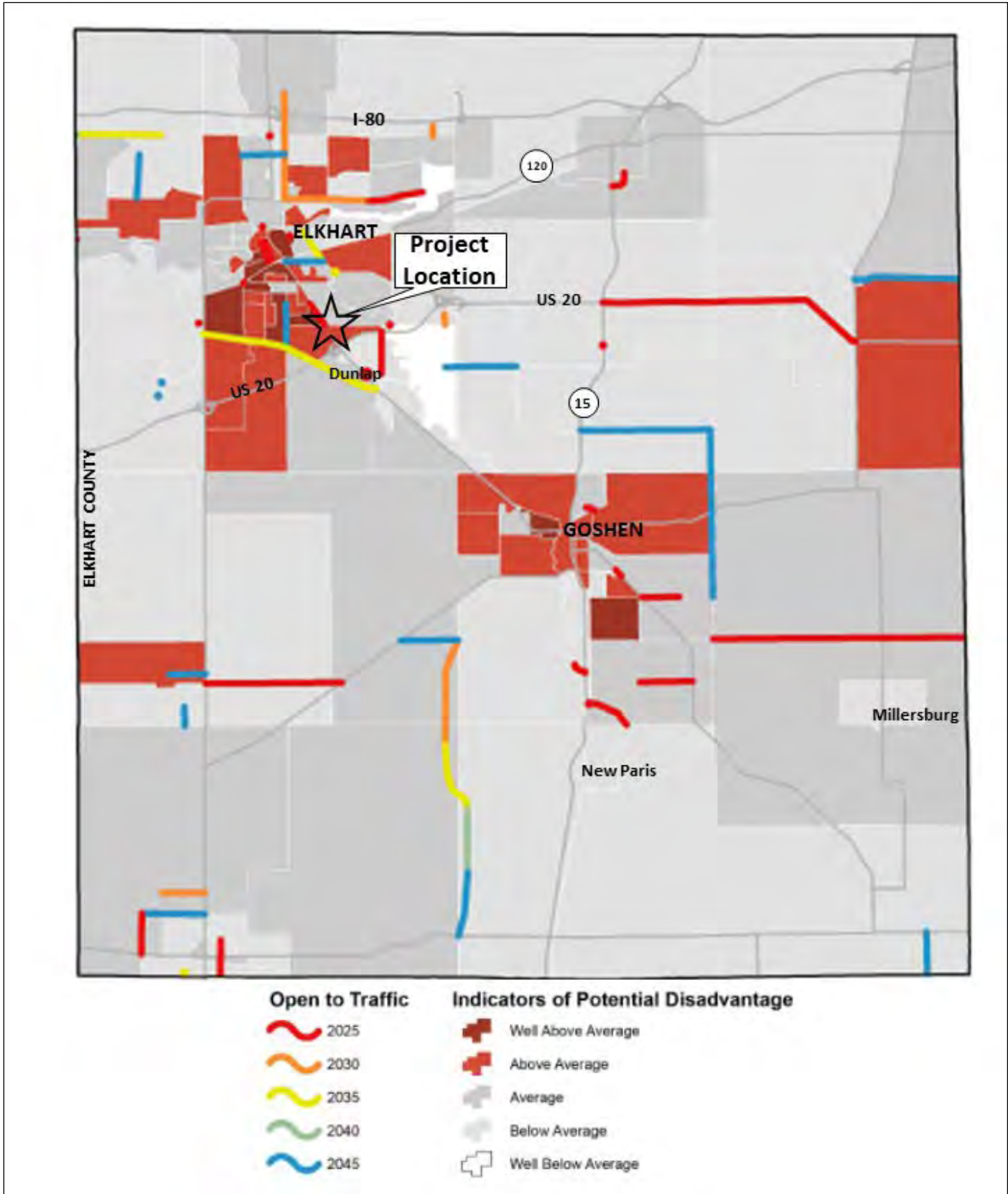
Neither Title VI, the Civil Rights Act, nor Executive Order #12898 provides specific guidance to evaluate EJ within a region's transportation planning process. Therefore, MPOs must devise their own methods for ensuring that EJ population groups and issues are represented in transportation decision-making. This is a challenging assignment, and serious consideration must be given to the available types of quantifiable data, as well as how the data is to be used and interpreted. It should be noted that while the IPD method helps ascertain population data, it is only one tool in a larger strategy involving public participation, stakeholder outreach, data sources, and other research.

The MACOG identified EJ populations within Elkhart County are shown in Figure 3.

⁵ Michiana Area Council of Governments (MACOG). *Michiana on the Move: Transportation Plan 2045*. Adopted on October 9, 2019, as confirmed in MACOG Resolution 48-19. Chapter 6, Page 60.

⁶ Michiana Area Council of Governments (MACOG). *Michiana on the Move: Transportation Plan 2045*. Adopted on October 9, 2019, as confirmed in MACOG Resolution 48-19. Appendix F, Page 170.

Figure 3. MACOG 2045 Transportation Plan Elkhart County Environmental Justice Map



The Michiana on the Move can be found here:

http://www.macog.com/docs/transportation/tp/2045_TransportationPlan.pdf

Additional information about MACOG Michiana Area Equity Analysis can be found here:

[Michiana Area Equity Analysis \(arcgis.com\)](http://arcgis.com)

Elkhart County

The *Elkhart County Comprehensive Plan was developed and adopted in 2006* by the Elkhart County Advisory Plan Commission and the Elkhart County Board of Commissioners. The plan outlines the objectives and policies for future development of Elkhart County including Goal 5, the commitment to the development of an efficient transportation network. This goal includes ensuring communities continue to achieve economic vitality, efficient movement of people and resources should be maintained. Street standards should be followed in all development to protect right of way and provide safe access to property. Road projects throughout the county should be coordinated systematically. County Highway road construction and maintenance plans should be coordinated with those of cities and towns to build a better commuting network, maintain consistency, and add to quality of life. Alternative transportation should be encouraged and supported where safe passage can be maintained. Pedestrian and bike traffic on designated trails and sidewalks, as well as interchanges needed by horses and buggies, should be safely accommodated in transportation planning and projects.

The Elkhart County Comprehensive Plan is located here:

http://www.elkhartcountyplanninganddevelopment.com/doc/Planning_Webpage_files/Elkhart%20County%20Land%20Use%20Plan.pdf.

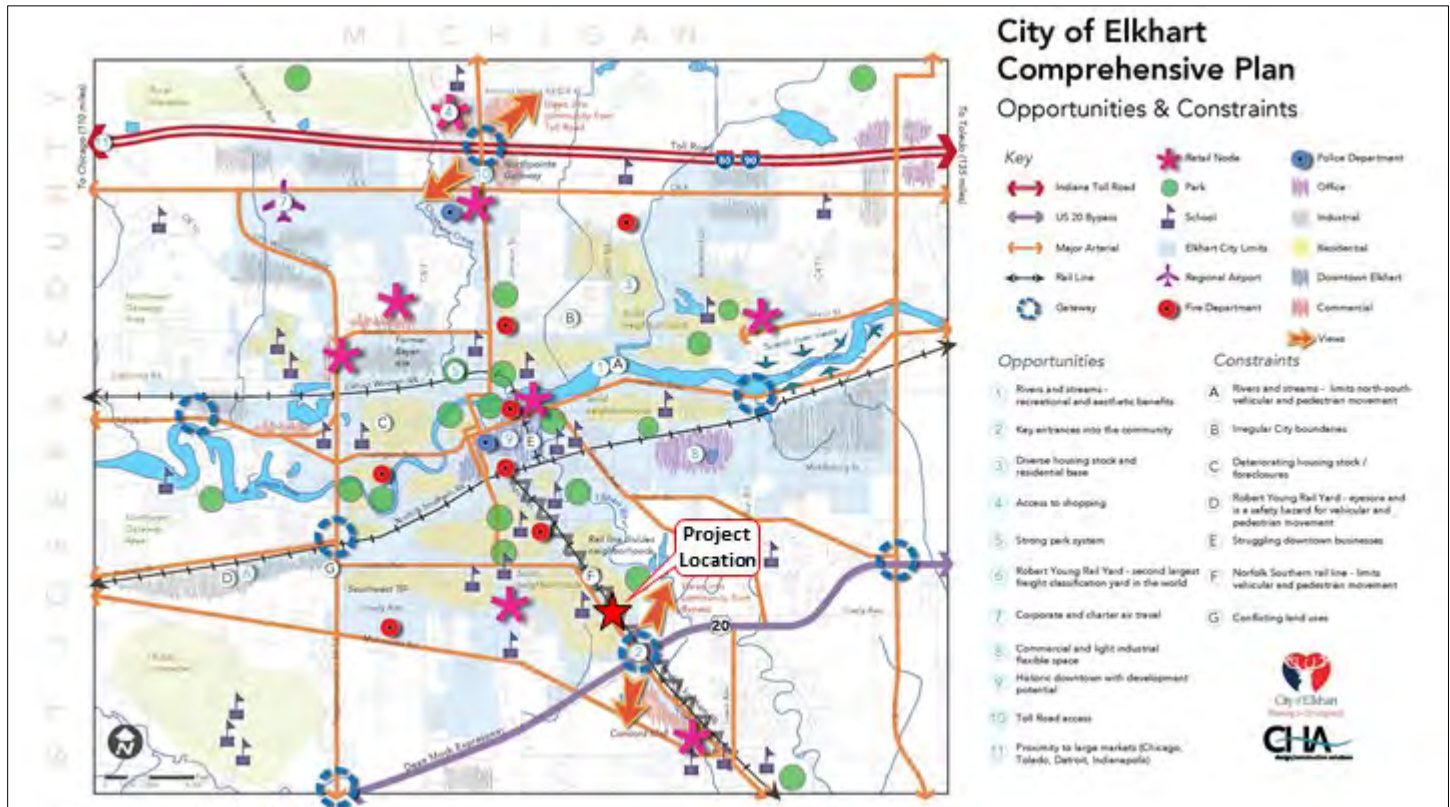
Additional information can be located at <https://elkhartcounty.com/en/> and

<http://elkhartcountyplanninganddevelopment.com/>.

City of Elkhart

The *City of Elkhart Comprehensive Plan was adopted in 2015* by the City of Elkhart Plan Commission and City Council as required under Indiana Law. The plan serves as the basis for development and infrastructure policy related to development, redevelopment, and management of land uses. The plan identifies opportunities and constraints as shown in Figure 4.

Figure 4. City of Elkhart Comprehensive Plan Opportunities and Constraints Map



The plan also lists six goals that the City has identified to frame recommendations for their 20-year vision including a commitment to mobility and health and safety. The two goals directly relevant to the Project include mobility and health and safety.

The Mobility Goal is to establish and maintain a balanced and connected system for all modes of transportation within the City and to regional networks. Mobility reinforces the importance of a transportation system that balances the needs of all potential users and the influence of transportation facilities on adjacent land uses. The recommendations to meet this goal include:

- Incorporate facilities for all modes of transportation into road resurfacing and reconstruction projects.
- Install sidewalks within all residential neighborhoods.
- Install internal sidewalk network in all new commercial, industrial, and institutional developments.
- Install multi-purpose paths along all major and minor arterials.
- Install bicycle lanes along the routes recommended by the Pedal Panel.
- Link all internal pedestrian systems (i.e. sidewalks) with the larger, citywide pedestrian/bicycle transportation network.
- Provide for seamless connections among transportation modes including bus, pedestrian facilities, and bicycle facilities.
- Create sustainable funding source for facility construction and maintenance.⁷

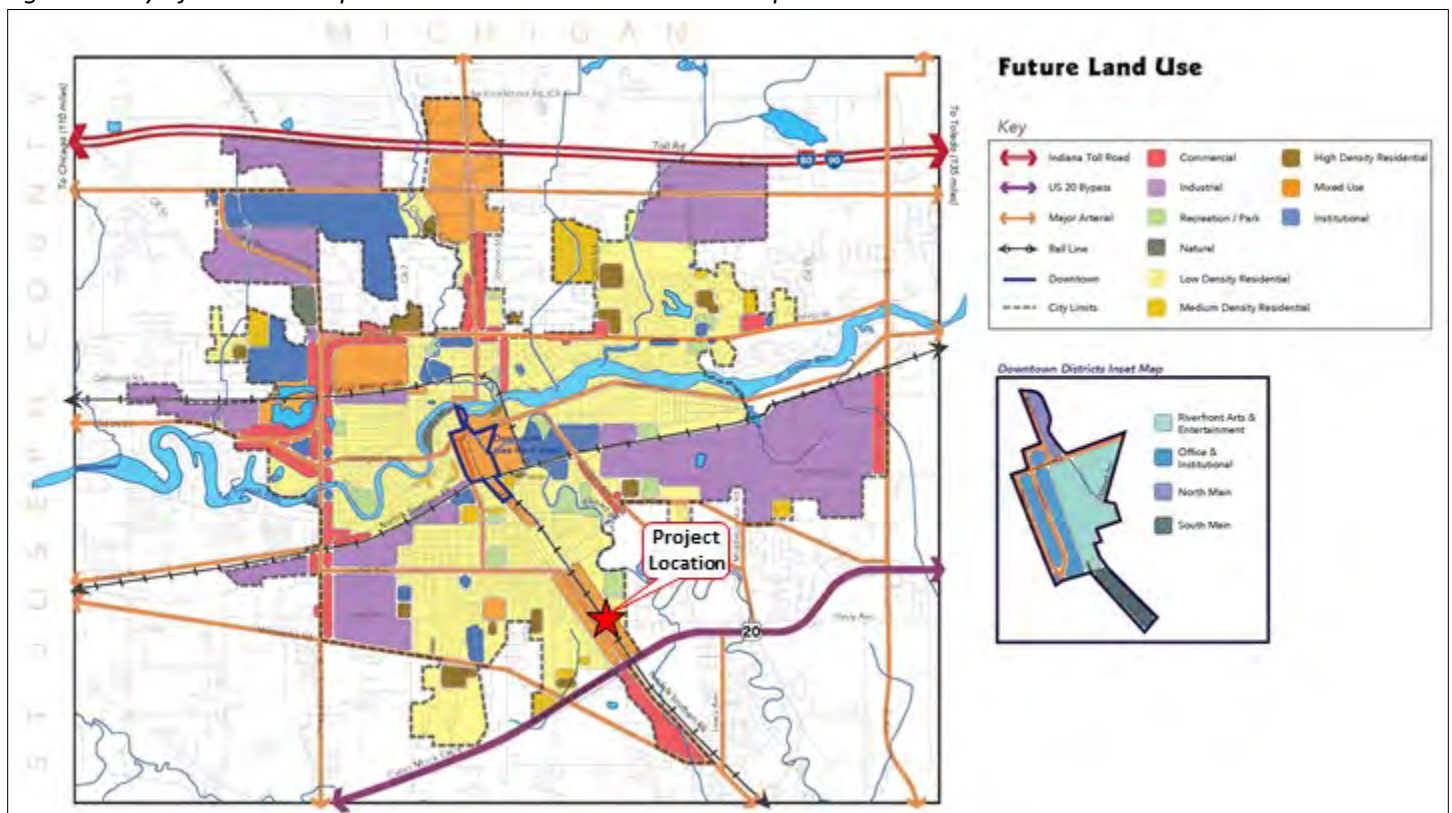
⁷ City of Elkhart. *City of Elkhart Comprehensive Plan Update*. Adopted on February 2, 2015. Chapter 3, Page 81.

The Health and Safety Goal is to coordinate public services and amenities with land use decisions to protect the well-being and quality of life of Elkhart’s citizens and its environment. The recommendations to meet this goal that are germane to the transportation network include:

- Coordinate decision-making and approval processes among City departments.
- Coordinate transportation and land use planning.
- Coordinate installation of pedestrian/bicycle facilities with programs associated with public health and community wellness.⁸

An important consideration in land use and transportation planning is the reciprocal relationship between these two functions. Transportation systems and their adjacent land uses shape the character of an area, or community, and have a direct effect on its perceived quality of life.

Figure 5. City of Elkhart Comprehensive Plan Future Land Use Map



Also of note, the Elkhart Community Schools recently increased its student walk zones to reduce busing and school district transportation costs. The walk zone for elementary and middle school students is a one-mile radius of the school. The high school walk zone is a two-mile radius of the school. There are some exceptions to these zones, especially in the less developed areas of the City. Facilities, such as sidewalks, marked crossings, and buffering from moving vehicles are fundamental components of a safe pedestrian route to school. This leads to a conclusion that pedestrian facility installation should be a priority in all designated school walk zones.

⁸ City of Elkhart. *City of Elkhart Comprehensive Plan Update*. Adopted on February 2, 2015. Chapter 3, Page 86.

The City of Elkhart Comprehensive Plan is located here: <https://elkhartindiana.org/wp-content/uploads/Updated-Comprehensive-Plan-Adopted-February-02-2015-full-document.pdf>

Regional Public Transit and Trail Resources

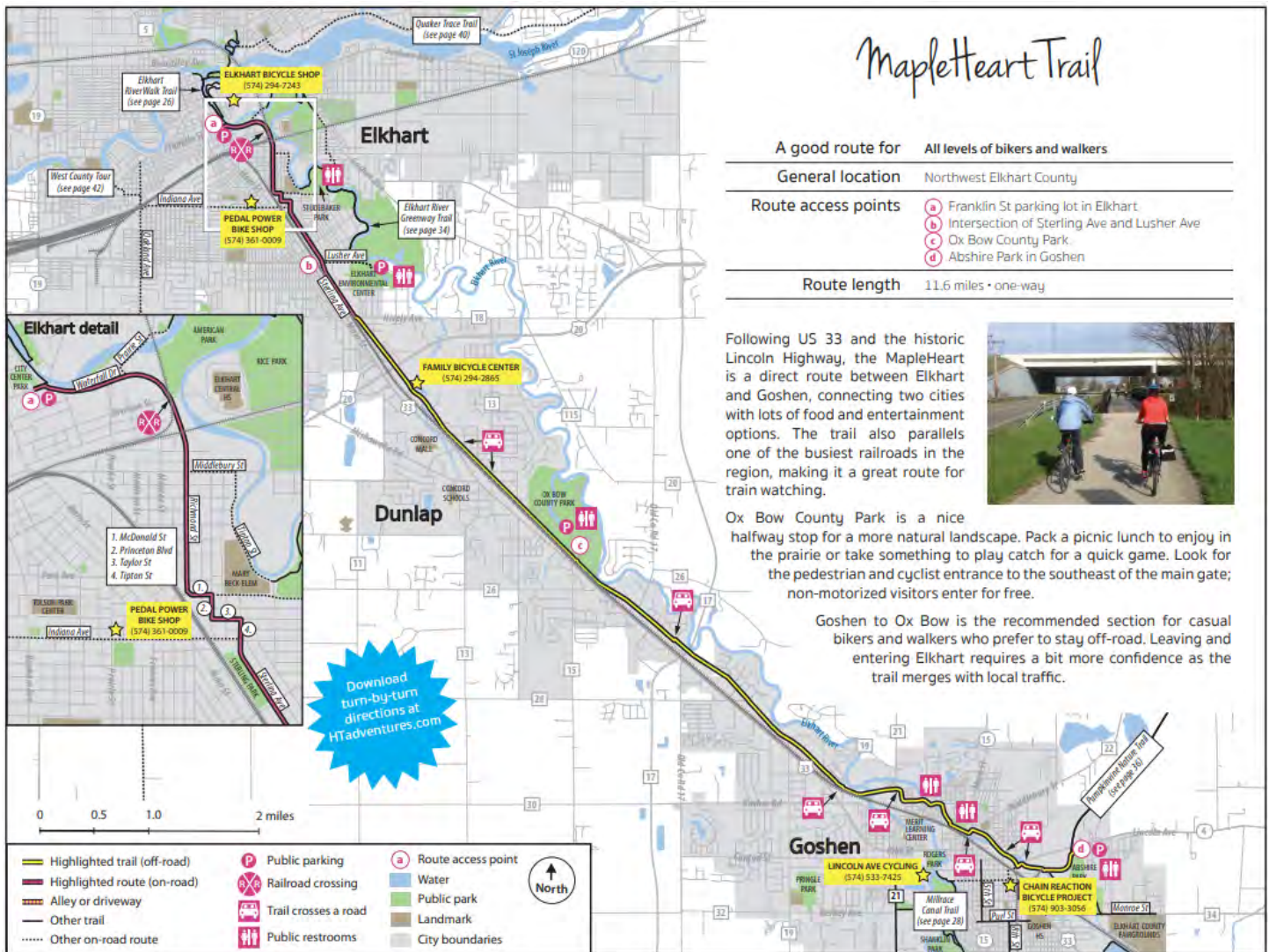
There are existing public transit services within the Network Area. The Interurban Trolley provides public transit services in Elkhart and Goshen, Indiana. It is currently a five-route system plus a complementary paratransit service called Interurban Trolley Access. The Trolley runs weekdays and on Saturdays. The Red Line map is shown in Figure 6.

Figure 6. The Interurban Trolley Elkhart/Goshen Red Line Map



MapleHeart Trail is a 11.6 mile path that connects Elkhart and Goshen as shown in Figure 7. The MapleHeart Trail runs along CR 45 from Hively Avenue in Elkhart to the Goshen City Limits. Both ends of the trail tie into local trail systems. MACOG has identified the Maple Heart Trail as a regionally significant bikeway trail.⁹

Figure 7. Elkhart County MapleHeart Trail Map



The MapleHeart Trail is an off-road trail from Hively Avenue south to Goshen. It turns into an on-road trail north of Hively Avenue along Sterling Avenue. There are currently plans to extend the trail and make the on-road portion into an off-road portion along Sterling Avenue heading north.

⁹ Michiana Area Council of Governments (MACOG). *Michiana on the Move: Transportation Plan 2045*. Adopted on October 9, 2019, as confirmed in MACOG Resolution 48-19. Chapter 3, Page 34.

Project Purpose and Need

The Project is needed to address the existing traffic congestion caused by approximately 70-100 trains that utilize the railroad tracks at Hively Avenue per day. These trains inhibit mobility for the approximate 6,000 vehicles a day that use the Hively Avenue crossing as identified in the 2019 Engineer’s Report. This causes motorist backups on Hively Avenue and adjacent local streets, along with prohibiting pedestrian and bicyclist movements.

FHWA has published guidelines to determine when converting an at-grade railroad crossing into a grade separated crossing is justified. The guidelines are published in the following document “Guidance on Traffic Control Devices at Highway-Rail Grade Crossings (FHWA, November 2002). The guidelines list several criteria that can be used to warrant a railroad grade separated crossing. Meeting just one (1) of those criteria is enough to justify grade-separation. The Hively Avenue railroad crossing meets three (3) of those criteria. Table 2 summarizes these criteria and how the Hively Avenue and Norfolk Southern Railroad crossing exceeds the criteria.

Table 2. FHWA Warrants for Grade Separation

Category	Criteria	Hively Avenue Crossing
Number of trains	An average of 75 or more trains per day	This location has an estimated 70-100 trains, with an average of 88 trains per day, at a maximum allowable train speed of 79 mph
Expected crash frequency	The expected crash frequency exceeds 2% per year	This location has an expected crash frequency of 5.22% per year
Vehicle delay	Vehicle delay exceeds 30 vehicle-hours per day	This location has an estimated 50 to 200 vehicle-hours of delay per day

In addition to looking at FHWA warrants for grade separations, crash data was also reviewed. Seven (7) crashes have occurred over a five-year period (2015-2019) due to the railroad crossing according to MACOG crash data. These crashes occurred when the gate was down and were typically rear-ended crashes due to vehicles attempting to back-up and U-turns.

Based on observations of gate down time at a nearby intersection, there was a gate down time of four (4) minutes. It should be noted that a gate down time of 3 minutes or more would be equivalent to a level-of-service (LOS) “F” at an intersection, which would be an unacceptable capacity level-of-service for an intersection. Intersections with a vehicle delay of 1 minute or more result in a level-of-service “F”. The intersection of Hively Avenue and Main Street has a current LOS of “D”.

The purpose of the project is to improve mobility and safety within the project area by eliminating vehicle backups and congestion while maintaining access and connectivity; improve the LOS to a “C” on the new Hively Avenue alignment; and improve bike/pedestrian movements.

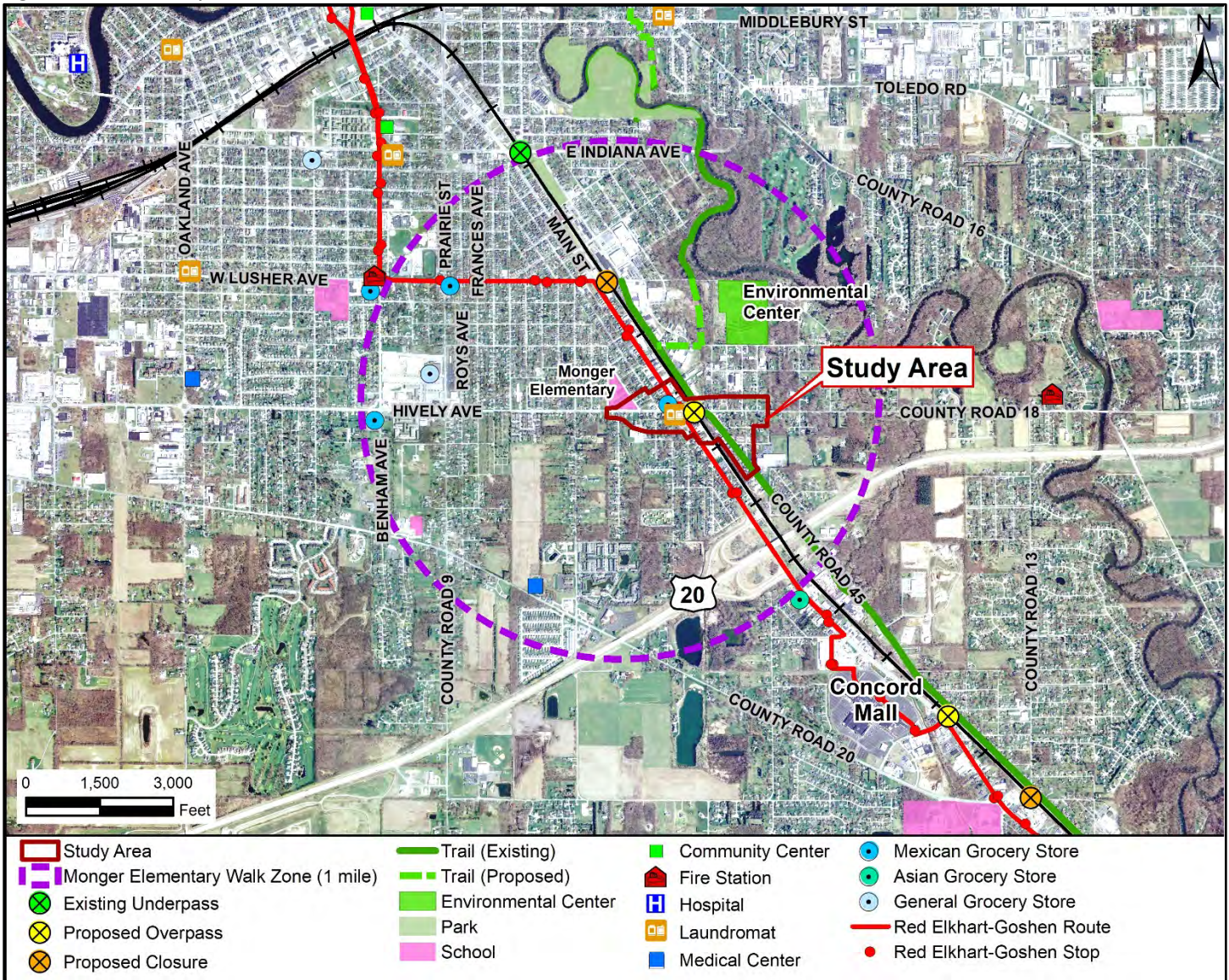
Community Context and Resources within Network Area

Generally, the Network Area is in south-east Elkhart, near the Elkhart County Line, just north of the major intersection of US 20 and US 33. The area is mostly urban and developed. Norfolk Southern’s double tracked rail line runs parallel to S Main Street on the west and to Sterling/Hammond Avenues to the east. Industrial and

commercial land-uses are located immediately adjacent to these transportation resources. To the east and west, lie residential land-uses along with commercial and light industrial business such as gas stations, vehicle service shops, restaurants, and other service-oriented businesses. Community resources include schools, parks, public transportation, trails, grocery stores, medical facilities, law enforcement, fire stations, religious institutions, and other social services. Community Resources within the Network Area are shown in Figure 8.

The Network Area identifies important resources such as the Elkhart Fire Station located approximately 1.3 miles northwest of the Project and the Concord Township Fire Department located 1.4 miles east. The Elkhart Environmental Center, a public environmental education facility, is located approximately 0.5 mile north. The nearest hospital, Elkhart General Hospital, is located approximately 2.7 miles northwest.

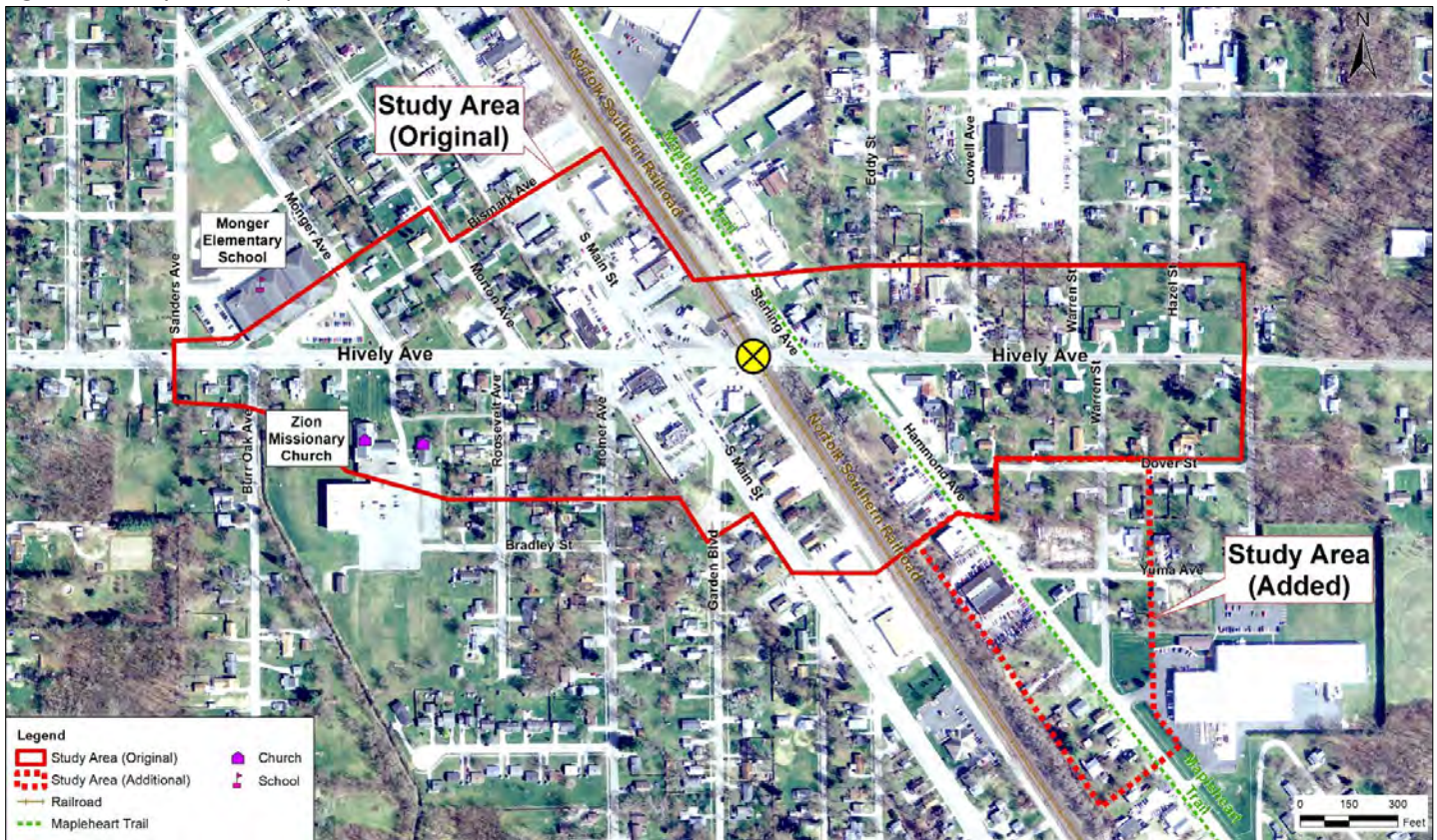
Figure 8. Community Resources within Network Area



Project Study Area Context

Based on the preliminary feasibility study and community context, the Project study team established a preliminary Study Area around the Hively Avenue and Norfolk Southern RR crossing to take a closer look at the community while developing potential design solutions. The Study Area was also used to focus public outreach efforts to the community within and adjacent to the project location. The preliminary Study Area was expanded after public engagement activities in October 2020 identified the need to more closely evaluate and analyze truck movements between Hively Avenue and Hammond and Sterling Avenues. The final Study Area is shown in Figure 9.

Figure 9. Study Area Map



The Study Area is a mix of land-use: industrial and heavy commercial along the north-south roadway and rail network and more residential and light commercial along Hively Avenue, the east-west connector. The current land use pattern has developed over-time, homes and business lie immediately adjacent to the main roadways, driveways, side-street and curb cuts provide direct access to homes, business and other facilities. Monger Elementary School and Zion Missionary Church are in the western part of the Study Area, numerous businesses are located at the intersections of Hively Avenue and S Main Street and Hively and Sterling/Hammond Avenues as shown in Figure 10. The eastern portion of the Study Area is a mix of interspersed light commercial and residential uses. Sidewalks are scattered throughout the area. The Study Area is predominately built out and major changes or shifts in land-use are not anticipated or planned given historic development patterns and local and regional planning efforts. Population and demographic information provide baseline context to frame community impacts, including EJ populations.

Community Resources within Study Area

The Study Area contains several community resources, a few are shown in Figure 11, including Monger Elementary School and two churches Zion Missionary Church and El Divino Redentor. There are several food restaurants including a local restaurant Hunter’s Place. A local Hispanic grocery store, El Rosal supermarket, is located at the corner of S Main Street and Hively Avenue. There is a local laundromat Elkhart Speedwash located adjacent to Hively Avenue and Homer Avenue.

Figure 10. Community Resources within Study Area

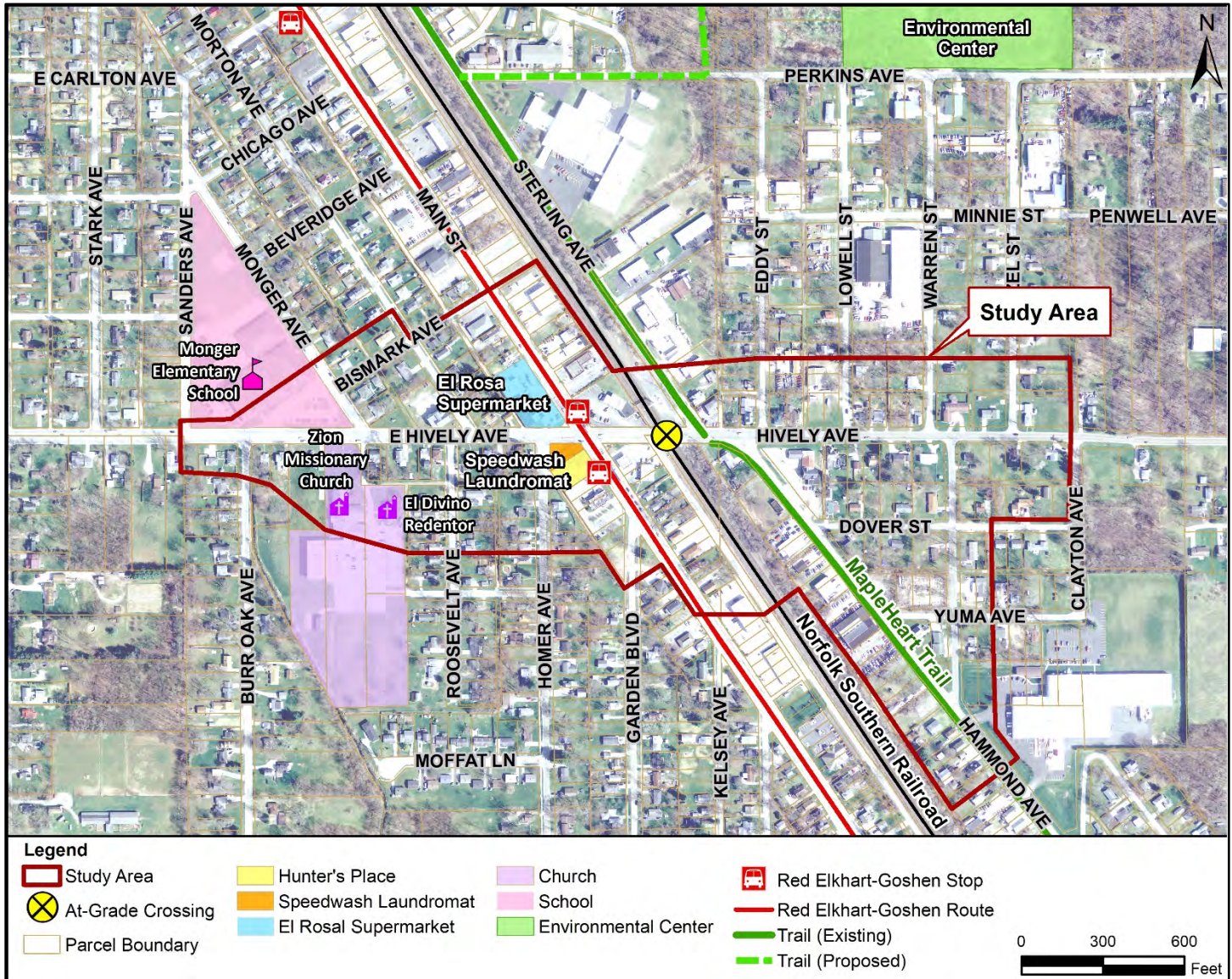


Figure 11. Shown left to right, El Rosal Supermarket, Monger Elementary School, Elkhart Speedwash, Zion Missionary Church (Baker 2020)



EJ Populations within Study Area

Under FHWA Order 6640.23A, FHWA and the project sponsor, as a recipient of funding from FHWA (in this case the potential for federal funding in the future), 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. For this initial analysis the Study Area was used.

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 Elkhart County. The community that overlaps the Study Area is called the affected community (AC). In this project, the AC is Census Tract 19.01, Block Group 5 and Census Tract 21.02, Block Group 1 and 3. 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 2019 American Community Survey (ACS) 5-Year Estimates was obtained from the US Census Bureau Website <https://data.census.gov/cedsci/> on October 18, 2021 by Michael Baker. The data collected for minority, Hispanic and low-income populations within the AC are summarized in Table 3. Michael Baker also provided

further analysis for Limited English-Speaking Households and Spanish Speaking Households within the ACs compared to the COC.

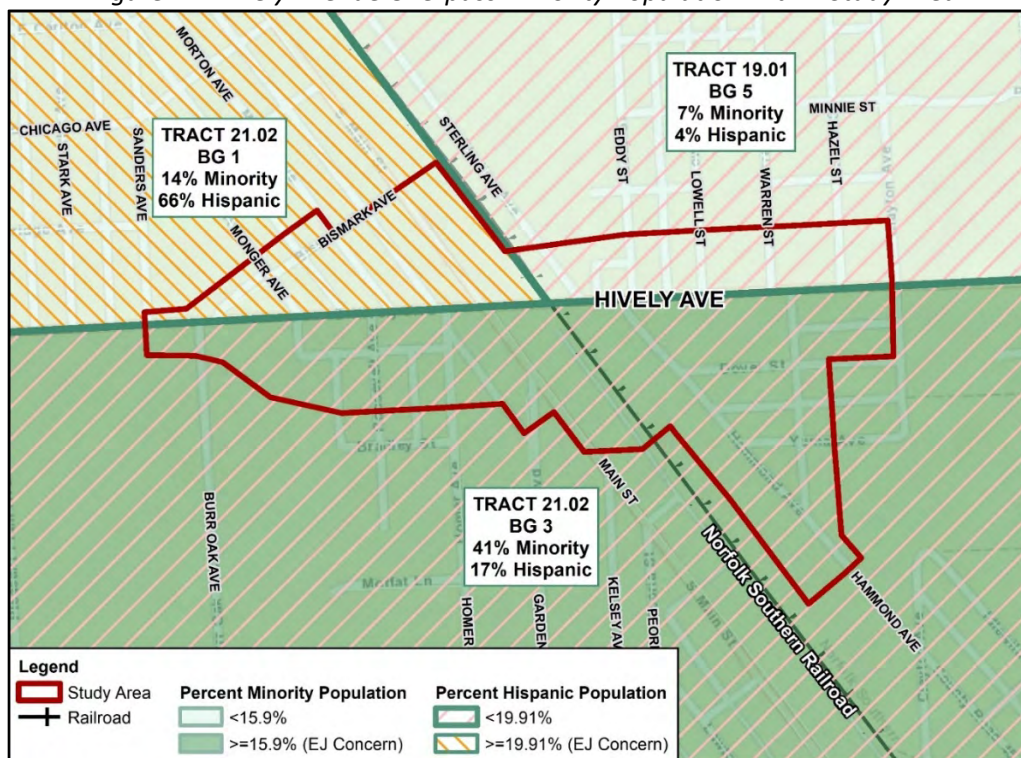
Table 3. Hively Avenue Overpass Environmental Justice AC comparison to COC

Hively Avenue Overpass EJ Analysis				
Census Bureau 2018 ACS 5-Year Estimates Information	COC Elkhart County, Indiana	AC-1 Block Group 1, Census Tract 21.02, Elkhart County, Indiana	AC-2 Block Group 3, Census Tract 21.02, Elkhart County, Indiana	AC-3 Block Group 5, Census Tract 19.01, Elkhart County, Indiana
Minority Population EJ Analysis				
Minority Population (Non-white)	26,017	177	1,145	82
Percent Minority	12.72%	13.76%	40.92%	7.35%
125% of COC	15.90%	AC > 125% COC?		
Minority Population of EJ Concern?		No	Yes	No
Hispanic Population EJ Analysis				
Hispanic Population	32,583	851	470	40
Percent Hispanic	15.93%	66.17%	16.80%	3.59%
125% of COC	19.91%	AC > 125% COC?		
Hispanic Population of EJ Concern?		Yes	No	No
Low Income Population EJ Analysis				
Total Number of Families	50,065	267	730	223
Families Below Poverty Level	4,432	0	172	37
Percent Low-Income (below poverty level)	6.18%	0.00%	14.96%	10.54%
125% of COC	7.72%	AC > 125% COC?		
Low Income Households of Concern?		No	Yes	Yes
Limited English-Speaking Households				
Total Number of Households	71,718	396	1,150	351
Limited English-Speaking Households	2,390	56	17	0
Percent Limited English Speaking	3.33%	14.14%	1.48%	0.00%
125% of COC	4.17%	AC > 125% COC?		
Limited English Households of Concern?		Yes	No	No

Spanish Speaking Households				
Households Speaking Spanish	8,086	256	96	11
Percent Spanish Speaking Households	11.27%	64.65%	8.35%	3.13%
125% of COC	14.09%	AC > 125% COC?		
Spanish Speaking Households of Concern?		Yes	No	No

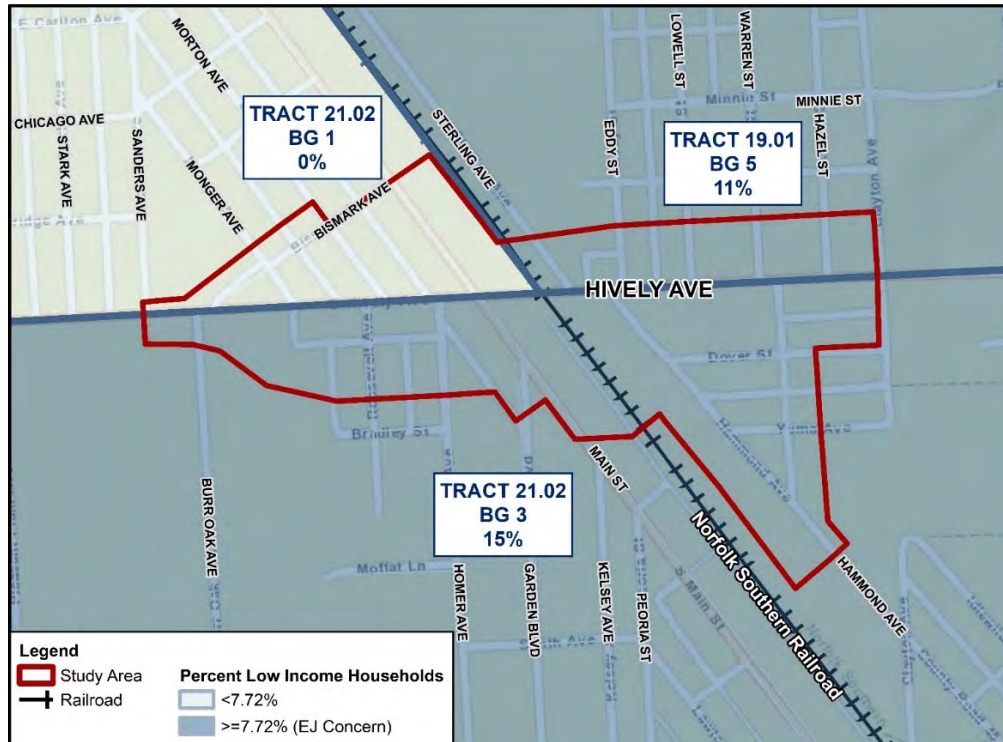
AC-1, Block Group 1, Census Tract 21.02 has a percent minority of 13.76% which is below 50% and below the 125% COC threshold. AC-1 has a percent Hispanic population of 66.17% which is above 50% and above the 125% COC threshold. AC-2, Block Group 3, Census Tract 21.02 has a percent minority of 40.92% which is below 50% but is above the 125% COC. AC-2 has a percent Hispanic population of 16.80% which is below 50% and below the 125% threshold. AC-3, Block Group 5, Census Tract 19.01 has a percent minority of 7.35% which is below 50% and is below the 125% COC. AC-3 has a percent Hispanic population of 3.59% which is below 50% and below the 125% threshold. Therefore, AC-1 and AC-2 have a minority population (non-white or Hispanic) of EJ concern as shown in Figure 12.

Figure 12. Hively Avenue Overpass Minority Population within Study Area



AC-1, Block Group 1, Census Tract 21.02 has a percent low-income of 0.00% which is below 50% and is below the 125% COC threshold. AC-2, Block Group 3, Census Tract 21.02 has a percent low-income of 14.96% which is below 50% but is above the 125% COC. AC-3, Block Group 5, Census Tract 19.01 has a percent low-income of 10.54% which is below 50% but is above the 125% COC. Therefore, AC-2 and AC-3 have a low-income population of EJ concern as shown on Figure 13.

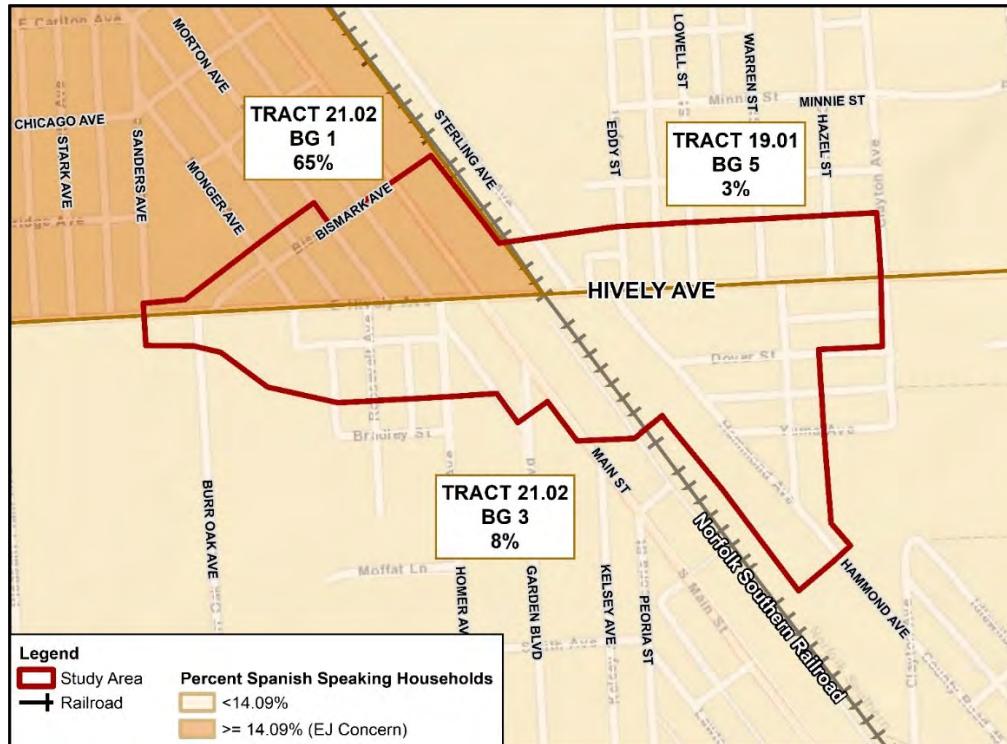
Figure 13. Hively Avenue Overpass Low Income Households within Study Area



AC-1, Block Group 1, Census Tract 21.02 has a percent limited English speaking households of 14.14% which is below 50% but is above the 125% COC threshold. AC-2, Block Group 3, Census Tract 21.02 has a percent limited English speaking households of 1.48% which is below 50% and is below the 125% COC. AC-3, Block Group 5, Census Tract 19.01 has a percent limited English speaking households of 0.00% which is below 50% and is below the 125% COC. Therefore, AC-1 has a limited English-speaking population of EJ concern as shown on Figure 11.

AC-1, Block Group 1, Census Tract 21.02 has a percent Spanish speaking households of 64.65% which is above 50% and above the 125% COC. AC-2, Block Group 3, Census Tract 21.02 has a percent Spanish speaking households of 8.35% which is below 50% and is below the 125% COC. AC-3, Block Group 5, Census Tract 19.01 has a percent Spanish speaking households of 3.13% which is below 50% and is below the 125% COC. Therefore, AC-1 has a Spanish speaking household population of EJ concern as shown on Figure 14.

Figure 14. Hively Avenue Overpass Spanish Speaking Households within Study Area



In summary it was identified that AC-1, Block Group 1, Tract 21.02 has a minority and Spanish speaking population of concern, AC-2, Block Group 3, Tract 21.02 has a low-income and minority population of concern, and AC-3, Block Group 5, Tract 19.01 has a low-income population of concern.

EJ Considerations for Public Outreach

The presence of EJ populations was established early in the project as the community context and public involvement plan were developed. MACOG’s planning document identifies EJ populations within the Network Area. Additional demographics and US Census Bureau data analysis further validate the presence of EJ populations within the Study Area. The City of Elkhart as the local agency lead continues to provide important oversight and coordination for all public outreach activities including interfacing with local stakeholders.

The Public Information Plan (PIP) continues to evolve as the project development process unfolds. There have been three public information meetings and a public hearing will be conducted. Communication tools have been and will continue to be provided through a variety of channels. Based on an understanding of the community, meeting notification materials have been translated to Spanish to effectively reach as many people as possible in the community (Figure 15 Flier for Public Information Meeting #1 and #2). A Spanish translator has been used to provide translation at the public information meetings and one will be provided at the public hearing to accommodate everyone who attends. The City of Elkhart provides translations services using city staff who are familiar with the community. All project materials are provided on the City of Elkhart’s website <https://elkhartindiana.org/government/street-department/hively-overpass/> and city staff continually interface with the local community regarding project details including impacts, milestones, and schedule.

Figure 15. Flier for Public Information Meeting #1 & #2



Queremos sus comentarios sobre el Proyecto Ferrocarril Local en Hively Avenue

Para conversar los problemas de seguridad y movilidad, el Departamento de Transporte de Indiana (INDOT) y la Ciudad de Elkhart se están asociando para estudiar, diseñar y construir la Separación a Nivel del Ferrocarril Local Trax en Hively Avenue.

Se están considerando varias alternativas para eliminar el cruce a nivel y reemplázelo con un puente para llevar el tráfico de la avenida Hively sobre las vías del tren.

INDOT y Elkhart están brindando a los residentes dos oportunidades para conversar sobre las propuestas alternativas y brindar comentarios antes del avance del diseño y estudio ambiental.

Una reunión virtual en Zoom
 Martes 20 de octubre, 2020 5 a 7 p.m.
www.Zoom.com
 ID de reunión: 923 9796 3027
 contraseña: 664032

La reunión en persona
 Jueves el 22 de octubre, 2020
 De 5 a 7 p.m.
 Iglesia Misionera de Zion
 1135 E. Hively Avenue
 Elkhart, IN 46517

Visite www.elkhartindiana.org para más información.

Public comment opportunities have been available throughout the project and will continue through the public hearing comment period. Public information meetings allow comments to be presented in-person and via handout comment forms. Project contact information has been provided at public information meetings and on the City of Elkhart’s website which includes representative’s phone numbers, a mailing address, and a dedicated project email. The public, including EJ populations, are able to provide comments via these different methods. The project team keeps track of comments in an on-going comment response table included as part of the PIP document. The public hearing will also provide more opportunities for information sharing and for the public at large, and EJ populations to provide additional feedback.

More detailed information including public information meeting materials can be found in the PIP.

Existing Conditions within Study Area

Roadways/RR Crossing

Hively Avenue is classified as a Principal Arterial and traffic travels east and west. Hively Avenue, from Bismark Avenue to Main Street, consists of four (4) 11-foot wide asphalt lanes with two (2) 5-foot wide bike lanes. Also in this location, there is sidewalk and curb on both sides of the roadway. From Main Street to Sterling Avenue, Hively Avenue consists of four (4) 11-foot wide asphalt lanes with curb on both sides of the roadway and a sidewalk with a utility strip on the north side of the roadway. From Sterling Avenue to Hazel Street, Hively Avenue consists of two (2) 15-foot wide asphalt lanes with curb on both sides. For this section, both eastbound and westbound lanes are transitioning from two travel lanes down to one travel lane per direction. Main Street

is a Minor Arterial and traffic travels northwest and southeast. Main Street, south of Hively Avenue, has four (4) 11-foot wide asphalt lanes with a 2-foot 6-inch centerline separation and curb and sidewalk on both sides. Main Street, north of Hively Avenue, consists of four (4) 11-foot asphalt lanes with curb on both sides. The west side of Main Street has a utility strip and sidewalk on both sides of the roadway at this location. Sterling Avenue is classified as a Local Agency Collector with traffic traveling northwest and southeast. Sterling Avenue consists of two (2) 11-foot asphalt travel lanes with 5-foot bike lanes in both directions. Hammond Avenue is a Local Agency Collector with traffic traveling northwest and southeast. Hammond Avenue consists of two (2) 12-foot asphalt travel lanes with a utility strip and 9-foot bike path on the west side of the road. There are also various local city streets including Monger Avenue, Morton Avenue, Roosevelt Avenue, Lowell Avenue, and Warren Street all of which consist of two (2) 10-foot to 12-foot travel lanes. Monger Avenue, Morton Avenue, and Roosevelt Avenue all have sidewalk along both sides of the road. Hively Avenue intersects with the Norfolk Southern RR as shown in Figure 16. Norfolk Southern’s double-tracked line runs parallel to S Main Street and Sterling/Hammond Avenues within the Study Area. The track is heavily used with 70-100 trains per day.

Figure 16. Hively Avenue and Norfolk Southern Railroad At-grade Crossing (Baker 2020)



Pedestrian, Bicycle, and Transit Resources

The Study Area contains pedestrian, bicyclist, and transit resources including sidewalks, crosswalks, a trail, and bus stops.

Sidewalks & Crosswalks

Existing sidewalks, as shown in Figure 17, run along Hively Avenue on both the north and south side from Monger Elementary School east to S Main Street. The sidewalk continues on the north end of Hively Avenue from S Main Street east to the Norfolk Southern RR. There are no sidewalks east of the Norfolk Southern RR tracks within the Study Area along Hively Avenue or the intersecting side streets. The existing sidewalks along Hively Avenue intersection with Burr Oak Avenue, Bismark Avenue, Monger Avenue, Roosevelt Avenue, Morton Avenue, Homer Avenue, and S Main Street, along with residential driveways, Monger Elementary School, Zion Missionary Church, and businesses. There are existing curb ramps at these intersections, some of which are not

ADA compliant. These non-ADA compliant curb ramps are located at the entrance of the Zion Missionary Church, the entrance to El Rosal, and at the intersection of S Main Street. Existing sidewalks run along S Main Street on both the west and east side, however the sidewalk ends just north of the S Main Street on the east side of the street near Midas. There are non-ADA compliant sidewalk and curb ramps at the intersection of S Main Street and Garden Boulevard and locations with no curb ramps near KFC.

Crosswalks are located in certain locations within the Study Area near Monger Elementary School. Crosswalk lines are faded at the intersection at Hively Avenue and S Main Street.

Figure 17. Existing Sidewalks and Crosswalks within Study Area (Baker 2020)



Trail

MapleHeart Trail runs north and south parallel to Hammond Avenue within the Study Area as shown in Figure 18. The off-road portion of the trail ends at Hively Avenue and currently has a cross-walk to connect to from Hammond Avenue to Sterling Avenue and becomes an on-road route. The trail serves as a connection to the

Elkhart Environmental Center and other parks. Since there are no sidewalks located east of the Norfolk Southern RR there is no existing sidewalk connection to the MapleHeart Trail within the Study Area.

Figure 18. MapleHeart Trail within Study Area (Baker 2020)



Red Line Bus Flag Stops

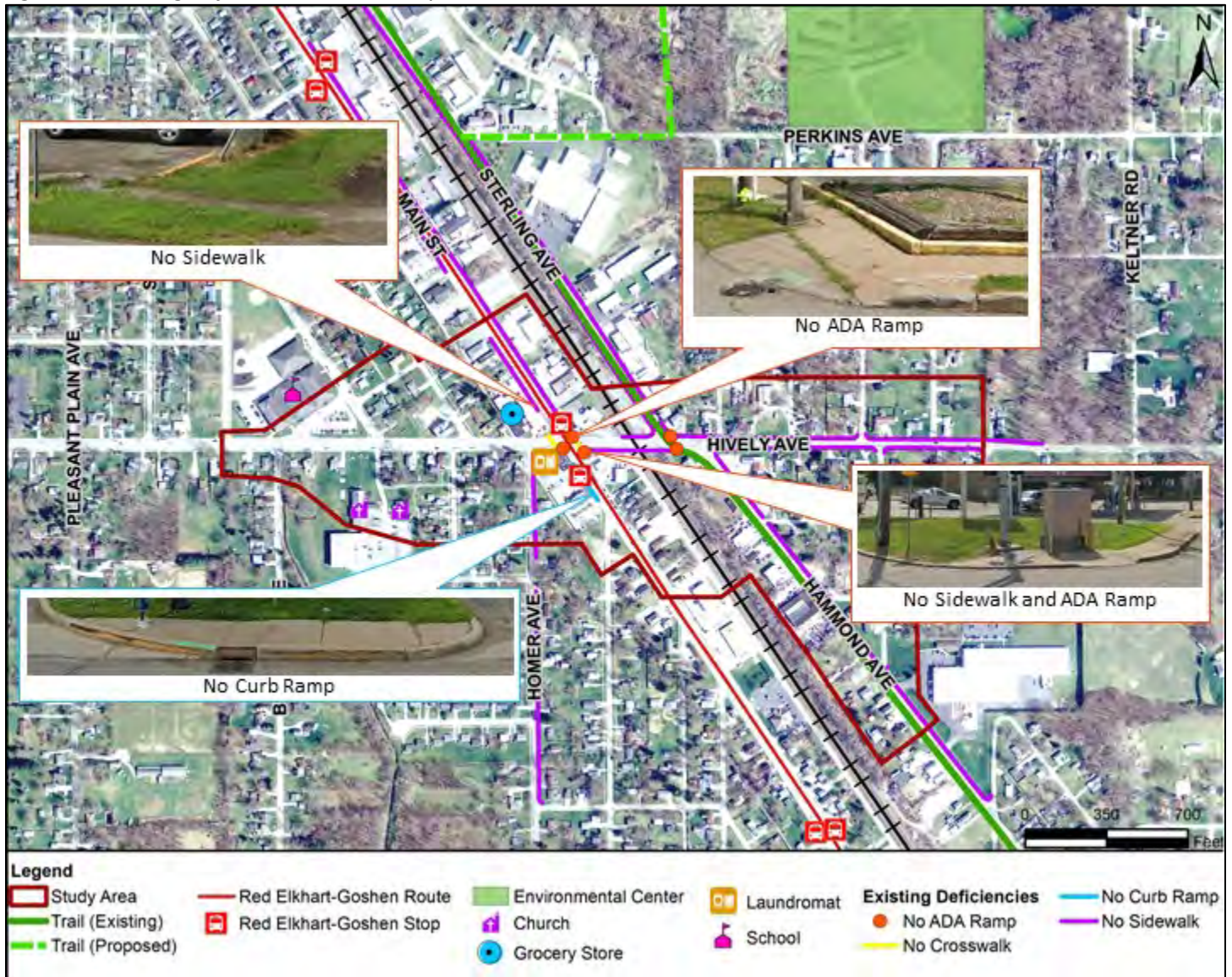
The Interurban Trolley Red Line runs through the Study Area along S Main Street. There are two flag stops, meaning the bus will only stop if someone is there waiting or someone wants to get off the bus, located within the Study Area. The two stops are Stop 43 which is an inbound stop located south of the Hively Avenue and S Main Street intersection and Stop 14 which is an outbound stop located just north of the Hively Avenue and S Main Street intersection as shown in Figure 19. There is a lack of ADA compliant sidewalk connections at the location of both flag bus stops.

Figure 19. Left to right, Inbound Bus Flag Stop 43 and Outbound Bus Flag Stop 14 (Baker 2020)



As previously identified, these resources are linked in some areas but lack connection in other areas as shown in Figure 20.

Figure 20. Existing Deficiencies within Study Area



Cultural Resources

The State Historic Architectural and Archaeological Research Database and Structures (SHAARD) map was reviewed on July 26 and based on preliminary research of existing records, no historic districts or individually listed historic properties are located within the project area.

Hazardous Materials

Based on existing and historic land-use patterns, several properties within the Study Area have current and historic hazardous materials considerations. There is an active 7-11 gas station and several vehicle service/repair shops in the area and active industrial and heavy commercial sites located along the railroad corridor.

Existing Conditions Summary

Existing condition information combined with public involvement and robust local agency coordination, forms the basis of the community context. The community context includes environmental, socio-economic, and community resources and constraints including important community identify information such as the presence of EJ populations. This information is utilized during the development and consideration of existing deficiencies and design alternatives including public involvement activities and the project Engineer's Report.

Alternatives Analysis

The Project's Engineer's Report (November 2019) builds upon the 2017 Feasibility Study, funded by the City of Elkhart, and used as the basis for the INDOT Local TRAX Grant Application. As mentioned in earlier sections, this Project has a defined planning history and is consistent with both local and regional plans. The Engineer's Report reconsidered alternatives presented in the 2017 Feasibility Study with updated information including a deeper evaluation of deficiencies and with consideration to the community context (existing conditions). This process provided an opportunity to incorporate avoidance and minimization measures during the development and analysis of alternative.

Existing Deficiencies

Building upon the existing condition and community context information, the project study identified key deficiencies within the Study Area for consideration during engineering design. These include:

- Lack of connectivity/mobility
- Traffic backups/congestion at Norfolk Southern RR crossing
- Lack of sidewalk connections in certain areas along Hively Avenue
- Lack of safe pedestrian crossing at Norfolk Southern RR
- Non-ADA compliant curb ramps and sidewalk
- Lack of crosswalk markings at intersection of Hively Avenue and S Main Street
- Lack of connection to existing MapleHeart Trail
- Flag bus stop locations near sidewalk with no curb ramps
- Within an Elementary School walk zone but does not have complete sidewalks/connection throughout

No Build

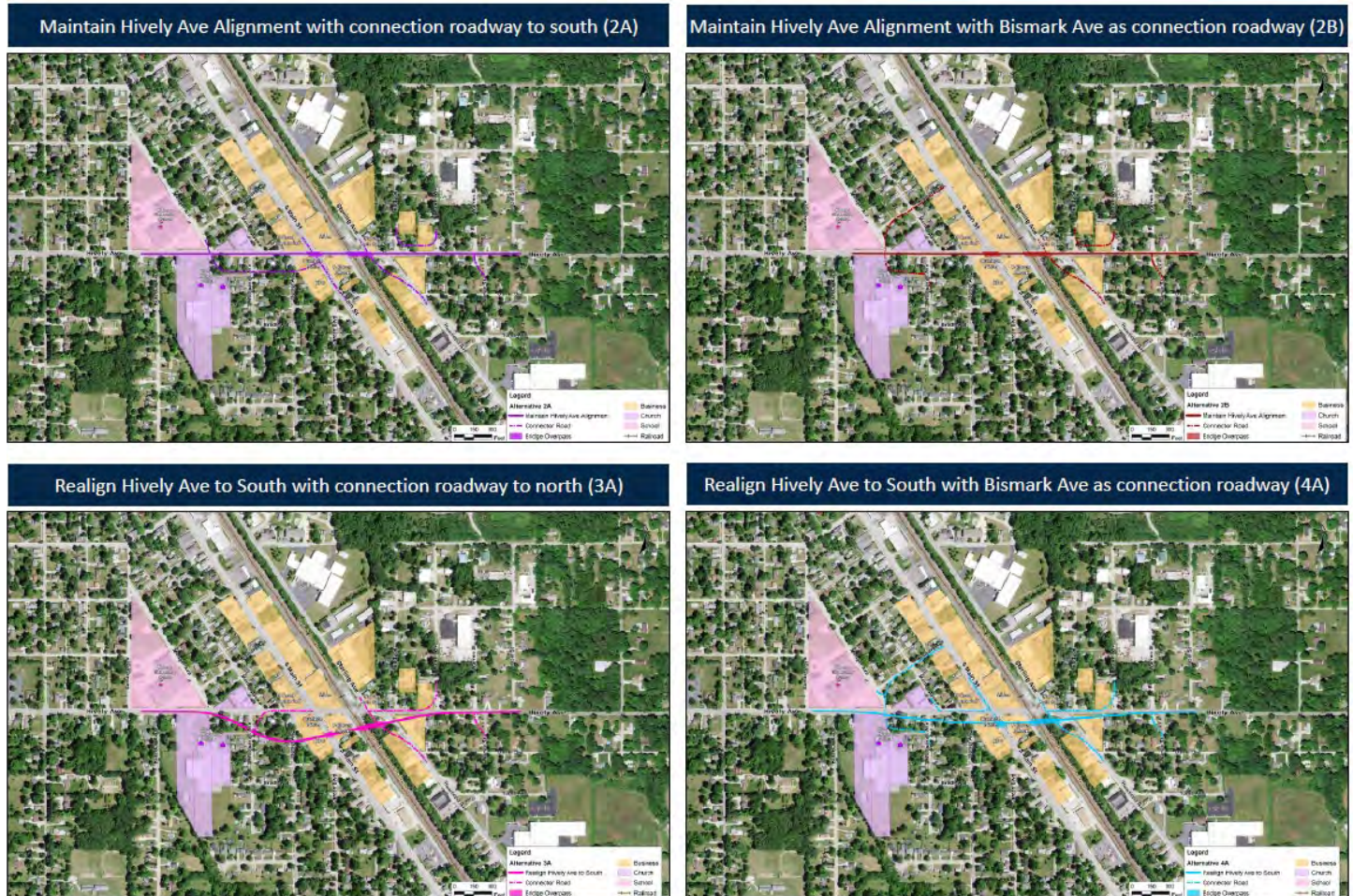
The No Build (or, do nothing) alternative would leave the existing at-grade crossing of Hively Avenue and Norfolk Southern Railroad in place, as is, with minor improvements and routine maintenance. The existing deficiencies within the Study Area would continue to cause safety concerns, limit mobility and access, and fail to meet Americans with Disability (ADA) requirements. The No Build does not meet the purpose and need. However, the No Build alternative remains an important part of project evaluation as a baseline condition.

Build

Four build alternatives were developed and considered in the 2019 Engineer's Report: Alternative 2A, 2B, 3A, and 4A as show in Figure 21. Generally, Alternative 2A and Alternative 2B would keep the grade separation (overpass) on the existing Hively Avenue alignment. This would require a long-term closure and complete traffic detour of Hively Avenue for over two (2) years during construction. Alternative 3A and 4A would shift the alignment to the south, avoiding long-term closures and complete traffic detours while providing more desirable

design components. Shifting the alignment to the north was considered but dismissed early on as it would impact the local El Rosal supermarket. The 2019 Engineer’s Report identified Alternative 3A as the preferred design alternative. The range of build alternatives considered and evaluated environmental, socio-economic and community impacts as well as design criteria and the ability to address existing deficiencies and minimize and avoid impacts, to the extent possible.

Figure 21. Range of Build Alternatives



Alternative Analysis Summary

All alternatives were evaluated for meeting the purpose and need along with benefits and potential impacts as shown in Table 4. The No Build did not provide any benefits or impacts and did not meet the purpose and need; therefore, it was eliminated from consideration. All the build alternatives provide improved safety and mobility, bike/pedestrian improvements, and are consistent with regional and local comprehensive plans. All the build alternatives meet the purpose and need and have comparable potential impacts.

Table 4. No Build and Build Benefits and Potential Impacts

Benefits/Potential Impacts (Temporary and Permanent)	No Build	Build			
		Alternative 2A	Alternative 2B	Alternative 3A	Alternative 4A
Improved Safety and Mobility	No	Yes	Yes	Yes	Yes
Bike/Pedestrian Improvements	No	Yes	Yes	Yes	Yes
Community Impacts	None	Minimum	Minimum	Minimum	Minimum
Property Impacts (by Parcel)*					
Residential	0	37	30	35	34
Commercial	0	11	7	10	8
Other/Community	0	4	5	2	4
Potential Hazardous Waste Sites (combination of high and medium potential sites)	0	4	4	4	5
Public Resources (MapleHeart Trail) Impact	None	Temporary	Temporary	Temporary	Temporary
Environmental Justice Considerations	XX	Potential	Potential	Potential	Potential
Consistent with Regional and Local Comprehensive Plans	No	Yes	Yes	Yes	Yes
Meets Purpose and Need	No	Yes	Yes	Yes	Yes

*This analysis of parcel impacts was conducted in January 2021

The build alternatives were further compared to one another for key engineering considerations as shown in Table 5. A major key consideration was the closure of Hively Avenue during construction. The long-term closure of Hively Avenue for Alternative 2A and 2B would impact access to local businesses in the immediate vicinity of the project and impact regional mobility, secondary but important impacts to consider. These secondary impacts may have long term impacts on local businesses and the community who relies on those businesses for goods and services. El Rosal is of particular concern given the community that it serves and the difficulties it may encounter due to prolonged access impacts. Shifting the alignment to the south, Alternative 3A and 4A, avoided these impacts to the local El Rosal supermarket and other businesses.

Table 5. Key Engineering Considerations for Build Alternatives

Key Engineering Considerations	Alternative 2A	Alternative 2B	Alternative 3A	Alternative 4A
Maintains Hively Ave Current Alignment	Yes	Yes	No	No
Short-term Closure of Hively During Construction	No*	No*	Yes	Yes
Desirable Intersection Geometry and Sight Distance	No	No	Yes	No
Maintains Side Street Access	No	No	Yes	Yes
Minimal Traffic Increase on Bismark Ave	Yes	No	Yes	No
Lowest Estimated Construction Cost	No	No	Yes	No

The alternatives were also evaluated for the potential impacts to residential properties relative to the EJ Census Block Groups as shown in Table 6. The alternatives were also evaluated for the potential commercial property impacts as shown in Table 7.

Table 6. Potential Residential Impacts relative to EJ Census Block Groups by Alternative

	Alternative 2A	Alternative 2B	Alternative 3A	Alternative 4A
Residential Impacts*	20	21	19	17
Tract 19.01 BG 5 (low-income)	5	5	3	2
Tract 21.02 BG 1 (minority & Spanish speaking)	2	3	1	2
Tract 21.02 BG 3 (low-income & minority)	13	13	15	13

*This analysis was conducted in January 2021

Table 7. Commercial Impacts by Alternative

	Alternative 2A	Alternative 2B	Alternative 3A	Alternative 4A
Commercial Impacts	4	3	4	5

*This analysis was conducted in January 2021

Based on the direct impacts to residential and commercial being similar for each alternative, secondary impacts to community cohesion would rule out Alternative 2A and Alternative 2B as a preferred alternative since they require a long-term closure to Hively Avenue which would cut off access to community resources. This leaves Alternative 3A and Alternative 4A, which have short-term closures (months) to Hively Avenue. In comparing the two, Alternative 3A has one less commercial impact than Alternative 4A and Alternative 4A has two less residential impacts than Alternative 3A. In terms of community and EJ impacts their impacts are almost the same. Based on engineering, Alternative 4A does not provide desirable intersection geometry and sight distances. Since one of the components of the purpose and need is safety related, this rules out Alternative 4A.

The engineering team determined there was a need to make additional engineering changes to accommodate truck movements. A dedicated Truck Route along south Warren Street was developed, analyzed, and incorporate into the project.

Alternative 3A with the Truck Route is the Preferred Alternative carried forward for additional public involvement and detailed analysis in the environmental document.

Community Engagement

The alternative analysis and preliminary preferred information was presented to the public during two (2) Public Information Meetings (PIMs), PIM #1 and PIM #2, in late October 2020 and one (1) PIM, PIM #3, on August 31, 2021. PIM #1 was held virtually via a Zoom meeting and PIM #2 and PIM #3 were in-person, open house style events held at the Zion Missionary Church, located within the Study Area. Public notices were posted for the meetings via local newspapers, including the local El Puente newspaper. Postcards were created that showed the project termini and at-grade crossing location and provided public meeting information for public

information meetings. This information was translated in Spanish on the back of the postcard. In addition, team members took mailers, which included information in both English and Spanish, to local businesses around town to distribute flier information about the public information meetings.

The PowerPoint presentation from the Zoom meeting was posted to the City of Elkhart website and the presentation was recorded. Approximately 55 people attended the Zoom meeting. Any comments asked were recorded in an on-going comment response kept for the project.

The in-person open houses included a welcome table with a sign-in sheet, comment forms, and project information sheets. Stations were set-up with exhibits that showed the project location, alternatives, and alternative comparisons. Members of the project team were at each station to talk about the project and answer questions. The City of Elkhart provided a Spanish interpreter for anyone to use during the open house. Approximately 67 people attended the PIM #2 open house. Approximately 80 people attended the PIM #3 open house.

One important outcome of PIM #2 was the expansion of the Study Area to further consider and evaluate truck movements, particularly those desiring to go north or south from Hively Avenue, connecting to Sterling and Hammond Avenues where industrial and commercial land-uses are concentrated alongside the Norfolk Southern double-track line. A group of business owners expressed concern regarding truck movements based on firsthand experience and requested that the project study team take another look. There were also concerns that without a dedicated or formal truck route that trucks might try to use the local street network which is undesirable. Other public comments and concerns included overall concerns regarding property impacts, including ingress/egress and parking considerations for adjacent businesses particularly the elementary school and the El Rosal supermarket. Potentially impacted property owners and occupants were concerned with the timing of activities, the project schedule and when to expect land acquisition to begin.

The project team expanded the Study Area and included the additional baseline information into the overall alternative analysis. Preliminary property impacts were further considered relative to EJ population information and more detailed analysis was conducted to further avoid and minimize impacts, where practical.

Preferred Alternative

Project Description

The Preferred Alternative, shown in Figure 22 and 23, proposes eliminating the existing Norfolk Southern Railroad at-grade-crossing at Hively Avenue by creating a new grade separation (bridge) which will carry Hively Avenue over the Norfolk Southern Railroad, Main Street, and Hammond Avenue. A bridge number will be assigned to this structure as the design progresses. The bridge will raise the Hively Avenue profile approximately 23.22 feet above the Norfolk Southern Railroad which meets the minimum 23 feet vertical clearance required for railroads. Hively Avenue will be reconstructed and shifted to the south from Monger Avenue, shifting approximately 178 feet at the Roosevelt Avenue intersection to then connect back to the existing alignment where it connects with Hazel Street. Sidewalk will be added on both sides of Hively Avenue near Bismark Avenue extending east to Roosevelt Avenue and sidewalk connections will be added on Monger Avenue, Morton Avenue, Roosevelt Avenue, and Main Street. ADA compliant curb ramps will be added where new sidewalks are constructed along all local streets shown in Table 8. An intersection modification will be added at Homer Avenue transforming the intersection into a cul-de-sac, 350 feet south of Main Street due to the closure of the Main Street intersection. Hammond and Sterling Avenue will be realigned to be directly in line with each other

allowing traffic to be directed northeast to southwest under the Hively Avenue grade separation. Lowell Avenue will be realigned approximately 200 feet north of existing Hively Avenue to extend southwest and intersect with Sterling Avenue. Roosevelt Avenue will be extended approximately 540 feet north of Hively Avenue to connect to Main Street. Eddy Street will be realigned to extend south to the new Lowell Street Alignment by 20 feet. Realignment and reconstruction of Warren Street will occur approximately 40 feet north of Hively Avenue and alignment of approximately 200 feet south of existing Hively Avenue.

From Roosevelt Avenue to Warren Street, Hively Avenue will have a multi-use path along the north side of the roadway. The multi-use path will then connect to Hammond Avenue and run along the westside of Hammond Avenue to connect to MapleHeart Trail. MapleHeart Trail will be realigned with Hammond Avenue and include a new crosswalk provided for connection to the MapleHeart Trail along Sterling Avenue. Intersecting side streets will have pavement improvements and reconstructed drive approaches where necessary. New drainage infrastructure, including curb inlets, ditch inlets, and roadside ditches, will be added as required throughout the project limits. Traffic signals will be added to the Hively Avenue and Roosevelt intersection, Hively Avenue and Warren Street intersection, and Roosevelt Avenue and Main Street intersection.

Table 8. Preferred Alternative Proposed Sidewalk/ADA Compliance Locations

Intersection	Quadrant Location
Hively Ave & Monger Ave	NE & NW Quadrants
Hively Ave & Roosevelt Ave	NE, NW, SE & SW Quadrants
Hively Ave & Warren St	NW Quadrant
Main St & Roosevelt Ave	NE, NW & SW Quadrants
Main St & Garden Blvd	NW & SE Quadrants
Hammond Ave & Lowell Ave	SE & SW Quadrants

To accommodate a truck route, a full depth reconstruction of the pavement on Warren Street and paved shoulders will be added adjacent to each travel lane north of Hively Avenue. Curb Inlets will be provided, and drive approaches will be reconstructed where required along Warren Street. The Warren Street approach at Hammond Avenue will be reconstructed to accommodate truck turning movements.

The maintenance of traffic (MOT) plan for the project will be split into phases, Phase 1, Phase 2, and Phase 3. Phase 1 will keep Hively Avenue open as construction begins south of Hively Avenue and closures will be required on intersecting side streets including Roosevelt Avenue, Homer Avenue, Hammond Avenue, and Warren Street. During this time a detour route will be provided utilizing SR 33 and CR 45. Phase 2 will require temporary closures on Monger Avenue, sections of Hively Avenue, Roosevelt Avenue, Warren Street and a detour route will be provided utilizing Pleasant Plain Avenue, SR 20, and CR 13. Phase 3 includes the permanent closure of the existing Hively Avenue alignment and railroad crossing and allows traffic onto the new Hively Avenue alignment. One of the benefits of the preferred alternative is that the existing Hively Avenue roadway will remain open throughout most of the project construction and will only be closed for a few months during construction. MOT will be provided for pedestrians and bicyclists utilizing local side streets. The bus route which uses Main Street should be able to keep its normal route however Stop 43 may need to be temporarily moved during construction. There will be continued coordination with the City of Elkhart for the Interurban Trolley Red Line.

After the Preferred Alternative is constructed and the new facility is open to traffic, the City of Elkhart and Norfolk Southern will negotiate the crossing closure required by the Local Grant Agreement. As proposed, this closure will occur at E. Lusher Avenue, however, another location could be agreed upon. Any subsequent local road (railroad crossing location on the local network) closure will be executed as a separate project with local funding per the City of Elkhart’s Board of Works sometime in the future. The timing of these activities is undefined at this time.

The preferred alternative meets the purpose and need of the project. The construction of the overpass will alleviate the at-grade crossing of Hively Avenue and the Norfolk Southern Railroad tracks and allow vehicular traffic, bicycle and pedestrian movements and trains to move independently of one another. This will reduce congestion and improve mobility and overall travel reliability within the project area. The LOS is anticipated to be a “C”. The preferred alternative also includes a truck route that was included after public comments were received at PIM #2. The sidewalk network will be greatly improved; new, connected, ADA compliant sidewalks along Hively Avenue and adjacent side streets, Main Street, Roosevelt Avenue, and Hammond Aveune allow a connection to Monger Elementary School, El Rosal supermarket, churches, residential and businesses; which is an overall benefit to the community. The sidewalk improvements in the vicinity of Monger Elementary are consistent with Safe Routes to School goals identified in local plans including the MACOG Michiana on the Move: Transportation Plan 2045. The improved sidewalks also provide connectivity to the MapleHeart Trail which is lacking in the existing condition; this will also improve neighborhood connectivity to the Environmental Center. Pedestrian access to the transit stop will be improved with ADA compliant sidewalk and may be further enhanced by the proposed green space located between the mainline of the new roadway and bridge and the connection back to Hively on the westside.

Figure 22. Preferred Alternative

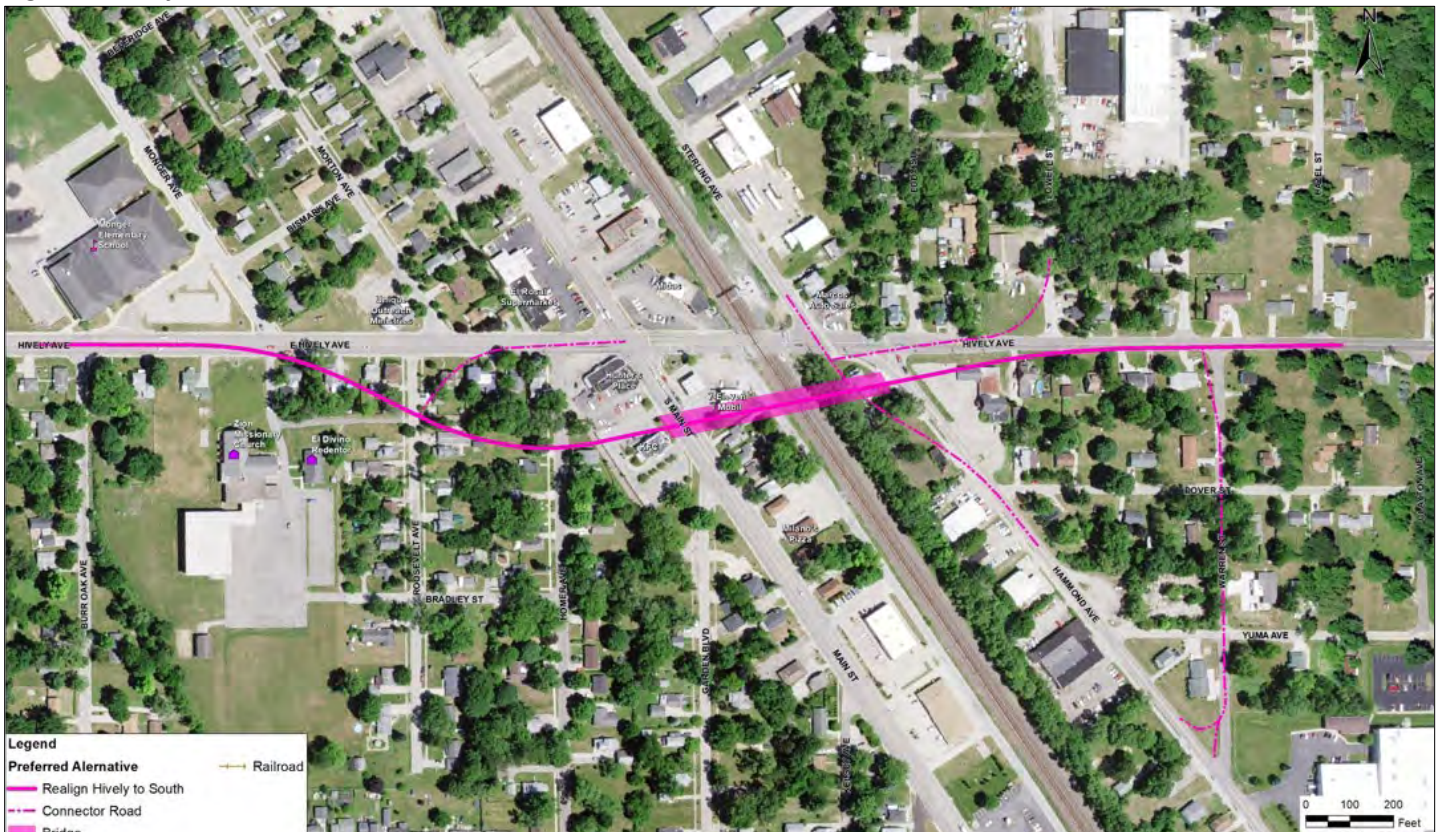


Figure 23. Preferred Traffic Flow



Preferred Alternative Impacts

Right of Way/Property Impacts

The Preferred Alternative will require the purchase of permanent and temporary right-of-way (ROW). The amounts of permanent and temporary ROW by land use are shown in Table 9. Attached you will find a Master Property Impact Table that breaks down the ROW by Parcel ID and Address. Approximately 10.32 acre of permanent ROW will be needed from 58 properties and 0.88 acres of temporary ROW from 14 properties. This means that a total of 72 properties will be affected directly by the project. Table 10 identifies the anticipated number of relocations and acquisitions associated with the project. An acquisition refers to a purchase of a vacant property. The anticipated impacted properties are shown in Figure 24.

Table 9. Preferred Alternative ROW Amounts

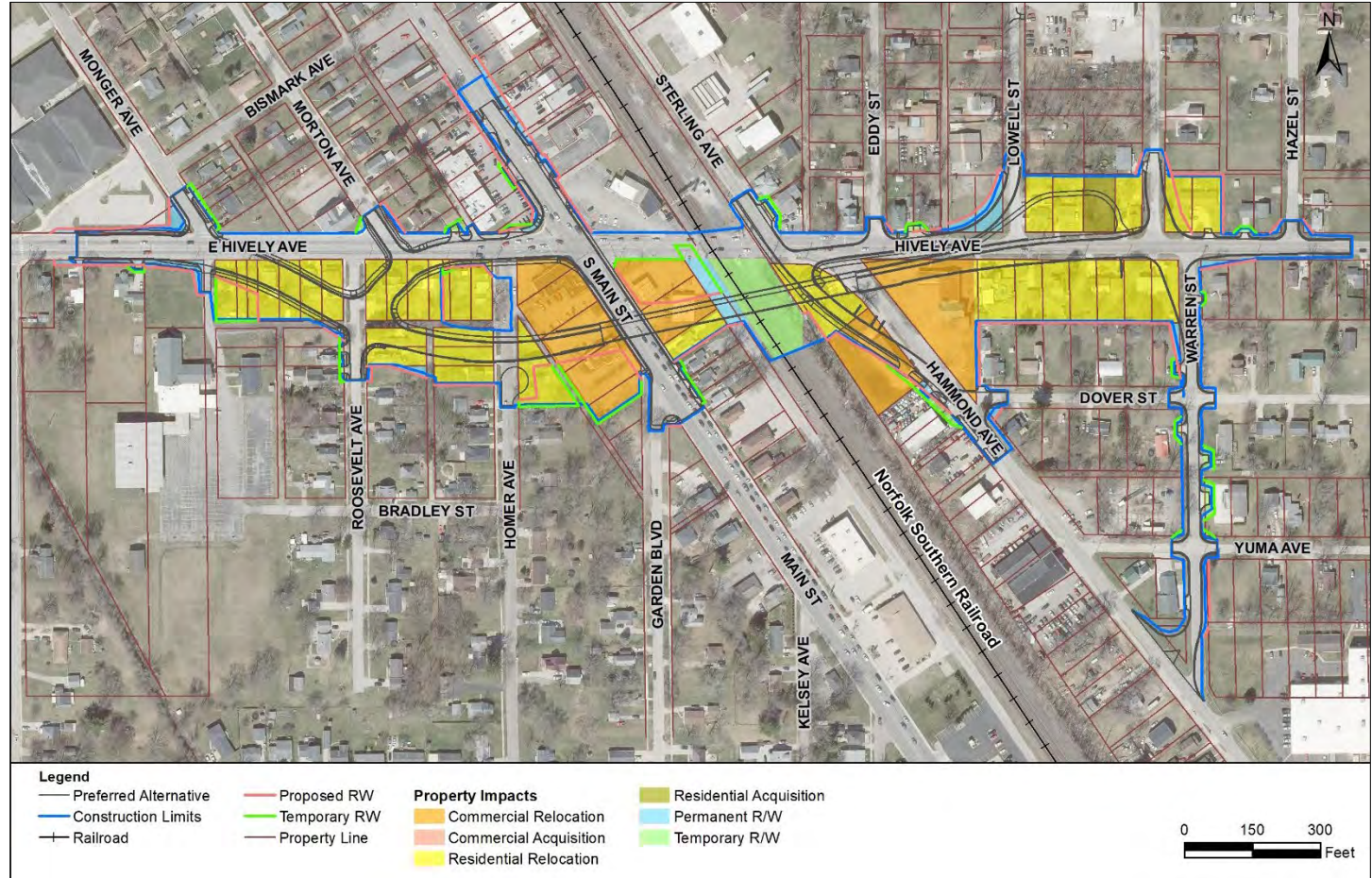
Land Use	Permanent ROW (acres)	Temporary ROW (acres)
Residential	6.23	0.17
Commercial	3.72	0.14
Other (Church, School, Utility)	0.37	0.57
Total:	10.32	0.88

Table 10. Preferred Alternative Relocations and Acquisition

Land Use	Relocation	Acquisition*
Residential	21	1
Commercial	6	0
Total:	27	1

*Purchase of vacant property

Figure 24. Preferred ROW and Property Impacts



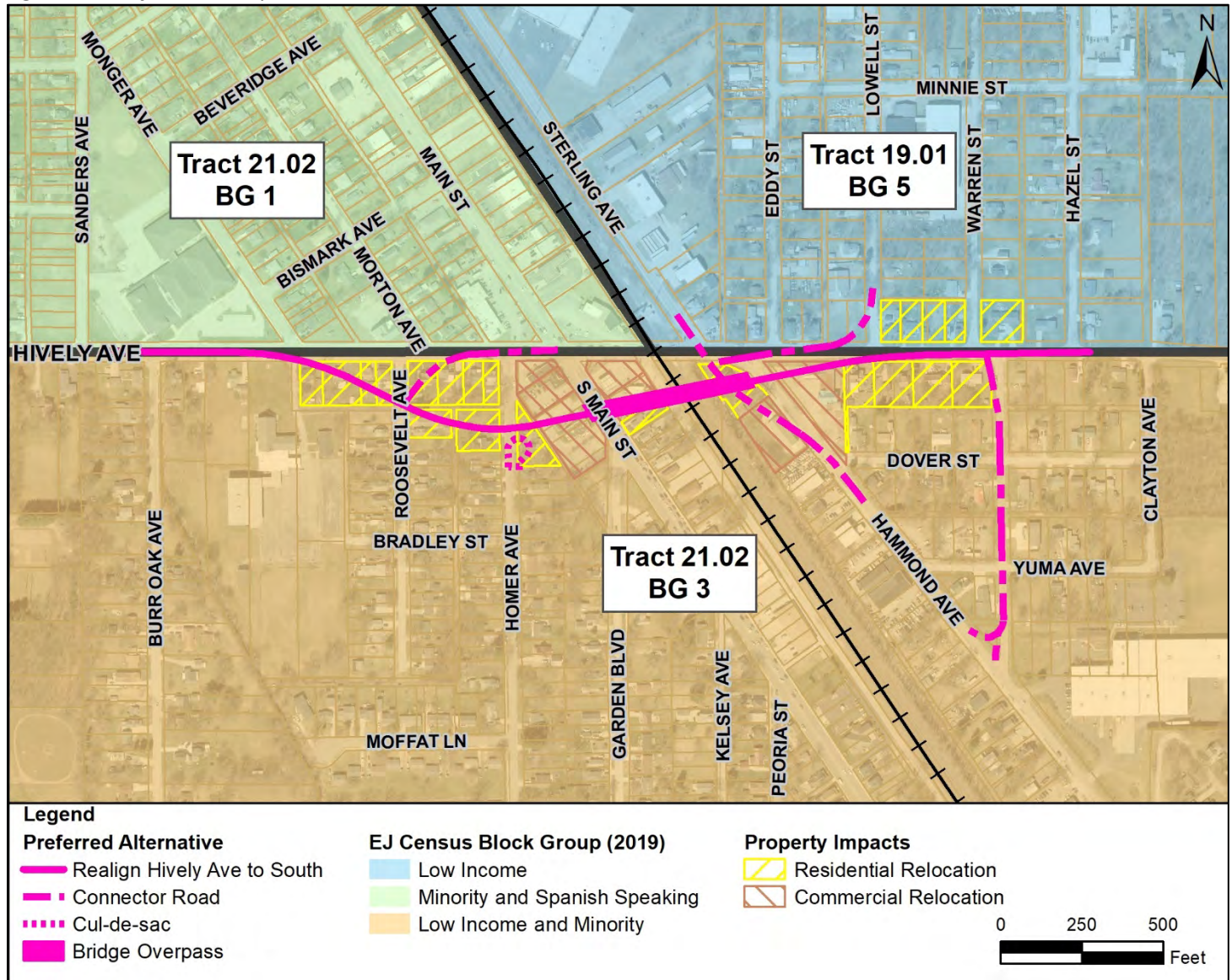
Environmental Justice

Further expanding on the anticipated property impacts, the Preferred Alternative anticipated impacts to properties within EJ Census Block Groups was identified in Table 11 and shown in Figure 25.

Table 11. Preferred EJ Block Group Residential Impacts

	Preferred Alternative
Total Residential Impacts	21
Tract 19.01 BG 5 (low-income)	5
Tract 21.02 BG 1 (minority & Spanish speaking)	0
Tract 21.02 BG 3 (low-income & minority & Spanish speaking)	16

Figure 25. Preferred EJ Impacts



Cultural Resources

An Area of Potential Effects (APE) was established and includes all properties adjacent to the project and those with a proximate viewshed of the project. The dimensions of the above-ground APE were defined by the new bridge construction over the railroad tracks, realignment of Hively Avenue, urban residential development, and mature vegetation. The APE measures approximately 0.72 mile long and 0.42 mile wide. The archaeological APE consists of all proposed new, temporary, or existing right of way as well as any additional areas investigated beyond it.

No properties within the APE are listed in or recommended eligible for listing in the National Register of Historic Places (NRHP). It has been determined that a “No Historic Properties Affected” finding is appropriate for the proposed project.

Hazardous Materials

A Modified Phase I ESA report was completed by Michael Baker and concluded that while there are 13 parcels that cannot be avoided per Stage 1 plans with either a current on-site REC, or Historic REC in connection with past uses that pose a concern to impact worker safety and proper handling/disposal of waste (i.e., soil and/or water) generated as part of construction activities.

Further evaluation (Phase II sampling) is recommended at 13 locations and typically consists of surface soil (0-2-feet bgs), subsurface soil samples (below 2-feet to 10-feet bgs), and groundwater (if encountered); depending on the maximum excavation at a given location.

Noise

A Type I noise analysis was performed. Seven existing ambient measurements were recorded. Two of the ambient levels approached or exceeded the NAC criteria. A total of 128 location sites representing 128 receptors were modeled for the existing, design year build and no-build alternatives. Existing modeled Leq noise levels ranged from 41.6 dBA to 68.7 dBA (Interior; 29.5 dBA to 32.3 dBA). There were seven receptors that approach or exceed the applicable NAC criteria as defined in the INDOT Traffic Noise Analysis Procedure. These locations consisted of seven residential land uses. An evaluation of the design year No Build scenario resulted in the identification of 10 residences that approached or exceeded the NAC criteria.

The analysis summary predicted 14 total impacts (14 NAC and zero substantial increase impacts). There were no barriers that met INDOT's criteria for "feasibility". Therefore, no barriers are proposed to be carried forward as a result of this preliminary analysis. A final determination on noise abatement will be made during the final design phase of the project. At such time, additional noise analysis will be performed as applicable to more accurately determine barrier performance, barrier characteristics (length and height), and the optimal barrier location for any potential noise barriers that may be recommended for noise abatement.

Tax Base/Property Values

The project is located within a Tax Increment Financing (TIF) District. The condensed TIF has 2,796 parcels and the total revenue of this TIF is approximately 1.9 million. The project will impact 17 parcels which is 0.61% impact to the total parcels within the consolidated TIF. The project will create a loss of approximately \$47,671 (total tax collected from parcels) which is 2.51% loss of the total revenue. Coordination was conducted with the City of Elkhart Assistant Director for Economic Development and the TIF Infrastructure Project Supervisor. They provided the following information:

- Project has long term positive impact for both residential and commercial uses in that it reduces congestion and traffic backup in this corridor.
- The loss of residential parcels with respect to their contribution to TIF increment will be negligible.
- Local commercial businesses that are displaced have ample opportunities to relocate within the corridor.
- The short-term disruption of traffic flow is manageable and not deemed to be an impediment to economic development.

Consistency with Regional and Local Planning

The Project has been programmed in both State and Local transportation plans. In addition, the City of Elkhart has been an active participant in leading the Project and public outreach efforts.

STIP

The Project is identified as Designation (Des.) Number 1801933 in the Fiscal Year (FY) 2020-2024 Indiana State Transportation Improvement Program (STIP).

MPO TIP

The MPO, MACOG, serves Elkhart, Kosciusko, Marshall, and St. Joseph counties. The Project is listed in the State Fiscal Year (SFY) 2020-2024 Transportation Improvement Program (TIP).

MPO LRTP

MACOG is responsible for producing a 20 year long-range transportation plan (LRTP) which is updated every four years. The plan, *Michiana on the Move: Transportation Plan 2045*, was adopted on October 2019. Michiana on the Move identifies the Hively Avenue Project as a high priority project.

City of Elkhart

The *City of Elkhart Comprehensive Plan, adopted 2015* identifies MACOG's list of upcoming projects as part of the 20 year plan and includes the Hively Avenue grade separation project.

Additional Public Outreach

The Preferred Alternative including draft impact analysis was socialized with the public at Public Information Meeting #3, an in-person, open-house style meeting in late August 2021. PIM #3 provided more detailed design information and further evaluated proposed property impacts and included a station dedicated to explaining the land acquisition and relocation process. Members of the Project's ROW Services Team were available to answer questions about ROW and relocations and spend time speaking with individual property owners and residents. FHWA Relocation, FHWA Spanish translated Relocation, and Acquisition Brochures were also provided. The Project study team presented the proposed Truck Route along south Warren Street, the extensive sidewalk improvements, intersection improvements and other design details including traffic movements. Approximately 80 people attended the Public Information Meeting #3 open house.

As expected, most public comments and concerns were focused on the proposed property impacts, the timing of activities, the project schedule and when to expect land acquisition to begin. There were also concerns and questions about traffic flow and turning movements, the location of signals, accommodations for the MapleHeart Trail extension (recently funded by a Next Level Trails Grant) which includes access to the Environmental Center (outside but adjacent to the Study Area) and the potential for 'cut-thru' traffic, particularly trucks, to the northeast of the project.

The project team has finalized the Preferred Alternative including impact analysis and is preparing the draft environmental document, EA, for release for public involvement with the public hearing anticipated in early 2022. Additional public engagement activities including Kitchen Table Meetings have occurred with impacted property owners and a Conceptual Site Relocation Study (CSRS) to inform relocation assistance.

All pertinent project information including contact information for key personnel is provided on the City of Elkhart's website <https://elkhartindiana.org/government/street-department/hively-overpass/> and city staff

continue to address local citizen inquiries. The City will also provide social media updates and continue to solicit public comments. The INDOT Fort Wayne District will also continue to support the project and provide social media updates and post pertinent information regarding the public hearing slated for early 2022.

Burdens & Benefits Summary

Burdens Summary

As with any proposed major infrastructure improvement, the community and, specifically, adjacent property owners and occupants will experience some degree of direct, indirect, and cumulative impacts. The No Build alternative also has impacts in that the existing condition and deficiencies within the community go unaddressed.

The burden of any of the build alternatives considered and the Preferred Alternative is that there are direct impacts associated with the right-of-way needed to construct and maintain the new bridge and roadway. Residential property impacts will require land acquisition and relocation assistance. Relocation may be difficult given the conditions of the current real estate market and availability of replacement housing. The acquisition and relocation program will be conducted in accordance with 49 CFR 24 of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended (Uniform Act). Relocation resources are available to all residential and business relocates without discrimination. No person displaced by this project will be required to move from a displaced dwelling unless comparable replacement housing is available to that person.

To further address this issue, a CSRS has been prepared. Affected owners, residents including renters, and businesses were offered the opportunity to meet with members of the project team in person, by phone, or via video call for a kitchen table meeting (KTM). The purpose of the meeting was to familiarize residents with the project and members of the project team, answer their questions, and address their concerns. Specific general observations from the KTM's are summarized as the following in the CSRS:

- Interactions with residents and businesses were very cordial and people were welcoming and inquisitive.
- Several residents expressed that they will be happy to move away from the high-traffic area and look forward to the day when they are no longer stopped at the railroad tracks.
- Attitudes regarding the project are generally positive. Only one resident spoke out against it, but admitted he is looking forward to a fresh start in a new home.
- Everyone interviewed is aware of and concerned about the fast-moving real estate market—whether they are looking for homes to purchase or rent, or a new business location.

The businesses being impacted include the Speedwash Laundromat, Hunter's Restaurant, Kentucky Fried Chicken, 7-11 gas station, all resources that are utilized by the community. There are also two new growing businesses, Pavel's Auto and Moreno's Roofing, that will be impacted. These businesses will most likely not be able to be relocated within the project vicinity. However, similar resources are located within the Area Network. The next nearest laundromat is approximately 2.2 miles away and there are convenient store/gas stations located north and west of the project.

Another burden includes a loss of direct access from Homer Avenue to Hively Avenue. The project will add a cul-de-sac at the north end of Homer Avenue.

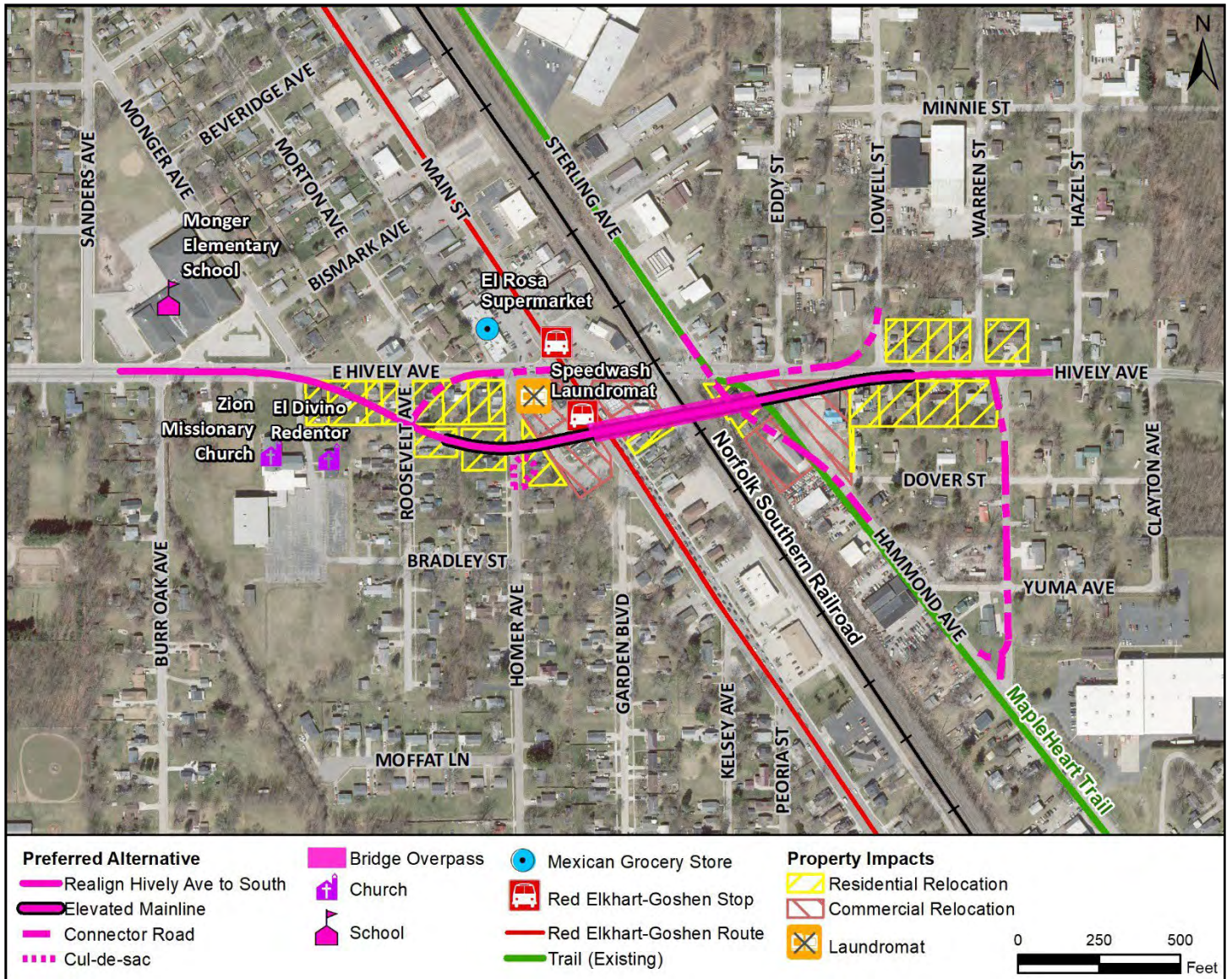
There will be temporary inconveniences during construction. The MOT plan will be split into phases, Phase 1, Phase 2, and Phase 3. Phase 1 will keep Hively Avenue open as construction begins south of Hively Avenue and closures will be required on intersecting side streets including Roosevelt Avenue, Homer Avenue, Hammond Avenue, and Warren Street. During this time a detour route will be provided utilizing SR 33 and CR 45. Phase 2 will require temporary closures on Monger Avenue, sections of Hively Avenue, Roosevelt Avenue, Warren Street and a detour route will be provided utilizing Pleasant Plain Avenue, SR 20, and CR 13. Phase 3 includes the permanent closure of the existing Hively Avenue alignment and railroad crossing and allows traffic onto the new Hively Avenue alignment.

A Type 1 noise analysis was conducted for the project as previously discussed on page 44. The analysis summary predicted 14 total impacts (14 NAC and zero substantial increase impacts). Additional analysis concluded that there were no noise barriers that met INDOT's criteria for "feasibility". Therefore, no barriers are proposed to be carried forward into final design and construction. All pertinent technical information on the Type 1 noise analysis is provided in Appendix I.

Detailed air quality analysis was not required because the project type is exempt under the Clean Air Act. However, the proposed project will likely result in an overall improvement to localized air quality because it removes the frequent congestion of vehicles idling waiting for trains, often several times a day.

The project is in an urban area with the appropriate utilities to manage stormwater and general water quality. These facilities will be further upgraded with the construction of the preferred alternative. Over an acre of greenspace is being added with the potential for more depending on right-of-way acquisition. Generally, this greenspace is expected to improve water quality in the immediate vicinity of the project. The City of Elkhart will continue to work within its boundaries to improve overall water quality and stormwater management with the project Study Area and beyond.

Figure 26. Preferred Alternative Burdens



Benefits Summary

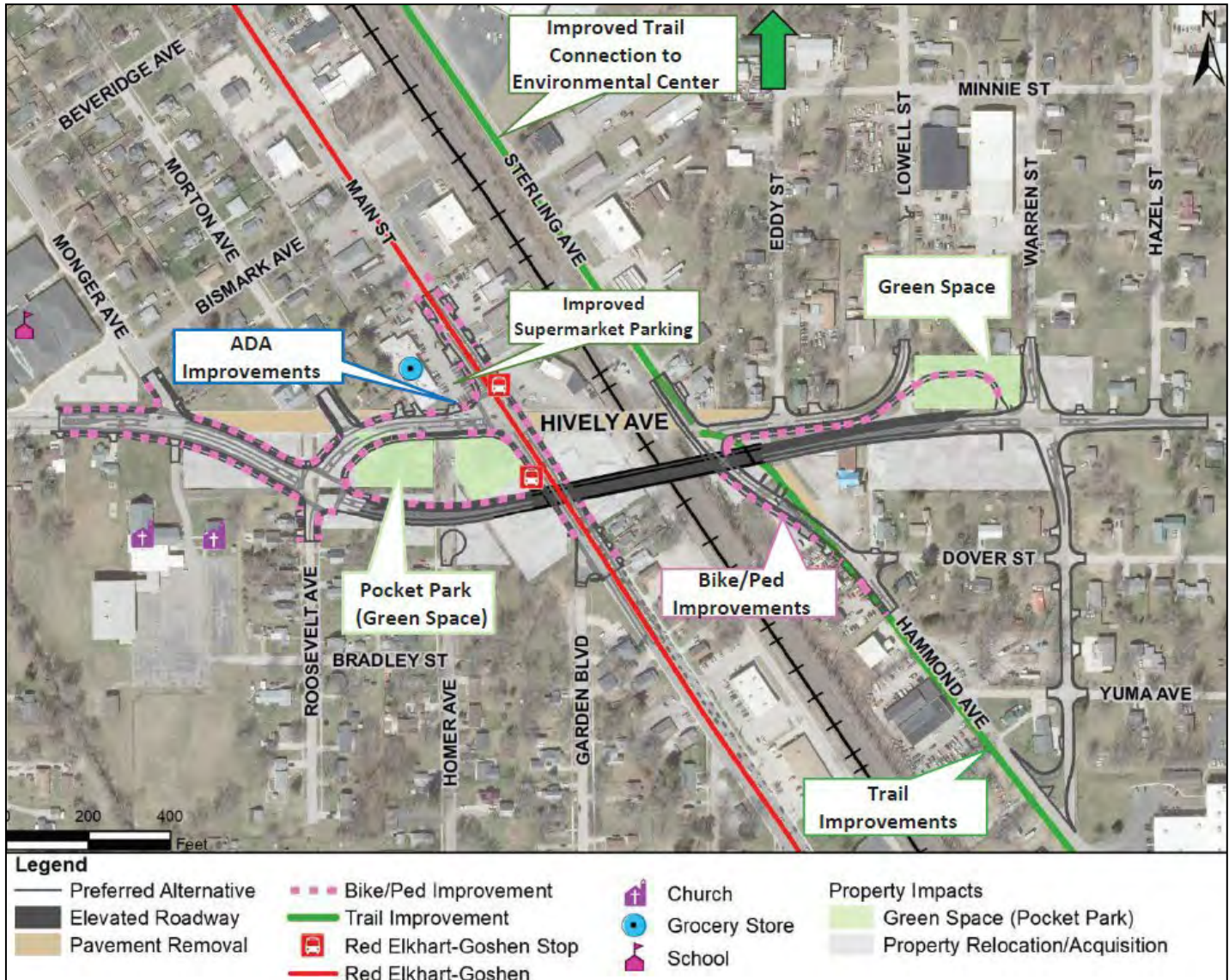
The project build alternatives, and, specifically, the Preferred Alternative has numerous benefits to the community. The construct of the overpass will alleviate the at-grade crossing of Hively Avenue and the Norfolk Southern Railroad tracks and allow vehicular traffic, bicycle and pedestrian movements and trains to move independent of one another. This will reduce congestion and improve mobility and overall travel reliability within the Study Area. The sidewalk network will be greatly improved (deficiencies are detailed on pages 33 and 34); new, connected, ADA compliant sidewalks along Hively Avenue and adjacent side streets, Main Street, Roosevelt Avenue, and Hammond Avenue allow a connection to Monger Elementary School, El Rosal supermarket, churches, residential and businesses; an overall benefit to the community. The sidewalk improvements in the vicinity of Monger Elementary are consistent with Safe Routes to School goals identified in local plans. The improved sidewalks also provide connectivity to the MapleHeart Trail which is lacking in the existing condition; this will also improve neighborhood connectivity to the Environmental Center. Pedestrian access to the transit stop will be improved with ADA compliant sidewalk and may be further enhanced by green space located between the mainline of the new roadway and bridge and the connection back to Hively on the westside. The main intersections in the vicinity of the project are very urban and have been impacted over time by various levels of improvement, removing trees, shrubs, and greenspace in the study area. Specifically, the intersection of Main and Hively is predominately asphalt and pavement; including the flag bus stop location which lacks any ADA access. The City of Elkhart expressed interest in adding green space and feedback from public during public information meetings was supportive of ‘greening’ the area.

The MOT of the preferred alternative keeps the existing Hively Avenue roadway open throughout most of the project construction and will only be closed for a few months during construction. The No Build provides no net benefit to the community. Table 12 and Figure 27.

Table 12. Benefits of No Build versus Preferred Alternative

Benefits	No Build	Preferred Alternative
Creates connectivity/mobility	X	✓
Eliminates traffic backups/congestion at Norfolk Southern RR crossing	X	✓
Creates sidewalk connection along Hively Avenue	X	✓
Creates a safe pedestrian crossing over the Norfolk Southern RR	X	✓
ADA compliant curb ramps and sidewalk	X	✓
Improved pedestrian facilities with clear crosswalk markings and lighting signals	X	✓
Connection to existing MapleHeart Trail and proposed extension	X	✓
Improved accessibility to bus flag stop locations	X	✓
Improved Elementary School 1 mile walk zone	X	✓

Figure 27. Project Benefits



Identify and Address Disproportionality High and Adverse Impacts

It is not the purpose of an EJ analysis to simply to determine whether a plan or project will have an adverse impact on an EJ community. The purpose is to explore whether the adverse effect is “disproportionately” high and adverse. An adverse effect becomes “disproportionate” when that effect

- 1) is predominantly borne by an EJ population, or
- 2) will be suffered by the EJ population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-EJ population.

Questions to consider when determining if disproportionately high and adverse human health or environmental impacts exist include:

- 1) Will the adverse effects on EJ populations exceed those borne by non-EJ populations?

- a. Adverse effects of the Preferred Alternative do exceed the adverse effects borne by non-EJ populations. The adverse effects to EJ populations are associated with the displacements and relocations of people and businesses, twenty-one (21) residential and six (6) commercial. However, the entire Study Area is comprised of EJ populations. Similarly, all build alternatives have comparable impacts and would also result in adverse effects. The No Build in its current condition would continue to have adverse effects to EJ populations associated with a lack of community cohesion. Therefore, neither the No Build or any of the build alternatives considered could avoid adverse effects.

The project does not have adverse effects associated with air, noise, water pollution, destruction of man-made and natural resources, aesthetic values, community cohesion, availability of public facilities and services, employment effects, tax and property value losses, and disruption of desirable community and regional growth.

- 2) Will cumulative or indirect effects adversely affect an EJ population?
 - a. The cumulative and indirect effects associated with the Preferred Alternative will adversely affect the EJ populations identified during the study. However, the project will provide an overall net-benefit to the community and to EJ populations in the vicinity of the improvements as discussed on page 49 and shown on Figure 27.
- 3) Will mitigation and enhancement measures be taken for EJ and non-EJ populations?
 - a. Yes, mitigation and enhancement measures will be implemented. The build alternatives, including the Preferred Alternative, were developed with an updated community context, existing conditions and deficiencies inventory and key constraints to incorporate avoidance and minimization measures into the design process. The Preferred Alternative includes the creation of dedicated green space (new pocket park), enhanced fully ADA compliant sidewalk including non-impacted sidewalk, wider sidewalk accommodations near Monger Elementary School, parking lot reconfiguration and improved access to El Rosal supermarket (Minority business), improved ADA compliant flag bus stop, and improved connectivity to the MapleHeart Trail. Additional detail is provided in the following Mitigation section.
- 4) Will there are off-setting benefits to EJ populations as compared to non-EJ populations?
 - a. Yes, there are off-setting benefits to EJ populations. Improved Emergency Services (EMS) access and response times (remove stop condition associated with train movements). Improved safety for all modes of transportation including vehicles, pedestrians, bicyclists, and those with disabilities. Improved micro air quality within the vicinity (reduced idling associated with traffic). Improved community connectivity and access to resources including the Elkhart Environmental Center, Monger Elementary, local businesses, green space and MapleHeart Trail. Improved commercial vehicle access and reliability. Emphasis on maintaining access to Hively Avenue during construction will reduce disruption to local minority business owners and EJ populations. Additional detail is provided in the following Off-set Benefit section.

Mitigation Measures

The Preferred Alternative implemented avoidance and minimization measures where possible. Since displacements and therefore an adverse effect were unavoidable, mitigation measures will be implemented for the project. The Preferred Alternative will implement the following mitigation measures:

- Creation of dedicated green space
 - A new pocket park will be created between the mainline of the new roadway and bridge and the connection back to Hively on the westside. The City of Elkhart has agreed to allow a public art installation in the pocket park and a bench that can be located near the updated ADA accessible flag bus stop.
 - A green space will be created between new sidewalk and Hively Avenue on the eastside of the project.
- Enhanced ADA compliant sidewalks/signals/crosswalks
 - The City of Elkhart has not officially adopted a Complete Streets Policy. The Preferred Alternative has provided complete ADA compliant sidewalk connections including updating sidewalk not impacted by the project. The Preferred Alternative includes crosswalks with ADA compliant pedestrian push buttons and signals. The improved sidewalk will connect to Monger Elementary School and is consistent with Safe Routes to School goals identified in local plans.
- Wider sidewalk near Monger Elementary School
 - The Preferred Alternative will provide 8-foot sidewalks within the vicinity of the school for maintenance and snow removal based on coordination with Elkhart Community Schools.
- Improved access and parking lot of El Rosal
 - The Preferred Alternative avoided relocating El Rosal, the local Hispanic supermarket (Minority business). El Rosal was previously relocated due to another transportation project in the past and avoiding and minimizing impacts to this resource was a key consideration from the beginning of the project. The Preferred Alternative will provide improved access and connection to El Rosal for both vehicles and pedestrians. In addition, El Rosal parking lot will be reconfigured in coordination with El Rosal to accommodate more parking spaces. These mitigation measures will benefit both the business and customers.
- Improved flag bus stop
 - Flag bus stop, Stop 43, will be relocated but still in the same vicinity of its current location on Main Street. The flag bus stop will now be more accessible for all users with ADA compliant sidewalk connection and connection to the newly created pocket park.
- Improved connectivity to MapleHeart Trail
 - The Preferred Alternative will provide sidewalk connection to the MapleHeart Trail. The MapleHeart Trail will also be improved by connection to the proposed trail improvements to the north and provide a safer crossing across Hively Avenue.

Off-set Benefits

The Preferred Alternative has many benefits that offset the adverse effects. The project provides benefits for those who remain within vicinity of the project community (EJ) and those traveling through (Non-EJ) the project area. The Preferred Alternative off-set benefits include the following:

- Improved EMS access and response times
 - The Preferred Alternative will remove the stop condition associated with train movements. This allows EMS to travel through the Study Area with less potential delays, improved access to community resources, and improved reliability.
- Improved safety
 - The Preferred Alternative removes crossing the railroad tracks at-grade and provides an improved facility for vehicles, pedestrians, and bicyclists to use.
- Improved air
 - Micro air quality will be improved within the vicinity of the project because the Preferred Alternative removes the stop condition which causes idling while waiting for trains.
- Improved connectivity and access
 - The Preferred Alternative will provide a continuous network. It will create connectivity to the Environmental Center and Monger Elementary School which provide educational programming, recreational opportunities, and improved access to the local supermarket.
- Improved aesthetics
 - The Preferred Alternative creates improved aesthetics with the addition of green space and local public art installation.
- Improved public health
 - The creation of connected sidewalks, improved crosswalks, MapleHeart Trail connection, and connection to other community resources promotes physical activity and improved public health for pedestrians and bicyclists. The reduction in idling and improved micro air quality also is a health benefit to the community.

Fair Participation

Since the Preferred Alternative does have adverse effects, it is important to ensure the project had full and fair participation by all potentially affected communities in the transportation decision-making process.

Public comment opportunities have been available throughout the project and will continue through the public hearing comment period. Public information materials and the City of Elkhart's project website have provided project specific information, exhibits, and contact information. The public, including EJ populations, can provide comments via phone, mail, or email. The project team keeps track of comments in an on-going comment response table included as part of the PIP document.

Under the Uniform Act, there can be eligibility for multiple relocations on a single parcel of land that is to be acquired (this can include owner-occupied, tenant-occupied residence, etc); therefore, the project has an

estimated total of 33 eligible relocations as further explained in the CSRS. Affected owners, residents including renters, and businesses were offered the opportunity to meet with members of the project team in person, by phone, or via video call for a KTM. The purpose of the meeting was to familiarize residents with the project and members of the project team, answer their questions, and address their concerns. KTM's have been conducted with 31 of 33 (94%) potential relocation parcels. One business (KFC) did not respond to the two owner contact letters that were mailed. Specific general observations from the KTM's are summarized as the following in the CSRS:

- Interactions with residents and businesses were very cordial and people were welcoming and inquisitive.
- Several residents expressed that they will be happy to move away from the high-traffic area and look forward to the day when they are no longer stopped at the railroad tracks.
- Attitudes regarding the project are generally positive. Only one resident spoke out against it, but admitted he is looking forward to a fresh start in a new home.
- Everyone interviewed is aware of and concerned about the fast-moving real estate market—whether they are looking for homes to purchase or rent, or a new business location.

In addition, the relocation assistance program provides renters the opportunity to become homeowners which is consistent with the goals of the Uniform Act. As provided in the CSRS, several renters in the project Study Area being impacted by displacement and relocation intend to use their relocation benefit package for the purpose of purchasing a home.

Conclusion

The Preferred Alternative has disproportionately high and adverse effects, in the form of displacements and relocations, but the Preferred Alternative has the least adverse effect and overall project impacts while providing the most benefit. All the build alternatives developed and considered have similar displacement impacts. However, the Preferred Alternative provided the most beneficial effects to the EJ population because it also allows Hively Avenue to remain open for most of the construction duration which avoids and minimizes travel impacts, delays, stress on adjacent business and allows for vehicular mobility during construction; this is not the case with other build alternatives considered. The No Build would leave the Study Area in its current condition continuing an existing burden to EJ populations due to the lack of connectivity of existing facilities and an unsafe crossing for pedestrians and bicyclists with the railroad. The No Build provides no net benefit to the community as a whole or EJ populations.

The Preferred Alternative provides mitigation measures including the creation of dedicated green spaces (including a new pocket park), enhanced fully ADA compliant sidewalk including non-impacted sidewalk, wider sidewalk accommodations near Monger Elementary School, parking lot reconfiguration and improved access to El Rosal supermarket (Minority business), improved ADA compliant flag bus stop, and improved connectivity to the MapleHeart Trail.

The Preferred Alternative also provides off-set benefits including improved EMS access and response times, improved safety for all modes of transportation including vehicles, pedestrians, bicyclists, and those with disabilities, improved micro air quality within the vicinity (reduced idling associated with traffic), improved community connectivity and access to resources including the Elkhart Environmental Center, Monger Elementary, local businesses, green space and MapleHeart Trail, improved aesthetics, improved public health, and improved commercial vehicle access and reliability.

Appendix K:

Additional Studies

Land and Water Conservation Fund (LWCF) County Property List for Indiana (Last Updated July 2020)

ProjectNumber	SubProjectCode	County	Property
1800054	1800054	Elkhart	Oxbow County Park
1800064	1800064	Elkhart	Stauffer Park, Derksen Park & McCormicks Creek G.C.
1800074	1800074	Elkhart	Oxbow County Park
1800099	1800099	Elkhart	Stauffer Park, Derksen Park & McCormicks Creek G.C.
1800257	1800257A	Elkhart	Elliott Park
1800257	1800257B	Elkhart	Lundquist Bicentennial Park
1800257	1800257C	Elkhart	Pinewood Park
1800283	1800283	Elkhart	High Dive Park
1800310	1800310	Elkhart	McNaughton Park
1800337	1800337	Elkhart	Stauffer Park, Derksen Park & McCormicks Creek G.C.
1800339	1800339	Elkhart	Shoup-Parsons Woods Park
1800340	1800340	Elkhart	Reith Park
1800354	1800354	Elkhart	Pierre Moran Park
1800441	1800441	Elkhart	High Dive Park
1800450	1800450	Elkhart	Stauffer Park, Derksen Park & McCormicks Creek G.C.
1800470	1800470	Elkhart	Studebaker Park
1800542	1800542	Elkhart	Boot Lake Nature Preserve
1800554	1800554	Elkhart	Cobus Creek County Park
1800628	1800628	Elkhart	Corson Riverwoods County Park
1800631	1800631	Elkhart	South Park

*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.



INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N758-ES
Indianapolis, Indiana 46204

PHONE: 1-855-463-6848

Eric Holcomb, Governor
Joe McGuinness, Commissioner

April 5, 2022

City of Elkhart
229 S 2nd Street
Elkhart, IN 46516

Subject: Section 4(f) Exception Temporary Occupancy for Hively Avenue Overpass Project (INDOT Des. No. 1801933) Official with Jurisdiction Concurrence

Dear City of Elkhart,

The purpose of this correspondence is to document that the official with jurisdiction (OWJ), which is the City of Elkhart, understands that the following proposed project will temporarily occupy a Section 4(f) resource under their jurisdiction and concurs with the assessment of impacts to the Section 4(f) resources.

The Federal Highway Administration (FHWA) and the Indiana Department of Transportation (INDOT) have a proposed Local TRAX project, Hively Avenue Overpass Project (INDOT Des. No. 1801933). The Hively Avenue Overpass Project is located on East (E) Hively Avenue, also referred to as Hively Avenue, at the Norfolk Southern Railroad crossing in Elkhart, Elkhart County, Indiana. The west terminus is 0.02 mile west of Burr Oak Avenue to approximately 0.60 mile to the east terminus at Clayton Avenue. The project limits extend on adjacent intersecting streets Bismark Avenue, Monger Avenue, Morton Avenue, Roosevelt Avenue, Homer Avenue, Main Street, Garden Boulevard, Sterling Avenue, Eddy Street, Hammond Avenue, Lowell Avenue, Warren Street, Hazel Street, and Clayton Avenue.

This project proposes eliminating the existing Norfolk Southern Railroad at-grade-crossing at Hively Avenue by creating a new grade separation (bridge) which will carry Hively Avenue over the Norfolk Southern Railroad, South Main Street and Hammond Avenue. The grade separation will raise Hively Avenue at a minimum of 23 feet vertical clearance over the railroad. Hively Avenue will be shifted to the south and modifications will be made to surrounding local streets to accommodate the new grade separation and provide connectivity. These side street modifications include realigning Hammond and Sterling Avenue, realigning Lowell Avenue, and extending Roosevelt Avenue to the north of Hively Avenue and creating an intersection with Main Street. Intersecting side streets will have pavement improvements and reconstructed drive approaches where necessary.

Sidewalk will be added on both sides of Hively Avenue near Bismark Avenue extending east to Roosevelt Avenue and sidewalk connection will be added on Monger Avenue, Morton Avenue, Roosevelt Avenue, and Main Street. A multi-use path will be added on the north side of Hively Avenue from Roosevelt Avenue to Warren Street. The multi-use path will then connect to Hammond Avenue and run along the west side of Hammond Avenue to connect to the existing MapleHeart Trail.

www.in.gov/dot/

An Equal Opportunity Employer

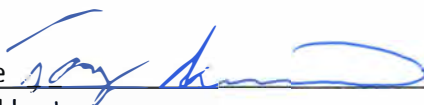
The MapleHeart Trail is a publicly owned recreation trail and is therefore classified as a Section 4(f) resource. The project will realign the trail along with the realignment of Hammond/Sterling Avenue. The project will improve overall network connectivity including improved connection to MapleHeart Trail.

Due to the use of federal funds, the proposed transportation project is subject to the requirements of Section 4(f) of the DOT Act of 1966, that prohibits the use of certain public and historic lands for federally funded transportation facilities unless there is no feasible and prudent alternative. The law applies to significant publicly owned parks, recreation areas, and wildlife/waterfowl refuges, and the National Register eligible or listed historic properties. The designed action for Des. No. 1801933 meets the exception under 23 CFR 774.13(d) which is temporary occupancies of land that are so minimal as to not constitute a use within the meaning of Section 4(f) where the following conditions must be satisfied:

- (1) Duration must be temporary, *i.e.*, less than the time needed for construction of the project, and there should be no change in ownership of the land;
- (2) Scope of the work must be minor, *i.e.*, both the nature and the magnitude of the changes to the Section 4(f) property are minimal;
- (3) There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis;
- (4) The land being used must be fully restored, *i.e.*, the property must be returned to a condition which is at least as good as that which existed prior to the project; and
- (5) There must be documented agreement of the official(s) with jurisdiction over the Section 4(f) resource regarding the above conditions.

The entire project will be constructed in three phases, Phase 1, Phase 2, and Phase 3. The construction of the realignment the MapleHeart Trail, due to the realignment of Hammond/Sterling Avenue, will occur in Phase 1 of the project and the trail is anticipated to be open in Phase 2 and Phase 3 of the project. A pedestrian detour route will be provided for each Phase of the project. The ownership of the MapleHeart Trail will remain under the jurisdiction of the City of Elkhart. No adverse physical impacts are anticipated, and the condition will be at least as good as that which existed prior to the project or better.

The City of Elkhart concurs with that the proposed project will enhance the Section 4(f) resource, MapleHeart Trail under 23 CFR 774.13(d).

Signature  _____
City of Elkhart

Date 4/5/22

APPENDIX D: Bridge/Structure Bat Assessment Form

Bridge/Structure Bat Assessment Form Instructions

- This form will be completed to document bat occupancy or bat use of bridges, culverts, and other structures. This form shall be submitted to the appropriate personnel within the DOT and USFWS for recordkeeping (or uploaded into the Information, Planning, and Consultation (IPaC) Determination Key for use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat) prior to conducting: any activities below the deck surface either from the underside or from above the deck surface that bore down to the underside; any activities that could impact expansion joints; any activities involving deck removal on bridges; or any activities involving structure demolition for bridges, culverts, and/or other structures.
- Assessments must be completed within two (2) years of conducting any work (see the above bullet), regardless of whether assessments have been conducted in the past. Assessments must be completed in appropriate weather conditions, suitable for the assessor to observe common signs of bat use.
- Evidence of bat use may include visual observation (live and/or dead), presence of guano, presence of staining, audible observation, and/or odor observation. Presence of one or more indicators is sufficient evidence that bats may be using the bridge, culvert, and/or other structure.
- If bat use of a bridge, culvert, and/or other structure is noted, additional studies may be undertaken during bat active season to identify the specific bat species utilizing the structure, or protected bat species presence can be assumed, in order to comply with threatened and endangered species regulations. Bat active season dates, typically between April and November, vary regionally and by species, so assessors should consult with their local USFWS Field Office for more specific active season dates.
- For use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat – If the bridge/structure is 1,000 feet or more from suitable bat habitat¹ (e.g., an urban or agricultural area without suitable foraging habitat or corridors linking the bridge to suitable foraging habitat), check the appropriate box and fill out the table below. **No further assessment is required.**








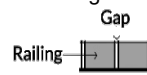

Date & Time of Assessment	DOT Project #	Route/Facility Carried	County
Federal Structure ID	Structure Coordinates (latitude and longitude)	<input type="checkbox"/> This bridge/structure is 1,000 feet or more from suitable bat habitat ² Name: _____ Signature: <u>Laura Jack</u>	

- Any questions pertaining to assessments or this form should be directed to the local USFWS Field Office.

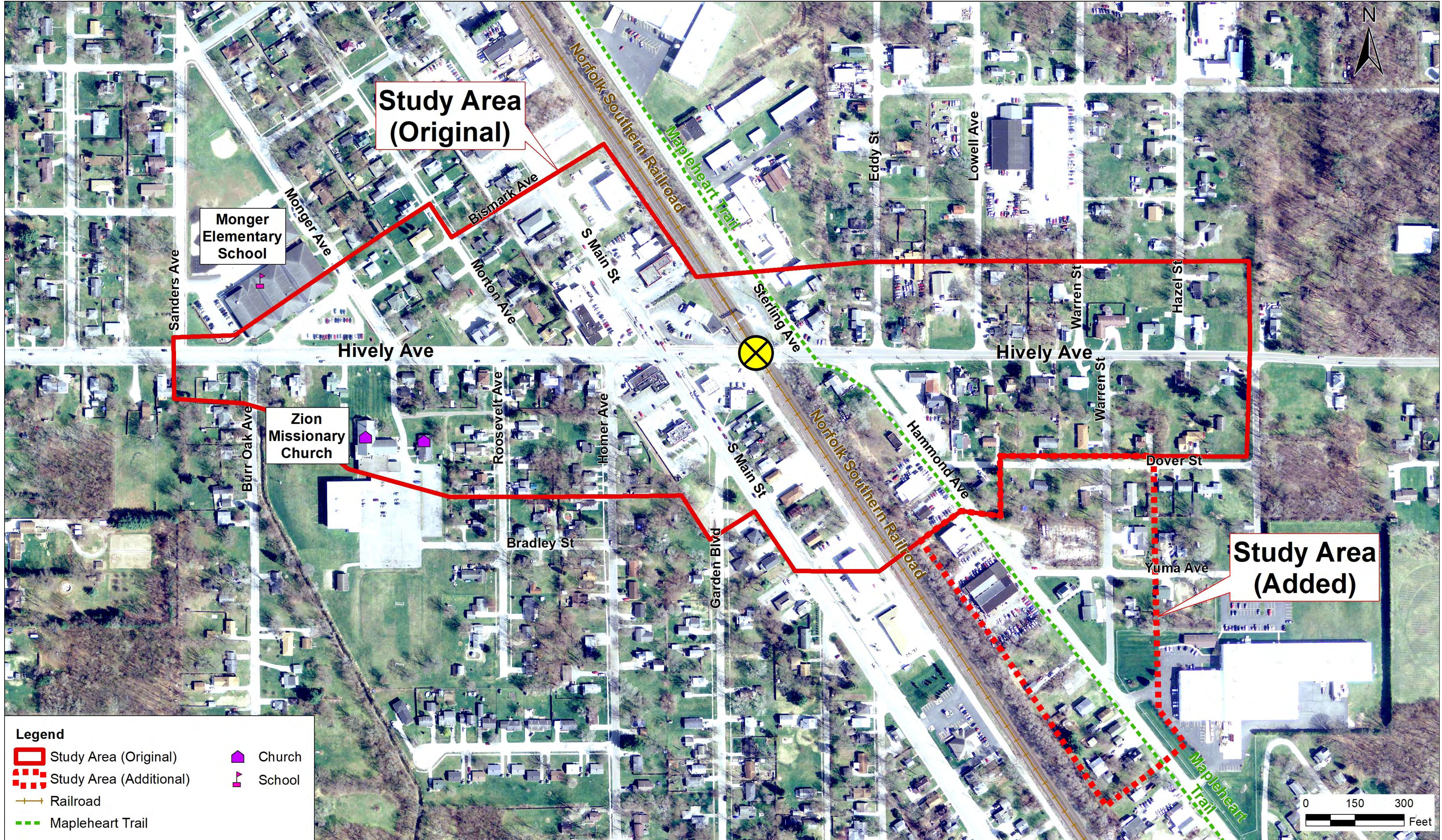
¹ Refer to the USFWS's summer survey guidance for the definition of suitable habitat (<http://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html>).

² This condition is only for use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat

Bridge/Structure Bat Assessment Form

Date & Time of Assessment	DOT Project Number	Route/Facility Carried	County
Federal Structure ID	Structure Coordinates (latitude and longitude)	Structure Height (approximate)	Structure Length
Structure Type (check one)		Structure Material (check all that apply)	
<i>Bridge Construction Style</i>		<i>Deck Material</i>	<i>Beam Material</i> <i>End/Back Wall Material</i>
<input type="checkbox"/> Cast-in-place 	<input type="checkbox"/> Pre-stressed Girder 	<input type="checkbox"/> Metal	<input type="checkbox"/> None <input type="checkbox"/> Concrete
<input type="checkbox"/> Flat Slab/Box 	<input type="checkbox"/> Steel I-beam 	<input type="checkbox"/> Concrete	<input type="checkbox"/> Concrete <input type="checkbox"/> Timber
<input type="checkbox"/> Truss 	<input type="checkbox"/> Covered 	<input type="checkbox"/> Timber	<input type="checkbox"/> Steel <input type="checkbox"/> Stone/Masonry
<input type="checkbox"/> Parallel Box Beam 	<input type="checkbox"/> Other:	<input type="checkbox"/> Open grid	<input type="checkbox"/> Timber <input type="checkbox"/> Other:
<i>Culvert Type</i>		<i>Culvert Material</i>	
<input type="checkbox"/> Box	<i>Other Structure</i>	<input type="checkbox"/> Metal	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Pipe/Round		<input type="checkbox"/> Concrete	<input type="checkbox"/> Unknown
<input type="checkbox"/> Other:		<input type="checkbox"/> Plastic	<i>Notes:</i>
		<input type="checkbox"/> Stone/Masonry	
Crossings Traversed (check all that apply)		Surrounding Habitat (check all that apply)	
<input type="checkbox"/> Bare ground	<input type="checkbox"/> Open vegetation	<input type="checkbox"/> Agricultural	<input type="checkbox"/> Grassland
<input type="checkbox"/> Rip-rap	<input type="checkbox"/> Closed vegetation	<input type="checkbox"/> Commercial	<input type="checkbox"/> Ranching
<input type="checkbox"/> Flowing water	<input type="checkbox"/> Railroad	<input type="checkbox"/> Residential-urban	<input type="checkbox"/> Riparian/wetland
<input type="checkbox"/> Standing water	<input type="checkbox"/> Road/trail - Type:	<input type="checkbox"/> Residential-rural	<input type="checkbox"/> Mixed use
<input type="checkbox"/> Seasonal water	<input type="checkbox"/> Other:	<input type="checkbox"/> Woodland/forested	<input type="checkbox"/> Other:
Areas Assessed (check all that apply)			
Check all areas that apply. If an area is not present in the structure, check the "not present" box.			
Document all bat indicators observed during the assessment. Include the species present, if known, and provide photo documentation as indicated.			
Area (check if assessed)	Assessment Notes	Evidence of Bats (include photos if present)	
<input type="checkbox"/> All crevices and cracks: Bridges/culverts: rough surfaces or imperfections in concrete Other structures: soffits, rafters, attic areas	<input type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species <input type="checkbox"/> Odor <input type="checkbox"/> Photos <input type="checkbox"/> Staining
<input type="checkbox"/> Concrete surfaces (open roosting on concrete)	<input type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species <input type="checkbox"/> Odor <input type="checkbox"/> Photos <input type="checkbox"/> Staining
<input type="checkbox"/> Spaces between concrete end walls and the bridge deck	<input type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species <input type="checkbox"/> Odor <input type="checkbox"/> Photos <input type="checkbox"/> Staining
<input type="checkbox"/> Crack between concrete railings on top of the bridge deck 	<input type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species <input type="checkbox"/> Odor <input type="checkbox"/> Photos <input type="checkbox"/> Staining
<input type="checkbox"/> Vertical surfaces on concrete I-beams	<input type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species <input type="checkbox"/> Odor <input type="checkbox"/> Photos <input type="checkbox"/> Staining
<input type="checkbox"/> Spaces between walls, ceiling joists	<input type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species <input type="checkbox"/> Odor <input type="checkbox"/> Photos <input type="checkbox"/> Staining
<input type="checkbox"/> Weep holes, scupper drains, and inlets/pipes	<input type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species <input type="checkbox"/> Odor <input type="checkbox"/> Photos <input type="checkbox"/> Staining
<input type="checkbox"/> All guiderails	<input type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species <input type="checkbox"/> Odor <input type="checkbox"/> Photos <input type="checkbox"/> Staining
<input type="checkbox"/> All expansion joints	<input type="checkbox"/> Not present	<input type="checkbox"/> Visual - live # dead #	<input type="checkbox"/> Audible <input type="checkbox"/> Species <input type="checkbox"/> Odor <input type="checkbox"/> Photos <input type="checkbox"/> Staining
Name:		Signature: 	

STUDY AREA



From: Papadakis, Arianna <APapadakis@indot.IN.gov>

Sent: Monday, November 1, 2021 3:09 PM

To: Novak, Karen <KNovak@indot.IN.gov>; Pusti, Mary <Mary.Pusti@mbakerintl.com>

Subject: EXTERNAL: RE: INDOT Roadway Realignment of Hively Avenue, Des. No.1801933 Elkhart, Indiana

Hello,

A review of the USFWS database did not indicate the presence of endangered bat species in or within 0.5 mile of the project area(s). The range-wide programmatic consultation for the Indiana Bat and Northern Long-eared Bat shall be completed according to the most recent "Using the USFWS's IPaC System for Listed Bat Consultation for INDOT Projects".

Thanks,

Arianna Papadakis

Environmental Manager II

Fort Wayne District

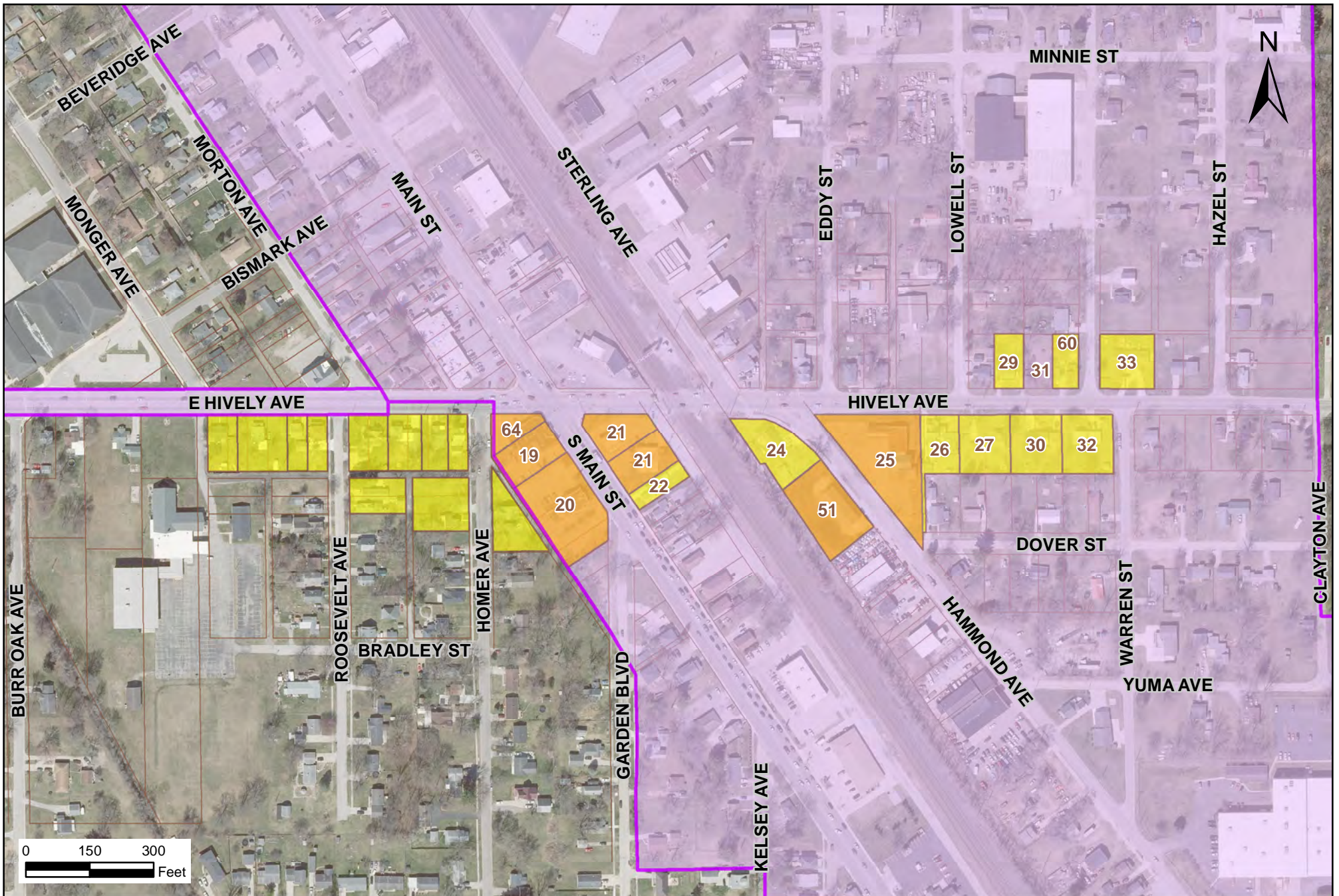
5333 Hatfield Road

Fort Wayne, IN 46808

Phone: (260) 969-8262

Email: APapadakis@indot.in.gov





Legend

- Consolidated TIF 2013
- Property Line

- Preliminary Property Impact**
- Residential Relocation
 - Commercial Relocation
 - Residential Acquisition

**Hively Ave Overpass
Consolidated TIF District**

**Hively Avenue Overpass Project
Preferred Alternative Property Relocations and Acquisitions
Within Consolidated TIF District**

Map Parcel ID	# Parcels	Parcel ID	Type of Impact	Landuse	Property Address	Property Owner	Relocation or Acquisition	Accessed Value*	Total Tax 2022*	Residential		Commercial		Other	
										Permanent R/W	Temporary R/W	Permanent R/W	Temporary R/W	Permanent R/W	Temporary R/W
19	1	20-06-16-432-002.000-012	Commercial Relocation	Commercial	2703 S MAIN ST	Francis E. Hunter	Relocation	\$147,900	\$5,138			0.315			
20	4	20-06-16-432-003.000-012 20-06-16-432-004.000-012 20-06-16-432-005.000-012 20-06-16-432-006.000-012	Commercial Relocation	Commercial	2709 S MAIN ST	Champ 84 Enterprises, LLC	Relocation	\$211,600	\$7,350			0.761			
21	3	20-06-16-428-002.000-012 20-06-16-428-003.000-012 20-06-16-428-004.000-012	Commercial Relocation	Commercial	2700 S MAIN ST	The Southland Corporation	Relocation	\$176,900	\$6,146			0.579			
22	1	20-06-16-428-005.000-012	Residential Relocation	Residential	2722 S MAIN ST	Magdaleno G. & Margaret R. Reyes	Relocation	\$49,500	\$553	0.146					
24	1	20-06-15-303-001.000-012	Residential Relocation	Residential	1605 E HIVELY	Rodolfo Castillo & Marilu Novoa	Relocation	\$76,500	\$2,658	0.397					
25	1	20-06-15-301-001.000-012	Commercial Relocation	Commercial	2700 HAMMOND AVE	World Business Lenders, LLC	Relocation	\$190,200	\$6,608			1.115			
26	2	20-06-15-301-002.000-012 20-06-15-301-003.000-012	Residential Relocation	Residential	1801 E HIVELY	Anthony R. & Pamela Moore	Relocation	\$83,800	\$962	0.315					
27	2	20-06-15-301-004.000-012 20-06-15-301-005.000-012	Residential Relocation	Residential	1815 E HIVELY	Dorothy J. Spaugh Revocable	Relocation	\$54,700	\$1,900	0.384					
28	1	20-06-15-158-020.000-012	Residential Relocation	Residential	1802 E HIVELY	David Urrutia Alvarado	Relocation	\$55,600	\$1,144	0.177					
29	1	20-06-15-158-021.000-012	Residential Relocation (Landlocked)	Residential	1806 E HIVELY	Harvest Homes, LLP	Relocation	\$18,000	\$625	0.202					
30	1	20-06-15-301-007.000-012	Residential Relocation (Landlocked)	Residential	1823 E HIVELY	Leroy & Euba A. Robinson	Relocation	\$135,500	\$1,463	0.385					
31	1	20-06-15-158-022.000-012	Residential Acquisition (Landlocked)	Residential	1812 E HIVELY	Glenn Devlyn Henderson	Acquisition	\$3,400	\$118	0.202					
32	1	20-06-15-301-008.000-012	Residential Relocation	Residential	1833 E HIVELY	Jason Ragsdale	Relocation	\$110,500	\$1,406	0.387					
33	1	20-06-15-159-021.000-012	Residential Relocation	Residential	1904 E HIVELY	Ernest C. Kyle	Relocation	\$180,300	\$2,517	0.378					
51	1	20-06-15-303-002.000-012	Commercial Relocation	Commercial	2729 HAMMOND AVE	Pavel & Galina Kabardin	Relocation	\$135,600	\$4,711			0.560			
60	1	20-06-15-158-023.000-012	Residential Relocation	Residential	1818 E HIVELY	Rivera Manuel	Relocation	\$77,700	\$648	0.178					
64	1	20-06-16-432-001.000-012	Commercial Relocation	Commercial	2701 S MAIN ST	Marlin & Lois Martin	Relocation	\$107,200	\$3,724			0.172			
TOTALS								\$1,814,900	\$47,671	3.15	0.00	3.50	0.00	0.00	0.00

From: Fann, Adam <Adam.Fann@coei.org>
Sent: Wednesday, April 13, 2022 2:01 PM
To: Vachet, Wendy <Wendy.Vachet@mbakerintl.com>
Subject: EXTERNAL: CON TIF economic impact

Wendy,

Here's a few bullet points;

- Project has long term positive impact for both residential and commercial uses in that it reduces congestion and traffic backup in this corridor.
- The loss of residential parcels with respect to their contribution to TIF increment will be negligible.
- Local commercial businesses that are displaced have ample opportunities to relocate within the corridor.
- The short term disruption of traffic flow is manageable and not deemed to be an impediment to economic development.

The CON TIF has 2,796 parcels the "total revenues of this TIF" is \$1,901,230.

Let me know if you need anything else

Thanks

Adam Fann
TIF Infrastructure Project Supervisor
City of Elkhart
229 South Second Street
Elkhart, IN 46516-3112
phone: (574) 294-5471, ext. 1019
fax: (574) 970-1165