HESSVILLE BRIDGE SURVEY

Response due by Tuesday, December 7, 2021

Dear Hessville Resident:

The City of Hammond seeks your input on a new bridge project in Hessville. Enclosed please find a survey card that you can mail in or a link so that you can complete the survey online.

Since being elected your mayor 18 years ago, there is one constant complaint I have heard from residents in Hessville— "Mayor, what can you do about the trains?" I know that trains are a daily part of life in Hessville and as your mayor I have been committed to trying to find a solution to an over 100-year-old problem in this part of our city.

In the past, I have attempted various measures to combat trains blocking our streets:

- I encouraged our police department to ticket trains whenever they blocked our intersections. This had various success over the years, but a few years back the Indiana Supreme Court sided with the railroads stating that local ordinances are "pre-empted" by federal law and cannot be enforced against the railroads.

- As Chairman of our regional planning commission (NIRPC) I commissioned a panel to engage our federal partners, including our then Congressman, to push legislation at the federal level to combat this issue that plagues cities like ours throughout the country. Although we had several very good meetings and brought attention to the issue, this attempt never got past the discussion phase.

- One of our police officers, who is also a Hessville resident, met with the Federal Railroad Administration (FRA), who brought the railroads to the table to address our concerns. This initiative resulted in several online video meetings with representatives of the FRA and the various railroads and has resulted in changes that have alleviated some of the stopped trains.

All these attempts, however, will not solve the issue of how our residents physically get around a blocked crossing. Recently, the city was awarded a Local Trax grant in which the State of Indiana will partner with the city and the railroad to pay for the construction of a bridge that significantly reduces blocked crossings in Hessville by eliminating the on-the-street crossing at Parrish Avenue. The bridge will cost over $11 million dollars (the city portion is $3.5 million) and will be a permanent solution to an age-old problem.

Recently, there has been some push back by people who believe that building the bridge will impact an environmentally sensitive area. The State of Indiana Department of Natural Resources and the Indiana Department of Transportation have signed off on the location of the bridge and confirmed that there are no designated environmental areas where the bridge is planned. Although there will be several hundred trees cut down and natural habitats disturbed, **we have committed to replanting two trees for every one removed.** I recognize the concerns raised by these residents, however, I believe the greater good is served by building the bridge.

The city values input from its residents. Therefore, the city has enclosed a survey for your review that will let the city know your opinions about building a bridge to help alleviate blocked intersections in Hessville.

Please visit gohammond.com/survey or mail the attached prepaid post card so that your voice can be heard. We do need the surveys back by **December 7, 2021** so that we can announce the results at Mayor's Night Out the next evening. Each address bordered approximately by Kennedy Avenue to the west, 165th to the north, 80/94 to the south, and Grand Ave. to the East is receiving a survey.

Thank you for participating in your city government.

Very Truly Yours,

Thomas M. McDermott, Jr., Mayor

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CITY OF HAMMOND
5925 CALUMET AVE STE 232
HAMMOND IN 46320-9900

Please complete this survey online at
gohammond.com/survey
or fill out the attached prepaid post card on the other side

1. How often are you impacted by a stopped train in Hessville?

❑ Never ❑ Monthly ❑ Weekly ❑ Daily

❑ More than once a day

2. How strongly do you believe that stopped trains in Hessville are an issue that you would like your city government to address and solve?

❑ Very Strong ❑ Somewhat Strong ❑ Neutral

❑ Not That Strong ❑ Not Strong at all

3. Are you in favor of the city partnering with the State of Indiana and the railroad companies to build a bridge to help eliminate on-the-street crossings and to help solve trains blocking intersections in Hessville?

❑ Yes ❑ No

4. How strongly are you in favor of the bridge being built?

❑ Very Strongly in Favor ❑ Somewhat in Favor

❑ Neutral ❑ Not that much in Favor

❑ Not at all in Favor

5. The proposed pathway to the bridge is through the undisturbed, wooded area sometimes referred to as Briar East Woods that will result in hundreds of trees being cut down and habitat disturbed. Knowing this, how strongly are you in favor of the bridge being built?

❑ Very Strongly in Favor

❑ Somewhat in Favor ❑ Neutral

❑ Not that much in Favor ❑ Not at all in Favor

6. Do you believe that building the bridge is a good investment by the city and that it will positively impact the quality of life in Hessville?

❑ Yes ❑ No

7. If you would like to provide your address please do so here (Optional)

_____

Please complete this survey online at

gohammond.com/survey

using the code below or fill out the attached prepaid post card

ANONYMOUS CODE: 541784

Response due by 12/07/21

The City of Hammond
5925 Calumet Ave
Hammond, IN 46320

PRSRT STD
ECRWSS
U.S. POSTAGE
PAID
EDDM RETAIL

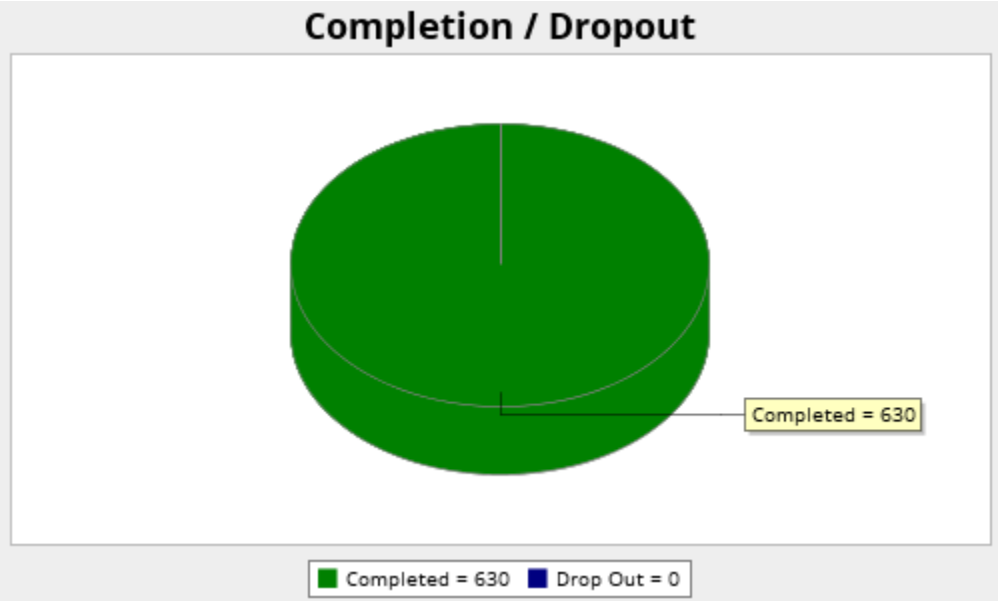
Local
Postal Customer

2021 Hessville Bridge Survey

My Dashboard

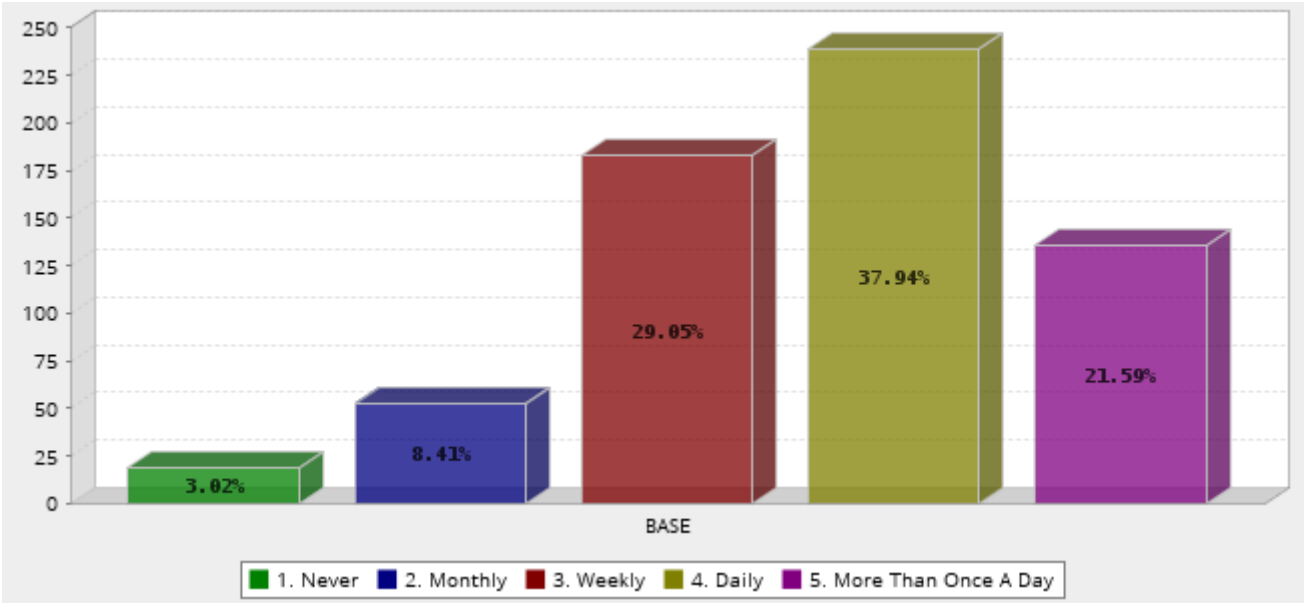
socialmedia@gohammond.com

Survey Overview



Viewed	Started	Completed	Completion Rate	Drop Outs (After Starting)	Average Time to Complete Survey
643	**630**	**630**	**100%**	**0**	**59 seconds**

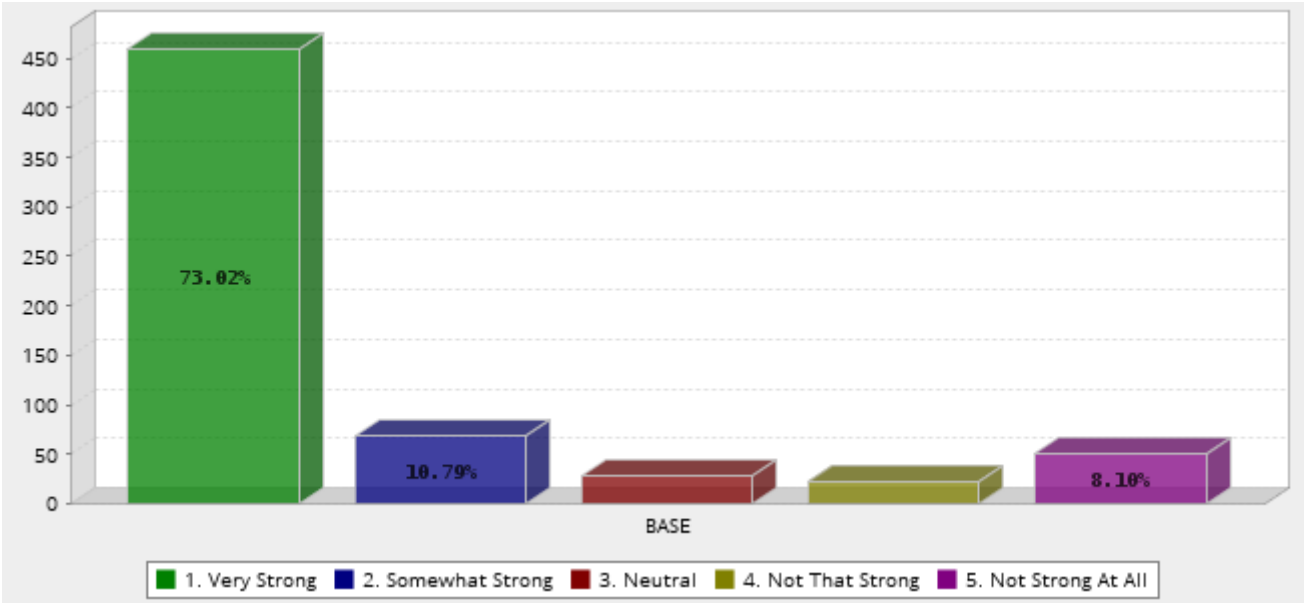
Q1. How often are you impacted by a stopped train in Hessville?



	Answer	Count	Percent
1.	Never	19	3.02%
2.	Monthly	53	8.41%
3.	Weekly	183	29.05%
4.	Daily	239	37.94%
5.	More Than Once A Day	136	21.59%
	Total	630	100%

Mean : **3.667**	Confidence Interval @ 95% : **[3.588 - 3.745]**	Standard Deviation : **1.002**	Standard Error : **0.040**

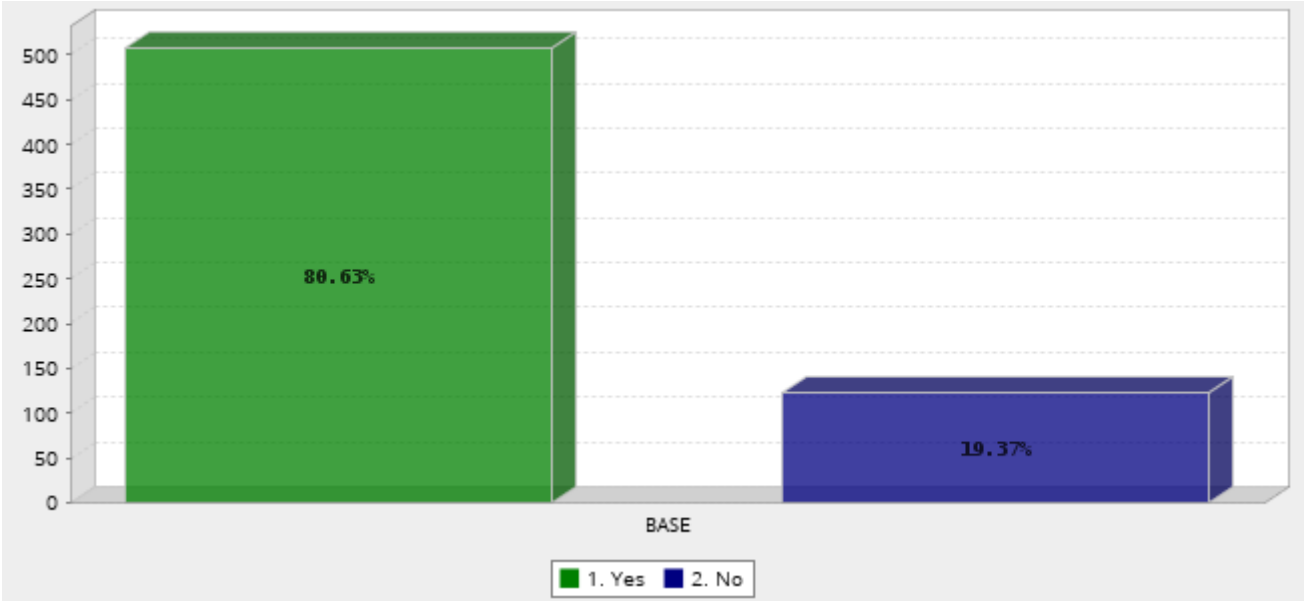
Q2. How strongly do you believe that stopped trains in Hessville are an issue that you would like your city government to address and solve?



	Answer	Count	Percent
1.	Very Strong	460	73.02%
2.	Somewhat Strong	68	10.79%
3.	Neutral	28	4.44%
4.	Not That Strong	23	3.65%
5.	Not Strong At All	51	8.10%
	Total	630	100%

Mean : **1.630**	Confidence Interval @ 95% : **[1.534 - 1.726]**	Standard Deviation : **1.231**	Standard Error : **0.049**

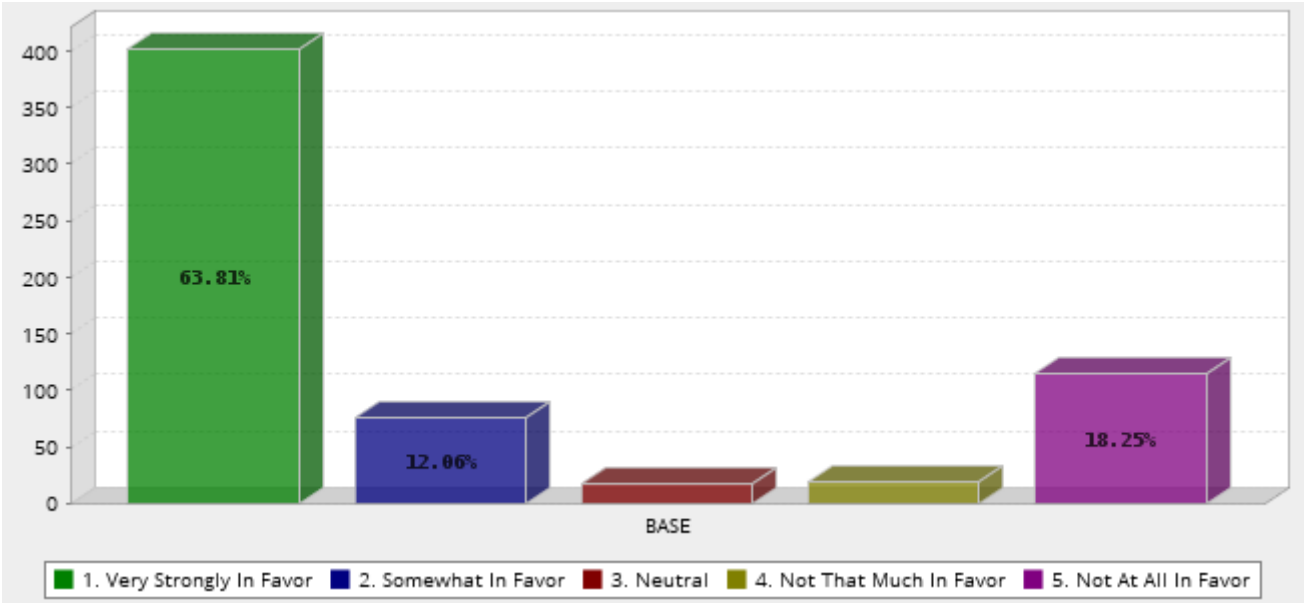
Q3. Are you in favor of the city partnering with the State of Indiana and the railroad companies to build a bridge to help eliminate on-the-street crossings and to help solve trains blocking intersections in Hessville?



	Answer	Count	Percent
1.	Yes	508	80.63%
2.	No	122	19.37%
	Total	630	100%

Mean : **1.194**	Confidence Interval @ 95% : **[1.163 - 1.225]**	Standard Deviation : **0.395**	Standard Error : **0.016**

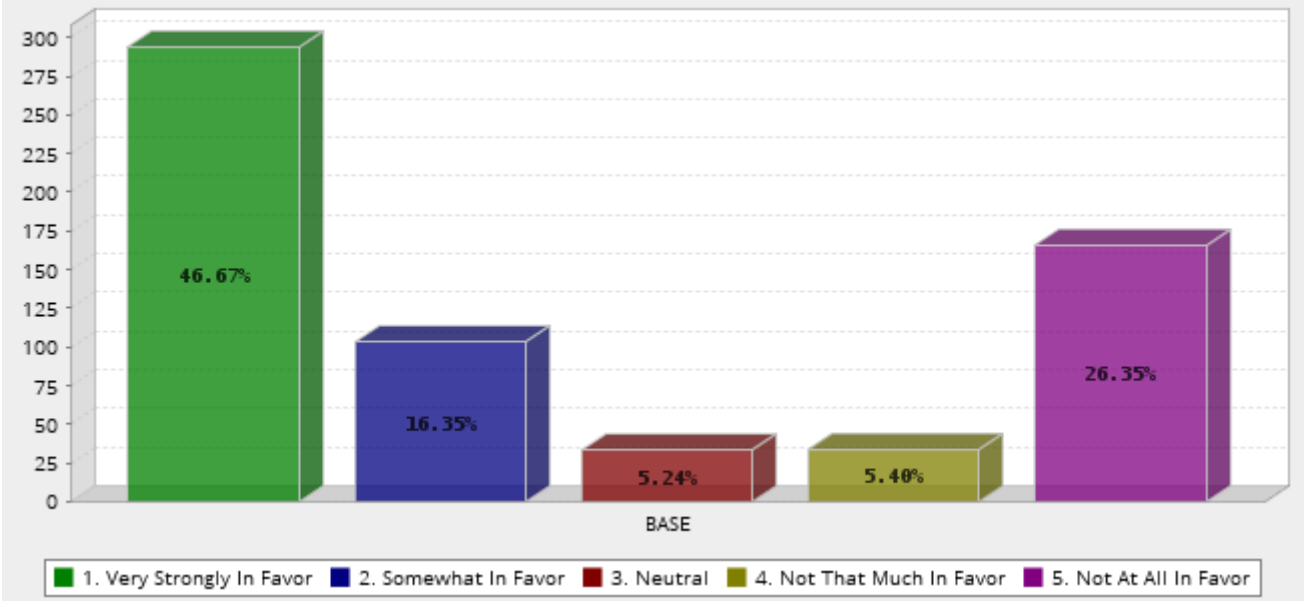
Q4. How strongly are you in favor of the bridge being built?



	Answer	Count	Percent
1.	Very Strongly In Favor	402	63.81%
2.	Somewhat In Favor	76	12.06%
3.	Neutral	18	2.86%
4.	Not That Much In Favor	19	3.02%
5.	Not At All In Favor	115	18.25%
	Total	630	100%

Mean : **1.998**	Confidence Interval @ 95% : **[1.877 - 2.120]**	Standard Deviation : **1.560**	Standard Error : **0.062**

Q5-C7. The proposed pathway to the bridge is through the undisturbed, wooded area sometimes referred to as Briar East Woods that will result in hundreds of trees being cut down and habitat disturbed. Knowing this, how strongly are you in favor of the bridge being built?

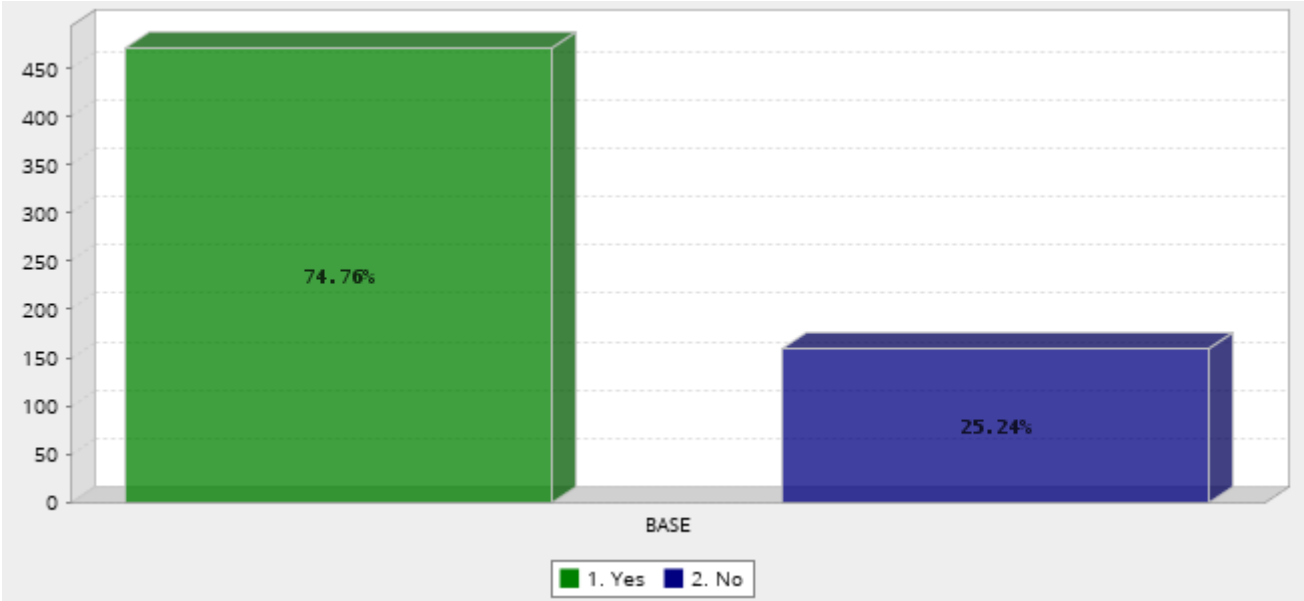


	Answer	Count	Percent
1.	Very Strongly In Favor	294	46.67%
2.	Somewhat In Favor	103	16.35%
3.	Neutral	33	5.24%

4.	Not That Much In Favor	34	5.40%
5.	Not At All In Favor	166	26.35%
	Total	630	100%

Mean : **2.484**	Confidence Interval @ 95% : **[2.352 - 2.617]**	Standard Deviation : **1.696**	Standard Error : **0.068**

Q6-C7-C8. Do you believe that building the bridge is a good investment by the city and that it will positively impact the quality of life in Hessville?



	Answer	Count	Percent
1.	Yes	471	74.76%
2.	No	159	25.24%
	Total	630	100%

Mean : **1.252**	Confidence Interval @ 95% : **[1.218 - 1.286]**	Standard Deviation : **0.435**	Standard Error : **0.017**

Hammond Local TRAX Project Governors Parkway CE Level 4

APPENDIX H: AIR QUALITY

INDOT

TIP ID	WORK TYPE	PROJECT TITLE	LEAD AGENCY	FED FUND	FED	STATE	LOC	PE	RW	CN	CE	2022	2023	2024	2025	2026	TOTAL YEAR	AQ Exempt
1900833	Bridge over Norfolk Southern Local TRAXX	New Bridge, 800 feet E of Parrish, 600 feet N of 173rd in Hammond	INDOT		$0	$3,787,432	$518,760	$1,848,192	$0	$2,358,000	$100,000	$0	$0	$2,458,000	$0	$0	$4,306,192	Exempt
2002545	New Bridge Tipton / Park Street over RR crossing.	New bridge over RR crossing Between State St and Furnace St.in La Porte	INDOT		$0	$369,600	$77,800	$0	$0	$389,000	$58,400	$0	$447,400	$0	$0	$0	$447,400	Exempt
1801912	New Bridge Tipton / Park Street over RR crossing.	New bridge over RR crossing Between State St and Furnace St.in La Porte	INDOT		$0	$6,191,832	$993,000	$914,832	$656,000	$4,885,000	$729,000	$0	$6,270,000	$0	$0	$0	$7,184,832	Exempt
1801906	Colorado Street bridge over RR crossing	New Bridge, Colorado Street over CN/ Grand Trunk and Western railroads in Hobart	INDOT		$0	$7,334,939	$2,052,236	$912,300	$115,000	$7,485,875	$874,000	$235,000	$8,264,875	$0	$0	$0	$9,387,175	Exempt
1801911	Bridge over Canadian National	New Bridge, Bridge over Canadian National and Norfolk Southern railways, Kennedy Ave between Division St & Scherland Dr in Schererville	INDOT		$0	$7,565,775	$2,304,375	$1,137,500	$1,021,250	$6,660,000	$1,051,400	$1,021,250	$0	$7,711,400	$0	$0	$9,870,150	Exempt
1801907	Bridge over Norfolk Southern	New Bridge, 800 feet E of Parrish, 600 feet N of 173rd in Hammond	INDOT		$0	$5,008,130	$6,547,170	$887,300	$463,000	$9,705,000	$500,000	$463,000	$0	$10,205,000	$0	$0	$11,555,300	Exempt
1900832	Local Trax, New Bridge Construction	New Bridge, Colorado Street over Canadian National Railroad	INDOT		$0	$6,253,200	$1,968,300	$0	$115,000	$7,175,000	$931,500	$115,000	$8,106,500	$0	$0	$0	$8,221,500	Exempt
1592882	District Small Structure Project	Other Type Project (Miscellaneous), I-80/94 Small Culvert Video Investigation, Lining or Repair, From MI to IL	INDOT		$0	$15,000,000	$0	$0	$0	$15,000,000	$0	$0	$15,000,000	$0	$0	$0	$15,000,000	Exempt
1802826	Statewide on-call consultant contract	Other Type Project (Miscellaneous), Statewide on-call consultant contract	INDOT		$0	$8,400,000	$0	$8,400,000	$0	$0	$0	$2,100,000	$2,100,000	$0	$0	$0	$8,400,000	Exempt

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

Madison County Council of Governments (MCCOG) FY 2022-2026
- *Version 7/13/2021*

Northeastern Indiana Regional Coordinating Council (NIRCC) FY 2022-2026
- *Version 3/28/2022*

Northwestern Indiana Regional Planning Commission (NIRPC) FY 2022-2026
- *Version 3/17/2022*

Ohio-Kentucky-Indiana Regional Council of Governments (OKI) FY 2020-2023
- *Version 03/10/2022*

Terre Haute Area Metropolitan Planning Organization (THAMPO) FY 2020-2024
- *Version 08/26/2021*

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
Larry Buckel, INDOT
Jay Mitchell, INDOT
Jason Casteel, INDOT
Michael McNeil, INDOT

Federal Transit Administration
Region V
200 West Adams St., Suite 320
Chicago, IL 60606-5253

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 10:08:34 -05'00'

Kelley Brookins
Regional Administrator
FTA Region V

Sincerely,

JERMAINE R HANNON Digitally signed by JERMAINE R HANNON Date: 2022.06.13 15:57:46 -04'00'

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.

Hammond Local TRAX Project Governors Parkway CE Level 4

APPENDIX I: NOISE

NOISE ANALYSIS REPORT

PARRISH AVENUE BRIDGE OVER NORFOLK SOUTHERN RAILWAY

DES. NO. 1801907
HAMMOND, LAKE COUNTY, INDIANA

PREPARED FOR:

INDIANA DEPARTMENT OF TRANSPORTATION

PREPARED BY:

CRAWFORD, MURPHY & TILLY, INC.

CONTENTS

APPENDICES

PROJECT INFORMATION

The Parrish Avenue grade separation project is located east of Parrish Avenue between 169th Street and 173rd Street within the City of Hammond in Lake County, Indiana. It is located within Section 10, Township 36 North, Range 9 West of the U.S. Geological Survey (USGS) Highland, Indiana Quadrangle (see the Location Map and the USGS Topographic Map in Appendix A).

Currently, Parrish Avenue is a north-south two-lane urban minor collector that crosses tracks owned by the Norfolk Southern Railway. The purpose of the project is to reduce delays for residents, students, emergency services and businesses travelling on routes that must cross the railway corridor. The need for the project is evident in the delays and exposure to stopped trains that vehicles and pedestrians experience at the crossing of the tracks—specifically pedestrians going to/from Morton Senior High School, C.N. Scott Middle School, and Hess Elementary School.

The alternatives analysis evaluated the No-Build Alternative and two Build Alternatives. The recommended Build Alternative (Alternative 2), provides a new grade separated roadway, referred to as Governors Parkway, located east of Parrish Avenue within an approximate 34-acre parcel of undeveloped land (see the Aerial Map in Appendix A). In addition to resulting in a new roadway alignment between these roadways, the project would close Parrish Avenue at the existing railway crossing. Following the requirements of Title 23, Part 772 of the Code of Federal Regulation (23 CFR 772), *Procedures for Abatement of Highway Traffic Noise and Construction Noise*, and the Indiana Department of Transportation's (INDOT's) *Traffic Noise Analysis Procedure* (also referred to as INDOT's Noise Policy), the recommended Build Alternative is a Type I project because a roadway would be constructed on a new location.

Most of the noise analysis study area for the Parrish Avenue grade separation project lies within the area delineated by 169th Street on the north, Kentucky Avenue on the east, 173rd Avenue on the south, and Parrish Avenue on the west.

TRAFFIC NOISE ANALYSIS BACKGROUND INFORMATION AND REGULATIONS

Noise is generally defined as unwanted sound. The loudness of sound is measured in terms of sound pressure levels expressed in decibels (dB) and sound is composed of a wide range of frequencies. The dB 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. Frequencies are measured in hertz (Hz), which is the number of cycles per second. The human ear is typically capable of hearing frequencies from approximately 20 to 20,000 Hz and is less sensitive to higher and lower frequencies than mid-range frequencies. To compensate for low-end and high-end frequency insensitivity and to render noise levels readings more relevant to human experience, an "A-weighting" scale is used to approximate the response of the human ear. The A-weighted dB (dB(A)) unit emphasizes measurement of perceptible sound energy and disregards the frequencies that are not perceptible to humans.

The dB(A) unit can indicate the level of environmental noise at an instant in time, but community noise levels vary continuously. Also, most environmental noise is a composite of sound from different sources, creating a relatively steady background noise in which no individual source is

identifiable. To describe the time-varying character of traffic noise, an equivalent one-hour sound level (Leq(h)), is commonly used. Leq(h) is defined as an equivalent steady-state sound level over a one-hour period which contains the same acoustic energy as a time-varying sound level during the same period. Noise levels documented in this report are stated as Leq(h) expressed in units of dB(A).

As 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:

- The noise level from a line source, such as moving traffic on a road, decreases approximately 3 dB(A) with every doubling of distance from the source.
- Research has indicated that a difference of 10 dB(A) is perceived as twice as loud (or half as loud) to the human ear.
- Typically, the human ear can barely perceive a 3 dB(A) change in loudness.

FEDERAL REGULATIONS

The Federal Aid Highway Act of 1970 required the Federal Highway Administration (FHWA) to develop noise standards and abatement requirements for highway traffic noise. These standards are contained in 23 CFR 772. This regulation applies to highway construction projects where a state department of transportation has requested Federal funding for participation in the project. The regulation provides procedures for preparing operational and construction noise studies and considering noise abatement. The regulations do not mandate that the abatement criteria be met in all situations, but rather require that feasible and reasonable efforts be made to provide noise mitigation when the abatement criteria are approached or exceeded. Per 23 CFR 772.3, all highway projects that are developed in conformance with this regulation are deemed to be in conformance with FHWA noise standards.

FHWA has developed three “project types” to assess noise analysis applicability. Federal regulations only apply to Type I and Type II projects. Type III projects are ones that do not meet the definition of a Type I or Type II project and do not require a noise analysis. The project is a Type 1 project under 23 CFR 772.5 because the project would construct a roadway on new location. Therefore, a traffic noise analysis is required for the full project limits.

The FHWA regulations establish Noise Abatement Criteria (NAC) activity categories based on land use to assess the potential for traffic noise impacts as defined in 23 CFR 772. The FHWA NAC and description of activity categories are shown in Table 1. The NAC are not goals for noise attenuation design criteria or design targets.

Traffic noise impacts occur when predicted design year noise levels under the build scenario approach, meet or exceed the NAC, or if there are substantial increases in traffic noise over existing conditions, independent of the NAC. FHWA has deferred to the State agencies to define a noise level that “approaches” the NAC and to define a substantial increase in traffic noise levels. FHWA requires use of FHWA Traffic Noise Model (TNM), Version 2.5 or 3.0, to predict existing traffic noise levels and predict future traffic noise levels with a proposed project; Version 2.5 was used to perform the traffic noise analysis for the proposed Governors Parkway.

TABLE 1: FHWA NOISE ABATEMENT CRITERIA (NAC) ACTIVITY CATEGORIES

Activity Category	Leq (1 hour)	Description of Activity Category
A	57 dB(A) (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 dB(A) (exterior)	Residential.
C	67 dB(A) (exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 dB(A) (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 dB(A) (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: 23 CFR 772, Table 1

If predicted design year traffic noise levels with the Build Alternative approach, meet, or exceed the NAC or a substantial increase in noise level is predicted, 23 CFR 772 requires that noise abatement measures be considered. The abatement measures may include the following:

- Noise barrier construction: Noise barriers reduce noise by interrupting the path of sound between a source and a receiver of the sound (i.e., a person). To be effective, a noise barrier should be located close to either the noise source or the receiver and be sufficiently long and of a height to break the line-of-sight from the noise source to the receiver.
- Traffic management measures: Traffic management measures may include restrictions on speed, restrictions on traffic volumes, restricted access for certain motor vehicle types, and restricted times of travel.
- Alteration of horizontal and vertical alignments: Alignment of the road refers to the physical layout and location of the highway. A highway's noise impacts may be altered by shifting it in the horizontal or vertical direction.
- Noise insulation of public use or non-profit institution structures: For buildings listed under Category D in Table 1, insulation may be considered as a noise mitigation strategy; this strategy is not available to other types of noise-sensitive development.

- Acquisition of real property: In this case, the DOT acquires, or acquires interest in, primarily undeveloped property near the roadway that is the noise source, to preempt its future development with noise-sensitive uses.

STATE POLICY

FHWA requires that all states have an approved policy to identify and address highway traffic noise impacts. The Indiana Department of Transportation (INDOT) Noise Policy, effective July 1, 2017, was developed to implement the requirements of 23 CFR Part 772 and the noise-related requirements of the National Environmental Policy Act (NEPA) of 1969. The structure of the policy focuses on the following principal elements:

- Identification of noise sensitive areas and receptors.
- Determination of existing noise levels.
- Prediction of future noise levels.
- Identification of traffic noise impacts.
- Identification and consideration of noise abatement measures.
- Coordination with local government officials.
- Consideration of construction noise.

FHWA requires use of FHWA Traffic Noise Model (TNM) 2.5 to determine current and future traffic noise levels created by a proposed project and has deferred to the State agencies to define the noise level that “approaches” the NAC and to define a substantial increase in traffic noise levels.

INDOT defines noise impacts as modeled traffic-generated noise levels that are predicted to come within 1 dB(A) of, meet, or exceed the NAC for the appropriate activity category or that increase by 15.0 dB(A) or more over the existing traffic-generated noise levels.

INDOT requires that noise barriers achieve a 5 dB(A) reduction at a majority (greater than 50%) of the impacted receptors. If a barrier cannot achieve this acoustic goal, abatement is considered not to be acoustically feasible. INDOT also requires noise abatement measures to be based on sound engineering practices and standards and requires that any measures be evaluated at the optimum location. In situations where engineering considerations make noise barriers not feasible, the noise analysis will explicitly state the reasons.

INDOT’s goal for substantial noise reduction is to provide at least a 7.0 dB(A) reduction for benefited first row receptors in the design year. However, conflicts with adjacent lands may make it impossible to achieve substantial noise reduction at all benefited first row receptors. Therefore, the noise reduction design goal for Indiana is 7dB(A) for a majority (greater than 50%) of the benefited first row receptors. To determine cost effectiveness, the estimated cost of constructing a noise barrier (including installation and additional necessary construction such as foundations or guardrails) will be divided by the number of benefited receptors (those who would receive a reduction of at least 5 dB(A)). A base material and design cost of $25,000 or less per benefited receptor is currently

considered to be cost-effective. Development in which the majority (more than 50%) of the receptors were in place prior to the initial construction of the roadway in its current state (functional classification) will receive additional consideration for noise abatement. The cost-effectiveness criteria used for these cases will be 20% greater (currently $30,000 per benefited receptor).

The objectives of this noise study are to:

- Identify noise sensitive land uses within the traffic noise analysis area.
- Characterize the existing noise environment through field noise measurement at representative noise receptor sites. Validate the computer model using traffic data collected during the field measurement period. Use TNM to predict the existing year and design year traffic noise levels at noise receptor sites using INDOT certified traffic volumes.
- Identify impacted receptor sites and use TNM to determine if noise abatement measures are reasonable and feasible.

EXISTING CONDITIONS AND MODELED NOISE ENVIRONMENT

As previously stated, most of the noise analysis study area for the Parrish Avenue grade separation project lies within an area delineated by 169th Street on the north, Kentucky Avenue on the east, 173rd Avenue on the south, and Parrish Avenue on the west.

the land use within the study area is primarily residential. Along Parrish Avenue, Kentucky Avenue, and 173rd Avenue there are single-family residences. West of Parrish Avenue, in the Parrish View subdivision, there are residences and a small community park with a gazebo. South of 169th, there is a multi-family residential complex (Kennedy Crossing Apartments) and a small playground that is owned/maintained by the City of Hammond. The NAC Land Use Activity Categories and Noise Sensitive Areas and Noise Measurement Points figures in Appendix A delineate the locations of the residential properties, the park, and the playground. With respect to the NAC, the residences were classified as Activity Category B and both the park and playground were classified as Activity Category C. The receptor locations that were modeled in the TNM for the residences with a potential to be impacted by traffic noise in the project's design year, the park, and the playground are illustrated on the Receptor Locations figure in Appendix A. In all, 116 receptors were evaluated representing 114 residences, the park, and the playground.

In addition to natural sources of sound (e.g., birds, wind), noise produced by traffic on the roadways within the study area, trains on the Norfolk Southern Railway track that traverses the study area, and aircraft operations (i.e., arrivals and departures) at Gary/Chicago International Airport (GYY) contribute to the ambient (i.e., outdoor) noise environment. The Federal Railroad Administration (FRA) – US DOT Crossing Inventory Form indicates that 10 scheduled trains utilize the crossings at Parrish Avenue and 173rd Street each day and the Federal Aviation Administration's (FAA's) APO Terminal Forecast 2019 indicates that in the year 2021 there would be approximately 58 daily aircraft operations at GYY.[1] The Railroad/Aircraft Noise Consideration Section of this report details

[1] Data extracted from the APO Terminal Area Forecast 2019 on June 29, 2021.

how the noise of the trains and the noise of the aircraft was incorporated into the prediction of existing and future total noise levels.

TNM MODELED OBJECTS

The 2019 Existing TNM input file has receptors that represent individual residences (including first, second, and third floor apartments in the Kennedy Crossing Apartment complex), receptors for the park and playground as well as existing roadways for which the project-related traffic/operational analysis was performed. The 2042 Build input file retains the same features, divides Parrish Avenue at the railroad where the crossing closure is proposed and includes the new roadway alignment and intersections (at Parrish Avenue and 173rd Street). Specific features of the input files are as follows:

- Traffic on Parrish Avenue was modeled as one lane in each direction with parking lanes on both sides of the roadway.
- On 169th Street two travel lanes were modeled in each direction of travel and the center turn lane and sidewalks on both sides of the roadway were included with no traffic assignments.
- Traffic on 173rd Street was modeled as one lane in each direction with parking lanes on both sides of the roadway.
- Governors Parkway was modeled as one travel lane in each direction.

TRAFFIC VOLUMES AND SPEED

The traffic data used in the TNM are provided in Appendix B of this Noise Study Analysis Report. The data for the years 2019 and 2042 were obtained from the project's Engineering Assessment and from the preparers of the Engineering Assessment.[2]

INDOT's Traffic Noise Analysis Procedure requires that if the future traffic volume is not above level-of-service (LOS) D, an equivalent traffic volume that would produce a LOS C should be used. Except for the westbound approach to the Parrish Avenue intersection at 173rd Street for the 2042 Build input, the traffic volumes represent LOS A, B, or C operating conditions.[3] Because the westbound 173rd Street approach to Parrish Avenue is forecast to operate at LOS F, a volume representing LOS C conditions was used.

For existing roadways, current posted speeds were used (i.e., 25 miles per hour (mph) on Parrish Avenue and 173rd Street and 35 mph on 169th Street). For Governors Parkway, the project's design speed of 30 mph was used.

The vehicle fleet mix on roadways modeled in the TNM was also based on data from the project's Engineering Assessment. For existing roadways, the percentage of trucks that were observed during the peak A.M. and peak P.M. periods was assumed for both the existing and future input. For Governors Parkway, the percentage of trucks observed on Parrish Avenue was assumed. Because

[2] The Engineering Assessment was prepared by HDR, Inc.
[3] See Table 3-5, 2042 Build Level of Service and Delay, in the Engineering Assessment report.

the Engineering Assessment data does not segregate truck traffic by truck size, the truck fleet was conservatively assumed to be comprised of 50 percent medium trucks and 50 percent heavy trucks.

RAILROAD AND AIRCRAFT NOISE CONSIDERATION

The FHWA's TNM does not provide predicted levels of train noise. Therefore, the noise level of trains on the Norfolk Southern Railway track was calculated separately for each evaluated receptor using equations from Chapter 4, Section 4.5 of the FTA Transit Noise and Vibration Impact Assessment Manual (September 2018). The derived train-related noise levels were added to roadway levels in accordance with decibel addition procedures.

As previously stated, the FRA Crossing Inventory Report indicates that there are 10 scheduled trains that cross Parrish Avenue and 173rd Street each day (see Appendix C). This frequency of use and the speed of the locomotive trains along the railway track are not anticipated to change with the proposed project. However, the trains approaching the existing Parrish Avenue at grade crossing would no longer be required to sound horns on approach to the area (i.e., after construction of the proposed project, the nearest at-grade crossing requiring the sounding of horns would be the 173rd Street crossing). At the 40-50 mph train speed indicated on the FRA inventory report, where applicable horns to the crossings would be sounded approximately 700 feet from a crossing based on the FRA Train Horn Rule (49 CFR Part 222). As such, the horn noise contribution for trains was factored into the Existing total noise predictions for the receptors throughout the study area and factored into the Build total noise predictions for the receptors in the southeast portion of the study area only. The equations used to calculate the contribution of railroad noise is provided in Appendix C.

The TNM also does not provide predicted levels of aircraft noise. To determine if the aircraft operations at GYY have the potential to add to ambient levels of noise within the study area, aircraft noise contours from the Bureau of Transportation Statistics (BTS) from the National Transportation Noise Map were reviewed.[4] Based on the location of the study area, on a 24-hour basis the contribution of aircraft noise to the total noise environment is less than 45 dB(A). A figure illustrating the Aircraft Noise Contours from the BTS is provided in Appendix A. Because data providing peak hour dB(A) data are not available, aircraft noise from GYY was conservatively assumed to not contribute to the total TNM predictions unless a traffic/train noise impact was identified.

NOISE MEASUREMENTS AND MODEL VALIDATION

FIELD NOISE MEASUREMENTS

CMT obtained field noise level measurements on September 15, 2019. Nine measurement locations were proposed in the measurement plan that was submitted to INDOT on July 26, 2019. There was only one deviation from the measurement plan. Representative Receptor 3 (RR-3), which was proposed to be in the rear yard of a residence closest to the new roadway alignment, was relocated to an open area in the southeast corner of the Parrish Park subdivision due to a barking dog in the

[4] Extracted from the Bureau of Transportation Statistics website on June 29, 2021. https://maps.dot.gov/BTS/NationalTransportationNoiseMap/

originally proposed location. The noise measurement points (NMP-1 through NMP-9) are depicted on the Noise Sensitive Areas and Noise Measurement Points figure in Appendix A.

Field data collection sheets are included in Appendix D. The sheets provide the day and times that the measurements were obtained, weather conditions, and details of each measurement location. Traffic volumes and fleet mix data were recorded manually during each measurement period. Because the level of motor vehicle activity at the RR-3, RR-6, and RR-8 measurement locations was minimal, traffic data was obtained on Parrish Avenue (RR-3 and RR-6) and 173rd Street (RR-8) during these measurements.

Noise level measurements were obtained with a Quest SoundPro DL2 sound level meter that was calibrated with a Quest QC-10 acoustical calibrator. The meter was mounted on a tripod to establish a sampling height of five feet. The meter was set to Leq mode with slow response, a 3 dB exchange rate, and the frequency response was set to the A-weighted scale as required by FHWA. Measurements were collected for a 15-minute period at NMP-1, NMP-2, NMP-4, NMP-5, and NMP-9. Because motor vehicle traffic was judged not likely to be the predominant contributor to measured noise levels at NMP-3, NMP-6, NMP-7, and NMP-8, the measurement period for these locations was 30 minutes. The sound level meter reports and calibration information for the meter and calibrator are provided in Appendix D.

As noted on the field data sheets included in Appendix D, multiple sources of non-traffic noise were noted during the measurement periods at several of the measurement locations:

- At NMP-3, a train was audible on the Norfolk Southern Railway track along with train horns and crossing bells, and a dog could also be heard occasionally barking. An aircraft also passed over the area.
- At NMP-5, two loud motor vehicles passed the monitor and an aircraft passed over the area.
- At NMP-6, automobiles moved in and out of the parking lot and idled near the monitor, a helicopter passed over the area, and a dumpster lid was dropped during the measurement period.
- At NMP-7, a helicopter passed over the area.
- At NMP-8, there was near constant jet aircraft noise throughout the measurement period.

TRAFFIC NOISE MODEL VALIDATION

INDOT's noise policy states that if a traffic count that was obtained during a measurement period is converted to an equivalent hourly rate and used as input for the TNM and the results from the TNM are within 3 dB(A) of the measured value, then the TNM is considered validated. As previously stated, measurements were collected for 15-minute periods at NMP-1, NMP-2, NMP-4, NMP-5, and NMP-9. Therefore, the traffic counts for these location were multiplied times four to obtain the equivalent hourly rate. For NMP-3, NMP-6, NMP-7, and NMP-8, locations for which measurements were obtained for 30-minute periods, the traffic counts were multiplied times two. The appropriate traffic counts were included as described above. As shown in Table 2, based solely on traffic noise, the TNM validated for all locations except NMP-3, NMP-6, and NMP-8.

For NMP-3, the initial difference between the measured and unadjusted modeled noise levels was 18.1 dB(A). To consider the train noise noted during the measurement, the noise of the railway sources was calculated using FTA equations (see Appendix C). The resultant total noise level, 45.1 dB(A), is within 3.0 dB(A) of the measured level and therefore the TNM validated at this location.

For NMP-6, the wide variety of non-traffic noise sources were not of a type that can easily be estimated for adjustments to the TNM noise level. Because the TNM would not validate at this location and the measured levels were greater than the TNM levels, the measurement data demonstrates that motor vehicle traffic is not the predominant noise source at this location. The measured noise level of 53.9 dB will be used as the existing noise level for receptors in this common noise environment.

For NMP-8, CMT considered the reported aircraft noise by adding the estimated aircraft noise level from the BTS National Transportation Noise Map discussed previously in this report to the TNM results. Although the addition of the aircraft noise brought the measured and modeled values closer, the revised difference was not within the 3 dB(A) criteria. Because the TNM would not validate at this location and the measured levels were greater than the TNM levels, the measurement data demonstrates that motor vehicle traffic is not the predominant noise source at this location. As such, if the results of the TNM indicate that abatement is to be considered for evaluated receptors in the vicinity of NMP-8, the measured noise level will be used to represent the existing and possibly future, noise level.

The field measured noise levels and where applicable adjusted field noise levels as well as the TNM results are provided in Table 2.

TABLE 2: MODEL VALIDATION RESULTS

Model Measurement Location	Address	Field Measurement (dB(A))	TNM Result (dB(A))	Difference
NMP-1	3139 170th Street	66.3	66.5	0.2
NMP-2	Gazebo south of 170th Street and west of Carolina Court	45.3	43.1	-2.2
NMP-3[a]	Intersection of 171st Place and Kansas Avenue	45.0	45.1	-3.0
NMP-4	3219 173rd Street	51.7	53.9	2.2
NMP-5	7220 Parrish Avenue	53.4	51.3	-2.1
NMP-6[b]	6945 Patricia Court	53.9	32.6	-21.3
NMP-7	Intersection of 171st Street and Kentucky Avenue	58.0	56.6	-1.4
NMP-8[b]	7105 Kentucky Avenue	57.0	33.3	-23.7
NMP-9	3241 E. 173rd Street	56.6	55.0	-1.6

[a] The TNM result was adjusted to consider the noise of the train that was audible during the measurement period.

[b] Measurement data demonstrates that motor vehicle traffic is not the predominant noise source at these locations.

TRAFFIC NOISE MODEL RESULTS AND IMPACT ASSESSMENT

TNM was used to predict Existing (2019) and Future Build (2042) traffic noise for the land uses for which there are NAC within eight Common Noise Environments (CNEs). One receptor was modeled for each noise-sensitive use with a potential to be impacted. As previously stated, the residences were modeled as Activity Category B and the community park and playground were modeled as Activity Category C. Therefore, a receptor was determined to be impacted if the predicted traffic noise level with the project in the design year (2042) was equal to or greater than 66 dB(A) or if levels with the project increase 15 dB(A) or more when compared to existing levels.

TNM is limited to modelling traffic noise and cannot be used to accurately model railroad noise. Therefore, to appropriately reflect noise levels in the area, railroad noise levels were calculated for each receptor location utilizing noise equations from the FTA. The resultant train noise levels were then logarithmically added to the traffic noise levels generated by the TNM models at each receptor location. The rail noise calculations are provided in Appendix C.

Table 3 is a summary of the TNM/train results. A table in Appendix C provides the predicted future traffic/train noise levels for each evaluated receptor. As shown in Table 3, the results of the analysis indicate that traffic/train noise would not exceed the NAC nor would the traffic/train noise increase 15 dB(A) or more at any of the evaluated receptors. Predicted decreases in noise levels are a result of the closure of Parrish Avenue with the project which reduces motor vehicle traffic and the removal of the requirement to sound warning horns on the trains at the Parrish Avenue crossing.

TABLE 3: SUMMARY OF NOISE MODEL RESULTS AND IMPACT ASSESSMENT

CNE	Receptor ID(s)	Land Use(s)	NAC with INDOT Approach Criterion (dB(A))	Predicted Leq(h) Expressed in dB(A)[b]			Number of Impacts
				2019 Existing	2042 Future	Change from Existing	
1	1 to 7	Residential	66	45.3 to 47.8	49.0 to 57.0	1.3 to 11.5	0
2	8	Playground	66	46.8	51.0	4.2	0
3	9 to 19	Residential	66	43.6 to 49.6	45.0 to 50.0	0.4 to 1.8	0
4	20	Residential	66	54.4	54.7	0.3	0
5	21 to 32	Residential	66	49.8 to 60.4	51.4 to 60.4	-0.0 to 5.3	0
6	33 to 47	Residential	66	49.8 to 59.0	51.0 to 58.0	-1.1 to 2.2	0
7	48 to 52	Residential	66	55.6 to 55.8	56.0	0.2 to 0.4	0
8	53 to 91	Residential	66	44.8 to 58.5	48.0 to 58.0	-2.6 to 8.2	0
9	92 to 101	Residential	66	50.0 to 57.2	50.0 to 55.0	-3.9 to 0.0	0
10	102	Park[a]	66	52.8	52.0	-0.8	0

[a] The property assigned a park land use is a community use area with a gazebo that is owned by the City of Hammond.

[b] Where more than one receptor is within a CNE, the presented range of traffic noise represents the lowest predicted level for the group of receptors and the maximum predicted level for the group.

CONSIDERATION OF ABATEMENT

Because no traffic noise impacts were identified, no abatement measures were considered.

CONSTRUCTION NOISE

Noise from construction activities will add to the average noise level during the construction phase of the project. However, construction activities will be temporary. All activities are expected to occur during normal daytime waking hours, avoiding the annoyance or disruption of sleep that may be caused by nighttime operations.

Noise may also be generated by increases in heavy truck traffic to and from the project area. This increase in noise should also be confined to daytime hours.

Increases in the average noise level due to construction are temporary, but measures should be taken to minimize the impact of construction-related noise. Recommended standard reduction measures include:

- Limiting the operation of heavy equipment and other noisy procedures to daylight hours whenever possible.
- Installing and maintaining effective mufflers on equipment.
- Locating equipment and vehicle staging areas as far from noise sensitive areas as practicable.
- Limiting unnecessary idling of equipment.

In all cases, construction operations will adhere to local construction noise ordinances.

COORDINATION WITH LOCAL GOVERNMENT OFFICIALS

Because TNM 2.5's contour module, which produces noise level contours for undeveloped areas to assist in community planning, does not function with modern computer operating systems, "dummy" receivers were used to evaluate the distance from Governors Parkway within currently undeveloped areas at which the NAC for various types of land uses would be exceeded in the project's design year (2042). The results indicate that a level of 66 dB(A), INDOT's NAC for Activity Category B (residential land uses) and Category C (uses that include active sports areas, day care centers, and recreational area) would not extend beyond the proposed roadway's edge-of pavement.

Upon completion of the environmental document for this project, INDOT will provide this noise study to the Lake County Plan Commission and the City of Hammond Planning Department. INDOT understands that it is in a unique position to provide outreach to local government and county planning units. INDOT also understands that it is the local or county government that has the power to regulate land development. INDOT is willing to help the local government by providing expert guidance on traffic noise-related issues. This includes recommendations on setbacks, how to interpret traffic noise studies that have been provided for FHWA projects, and other general traffic noise concerns so that impacts are minimized for areas that are being developed.

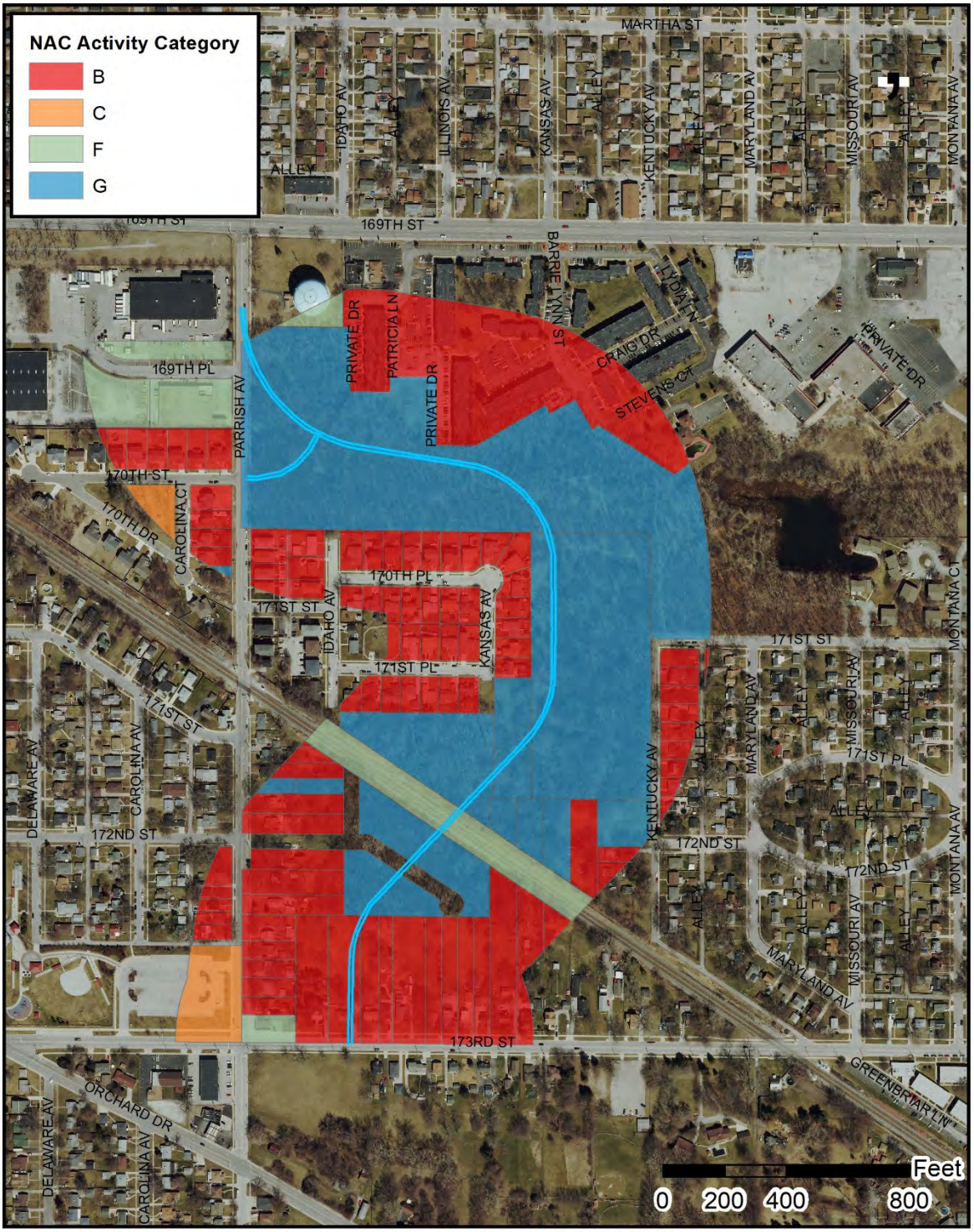
CONCLUSIONS AND RECOMMENDATIONS

The Build alternative evaluated in this Noise Analysis Report provides a new grade separated roadway, Governors Parkway, located east of Parrish Avenue within an approximate 34-acre parcel of undeveloped land. Because the roadway would be constructed on a new location, the project is considered a Type I project for traffic noise.

Traffic noise was evaluated for 116 receptors representing 114 residences, a small community park with a gazebo, and a playground that is owned/maintained by the City of Hammond. With respect to the NAC, the residences were classified as Activity Category B and both the park and playground were classified as Activity Category C. The results of the analysis indicate that the evaluated land uses would not be impacted by traffic noise. A re-evaluation 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, the abatement measures might 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 the public involvement processes. INDOT will incorporate highway traffic noise consideration in on-going activities for public involvement in the highway program.

Parrish Avenue Bridge Over Norfolk Southern Railway

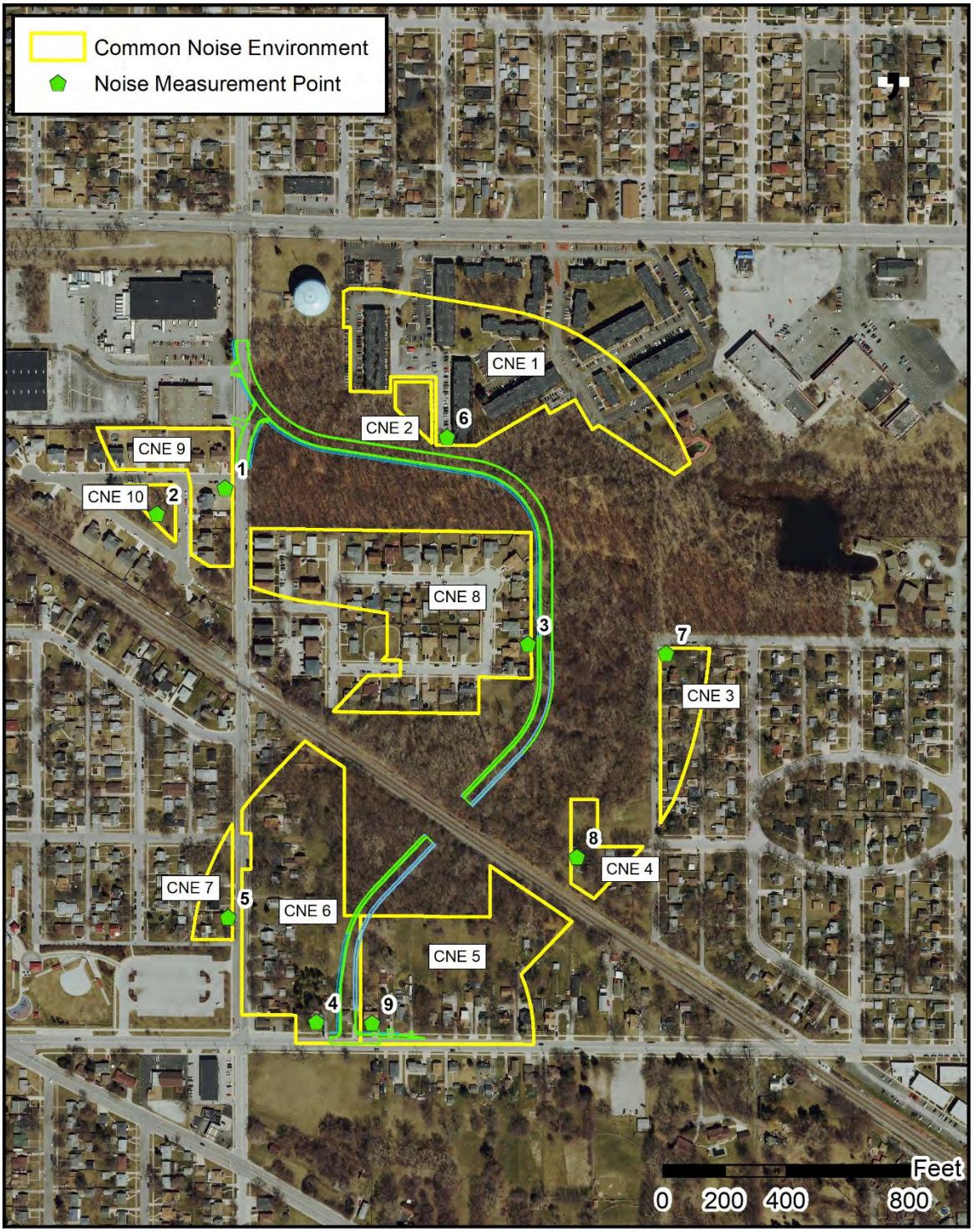
APPENDIX A: FIGURES



Parrish Avenue Bridge, Des No. 1801907

NAC LAND USE ACTIVITY CATEGORIES

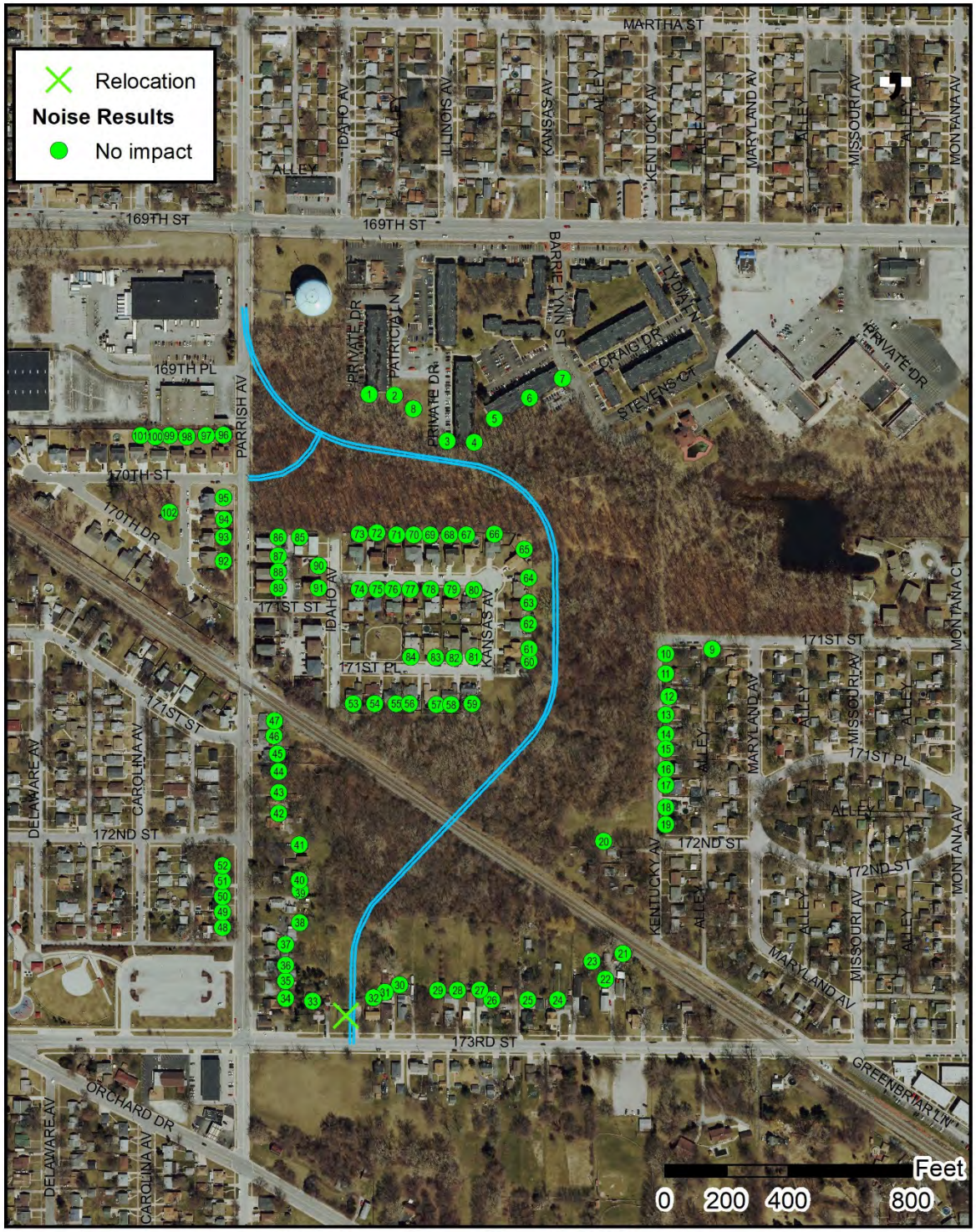
CMT
Crawford, Murphy & Tilly



Parrish Avenue Bridge, Des No. 1801907

NOISE SENSITIVE AREAS/NOISE MEASUREMENT POINTS

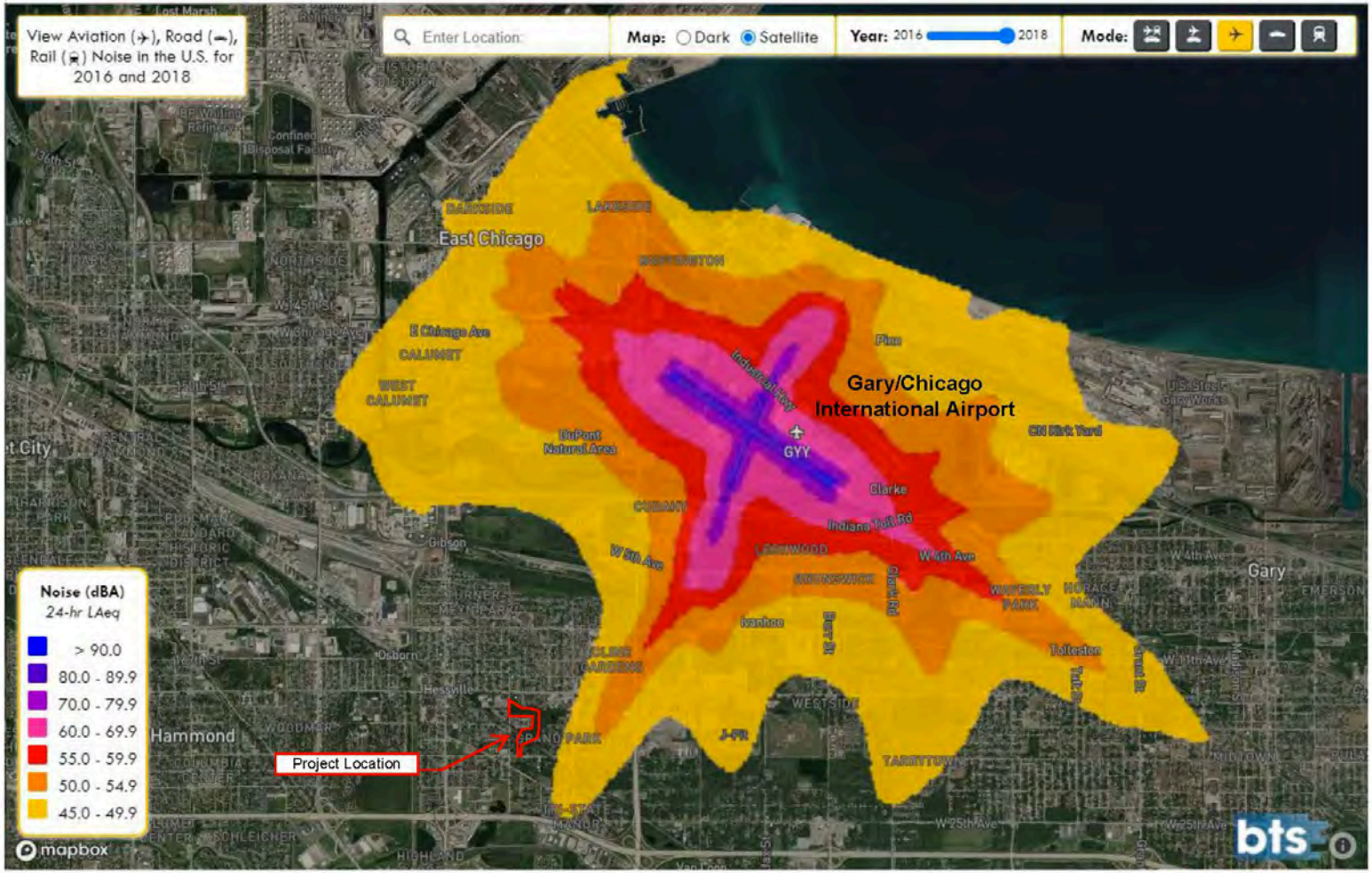
CMT
Crawford, Murphy & Tilly



Parrish Avenue Bridge, Des No. 1801907

RECEPTOR LOCATIONS

CMT
Crawford, Murphy & Tilly



Parrish Avenue Bridge (Des No 1801907) – Hammond, Lake County, IN

CMT
Crawford, Murphy & Tilly

Aircraft Noise Contours

Parrish Avenue Bridge Over Norfolk Southern Railway

APPENDIX B: TRAFFIC DATA

Traffic Volumes

AM/PM	Intersection		Turning Movement Volumes						Approach and Departure Volumes			
			Existing - 2019			Build - 2042			Existing - 2019		Build - 2042	
			L	T	R	L	T	R	Approach	Depart	Approach	Depart
AM	169th/Parrish	W	12	319	35	15	390	70	366	470	475	605
		N	69	52	31	85	65	40	152	115	190	140
		E	67	404	53	140	495	65	524	450	700	605
		S	35	50	62	70	60	130	147	154	260	275
	173rd/Parrish (Existing)	W	31	136	3	15	210	15	170	263	240	385
		N	66	29	56	100	20	85	151	121	205	55
		E	23	206	70	15	210	15	299	220	240	360
		S	1	20	18	0	10	50	39	55	60	50
	173rd/Governors Parkway (Proposed)	W				75	285	--			360	375
		N				55	--	75			130	190
		E				--	300	115			415	340
		S										
PM	169th/Parrish	W	31	517	30	40	635	60	578	527	735	665
		N	39	34	29	50	40	35	102	102	125	125
		E	77	474	40	150	580	50	591	630	780	830
		S	24	31	74	50	35	145	129	141	230	250
	173rd/Parrish (Existing)	W	56	93	3	75	185	5	152	137	265	245
		N	21	45	54	20	15	50	120	105	85	115
		E	9	80	18	45	190	25	107	122	260	240
		S	3	31	8	5	15	35	42	57	55	65
	173rd/Governors Parkway (Proposed)	W				100	140	--			240	260
		N				35	--	125			160	120
		E				--	135	20			155	175
		S										

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Percent Truck Traffic

AM/PM	Intersection	Leg	Roadway	Synchro Reports					
				Total Traffic		Number of Trucks		Percent Trucks	
				Approach	Depart	Approach	Depart	Approach	Depart
AM	169th/Parrish	W	169th St	366	470	4	5	1.0%	1.0%
		N	Parrish Ave	152	115	1	4	1.0%	3.0%
		E	169th St	524	450	5	5	1.0%	1.0%
		S	Parrish Ave	147	154	10	2	7.0%	1.0%
	173rd/Parrish (Existing)	W	173rd St	170	263	6	5	4.0%	2.0%
		N	Parrish Ave	151	121	3	3	2.0%	2.0%
		E	173rd St	299	220	3	4	1.0%	2.0%
		S	Parrish Ave	39	55	0	2	0.0%	4.0%
PM	169th/Parrish	W	169th St	578	527	1	2	0.0%	0.0%
		N	Parrish Ave	102	102	3	3	3.0%	3.0%
		E	169th St	591	630	4	1	1.0%	0.0%
		S	Parrish Ave	129	141	4	15	3.0%	11.0%
	173rd/Parrish (Existing)	W	173rd St	152	127	3	1	2.0%	1.0%
		N	Parrish Ave	120	105	0	7	0.0%	7.0%
		E	173rd St	107	122	2	0	2.0%	0.0%
		S	Parrish Ave	42	57	5	0	12.0%	0.0%

Source: Engineering Assessment

Parrish Avenue Bridge Over Norfolk Southern Railway

APPENDIX C: RAILWAY EQUATIONS AND TOTAL NOISE RESULTS

Railroad Noise Methodology

Federal Transit Associate (FTA) Railroad Noise Calculations

Locomotive Noise Exposure at 50 feet:

$$Locomotive\ L_{eq(1hr)} = SEL_{ref} + 10\log(N_{loco}) + K\log\left(\frac{S}{50}\right) + 10\log(V) - 35.6$$

$$Locomotive\ L_{eq(1hr)} = 56.1\ dBA$$

SEL_{ref} = 92 dBA (from FTA Transit Noise and Vibration Impact Assessment Manual, Table 4-9)

N_{loco} = 2 locomotives

K = constant, -10 for passenger diesel

S = 45 mph (average speed)

V = 0.417 trains per hours (average number of trains per hour)

Rail Vehicle Noise Exposure at 50 feet:

$$Railcar\ L_{eq(1hr)} = SEL_{ref} + 10\log(N_{cars}) + 20\log\left(\frac{S}{50}\right) + 10\log(V) - 35.6$$

$$Railcar\ L_{eq(1hr)} = 58.7\ dBA$$

SEL_{ref} = 82 dBA (from FTA Transit Noise and Vibration Impact Assessment Manual, Table 4-9)

N_{cars} = 50 cars

S = 45 mph (average speed)

V = 0.417 trains per hours (average number of trains per hour)

Warning Horns Noise Exposure at 50 feet:

$$Horn\ L_{eq(1hr)} = SEL_{ref} - 10\log\left(\frac{S}{50}\right) + 10\log(V) - 35.6$$

$$Horn\ L_{eq(1hr)} = 54.1\ dBA$$

SEL_{ref} = 93 dBA (from FTA Transit Noise and Vibration Impact Assessment Manual, Table 4-9)

S = 45 mph (average speed)

V = 0.417 trains per hours (average number of trains per hour)

Combined Existing/Future Railroad Noise Exposure at 50 feet:

$$Combined\ Existing\ L_{eq(1hr)} = 10\log\left(Locomotive\ L_{eq(1hr)} + Railcar\ L_{eq(1hr)} + Horn\ L_{eq(1hr)}\right)$$

$$Combined\ Existing\ L_{eq(1hr)} = 57.1\ dBA$$

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

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

A. Revision Date (MM/DD/YYYY)	B. Reporting Agency	C. Reason for Update (Select only one)	D. DOT Crossing Inventory Number
07 / 11 / 2021	☒ Railroad ☐ Transit ☐ State ☐ Other	☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction	478690B

Part I: Location and Classification Information

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

4. City / Municipality	5. Street/Road Name & Block Number	6. Highway Type & No.
☒ In ☐ Near HAMMOND	PARRISH STREET (Street/Road Name) | * (Block Number)	CITY ST

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

9. Railroad Division or Region	10. Railroad Subdivision or District	11. Branch or Line Name	12. RR Milepost
☐ None GREAT LAKES	☐ None CHICAGO	☒ None	B | 0499.650 | (prefix) | (nnnn.nnn) | (suffix)

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

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

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

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

26. HSR Corridor ID	27. Latitude in decimal degrees	28. Longitude in decimal degrees	29. Lat/Long Source
☒ N/A	(WGS84 std: nn.nnnnnn) 41.58417	(WGS84 std: -nnn.nnnnnn) -87.451861	☒ Actual ☐ Estimated

30.A. Railroad Use *	31.A. State Use * 1
30.B. Railroad Use *	31.B. State Use * 60
30.C. Railroad Use *	31.C. State Use * 2
30.D. Railroad Use *	31.D. State Use * 1
32.A. Narrative (Railroad Use) *	32.B. Narrative (State Use) *

33. Emergency Notification Telephone No. (posted)	34. Railroad Contact (Telephone No.)	35. State Contact (Telephone No.)
800-946-4744	800-946-4744	855-080-1

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains (6 AM to 6 PM)	1.B. Total Night Thru Trains (6 PM to 6 AM)	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
3	7	0	0	

2. Year of Train Count Data (YYYY)	3. Speed of Train at Crossing
2021	3.A. Maximum Timetable Speed (mph) 50 3.B. Typical Speed Range Over Crossing (mph) From 40 to 50

4. Type and Count of Tracks
Main 2 Siding 0 Yard 0 Transit 0 Industry 0

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

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

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date (MM/DD/YYYY) 07/11/2021	PAGE 2	D. Crossing Inventory Number (7 char.) 478690B

Part III: Highway or Pathway Traffic Control Device Information

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

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

2.A. Crossbuck Assemblies (count)	2.B. STOP Signs (R1-1) (count)	2.C. YIELD Signs (R1-2) (count)
2	0	0

2.D. Advance Warning Signs (Check all that apply; include count) ☐ None
☒ W10-1 2 ☐ W10-3 ☐ W10-11
☐ W10-2 ☐ W10-4 ☐ W10-12

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

2.J. Other MUTCD Signs ☒ Yes ☐ No
Specify Type R15-2P Count 2
Specify Type Count 0
Specify Type Count

2.K. Private Crossing Signs (if private) ☐ Yes ☐ No

2.L. LED Enhanced Signs (List types)

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

3.A. Gate Arms (count)	3.B. Gate Configuration	3.C. Cantilevered (or Bridged) Flashing Light Structures (count)	3.D. Mast Mounted Flashing Lights (count of masts) 2	3.E. Total Count of Flashing Light Pairs
Roadway 2 Pedestrian 0	☐ 2 Quad ☐ 3 Quad ☐ 4 Quad ☐ Full (Barrier) Resistance ☐ Median Gates	Over Traffic Lane 2 ☒ Incandescent Not Over Traffic Lane 0 ☐ LED	☒ Incandescent ☐ LED ☒ Back Lights Included ☐ Side Lights Included	8

3.F. Installation Date of Current Active Warning Devices: (MM/YYYY)	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells (count)
/ ☐ Not Required	☐ Yes Installed on (MM/YYYY) / ☒ No	☐ Yes ☒ No	2

3.J. Non-Train Active Warning ☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☒ None

3.K. Other Flashing Lights or Warning Devices Count 0 Specify type 0

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

Part IV: Physical Characteristics

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

5. Crossing Surface (on Main Track, multiple types allowed) Installation Date * (MM/YYYY) / Width * 25 Length * 48
☐ 1 Timber ☐ 2 Asphalt ☒ 3 Asphalt and Timber ☐ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal
☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other (specify)

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

Part V: Public Highway Information

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

5. Linear Referencing System (LRS Route ID) *

6. LRS Milepost *

7. Annual Average Daily Traffic (AADT)	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 2018 AADT 2762	6 %	☐ Yes ☒ No Average Number per Day 0	☐ Yes ☒ No

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

Submitted by Organization Phone Date

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

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

A. Revision Date (MM/DD/YYYY)	B. Reporting Agency	C. Reason for Update (Select only one)	D. DOT Crossing Inventory Number
07 / 10 / 2021	☒ Railroad ☐ Transit ☐ State ☐ Other	☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction	478689G

Part I: Location and Classification Information

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

4. City / Municipality	5. Street/Road Name & Block Number	6. Highway Type & No.
☒ In ☐ Near HAMMOND	173RD STREET (Street/Road Name) | (Block Number)	CITY ST

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

9. Railroad Division or Region	10. Railroad Subdivision or District	11. Branch or Line Name	12. RR Milepost
☐ None GREAT LAKES	☐ None CHICAGO	☒ None	B | 0499.230 | (prefix) | (nnnn.nnn) | (suffix)

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

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

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

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

26. HSR Corridor ID	27. Latitude in decimal degrees	28. Longitude in decimal degrees	29. Lat/Long Source
☒ N/A	(WGS84 std: nn.nnnnnn) 41.5809569	(WGS84 std: -nnn.nnnnnn) -87.4454214	☒ Actual ☐ Estimated

30.A. Railroad Use *	31.A. State Use * 2
30.B. Railroad Use *	31.B. State Use * 40
30.C. Railroad Use *	31.C. State Use * 2
30.D. Railroad Use *	31.D. State Use * 1
32.A. Narrative (Railroad Use) *	32.B. Narrative (State Use) *

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

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains (6 AM to 6 PM)	1.B. Total Night Thru Trains (6 PM to 6 AM)	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
3	7	0	0	

2. Year of Train Count Data (YYYY)	3. Speed of Train at Crossing
2021	3.A. Maximum Timetable Speed (mph) 50 3.B. Typical Speed Range Over Crossing (mph) From 40 to 50

4. Type and Count of Tracks
Main 2 Siding 0 Yard 0 Transit 0 Industry 0

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

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

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date (MM/DD/YYYY) 07/10/2021	PAGE 2	D. Crossing Inventory Number (7 char.) 478689G

Part III: Highway or Pathway Traffic Control Device Information

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

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

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

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

2.J. Other MUTCD Signs ☒ Yes ☐ No

Specify Type R15-2P Count 2
Specify Type Count 0
Specify Type Count

2.K. Private Crossing Signs (if private) ☐ Yes ☐ No

2.L. LED Enhanced Signs (List types)

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

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

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

3.J. Non-Train Active Warning ☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☒ None

3.K. Other Flashing Lights or Warning Devices Count 0 Specify type 0

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

Part IV: Physical Characteristics

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

5. Crossing Surface (on Main Track, multiple types allowed) Installation Date * (MM/YYYY) / Width * Length * 25

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

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

Part V: Public Highway Information

1. Highway System	2. Functional Classification of Road at Crossing	3. Is Crossing on State Highway System?	4. Highway Speed Limit
☐ (01) Interstate Highway System ☐ (02) Other Nat Hwy System (NHS) ☒ (03) Federal AID, Not NHS ☐ (08) Non-Federal Aid	☐ (0) Rural ☒ (1) Urban ☐ (1) Interstate ☒ (5) Major Collector ☐ (2) Other Freeways and Expressways ☐ (3) Other Principal Arterial ☐ (6) Minor Collector ☐ (4) Minor Arterial ☐ (7) Local	☐ Yes ☒ No	25 MPH ☒ Posted ☐ Statutory

5. Linear Referencing System (LRS Route ID) *

6. LRS Milepost *

7. Annual Average Daily Traffic (AADT)	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 2018 AADT 2885	6 %	☐ Yes ☒ No Average Number per Day 0	☐ Yes ☒ No

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

Submitted by Organization Phone Date

Total Noise Environment (TNM Traffic Noise and Derived Train Noise)

CNE	Receptor	Address	Distance from Railroad	Existing (2019)			Build (2042)		
				TNM	Train	Total	TNM	Train	Total
1	1a	Kennedy Crossing Apartments	905	46.0	42.6	47.6	51.0	42.0	52.0
1	1b	Kennedy Crossing Apartments	905	46.1	42.6	47.7	51.3	42.0	52.0
1	1c	Kennedy Crossing Apartments	905	46.2	42.6	47.8	51.5	42.0	52.0
1	2a	Kennedy Crossing Apartments	960	45.7	42.2	47.3	50.2	41.0	51.0
1	2b	Kennedy Crossing Apartments	960	45.8	42.2	47.4	50.4	41.0	51.0
1	2c	Kennedy Crossing Apartments	960	45.9	42.2	47.4	50.7	41.0	51.0
1	3a	Kennedy Crossing Apartments	1,050	43.1	41.6	45.4	55.6	41.0	56.0
1	3b	Kennedy Crossing Apartments	1,050	43.2	41.6	45.5	56.5	41.0	57.0
1	3c	Kennedy Crossing Apartments	1,050	43.2	41.6	45.5	56.7	41.0	57.0
1	4a	Kennedy Crossing Apartments	1,050	42.9	41.6	45.3	54.4	41.0	55.0
1	4b	Kennedy Crossing Apartments	1,050	42.9	41.6	45.3	55.3	41.0	55.0
1	4c	Kennedy Crossing Apartments	1,050	43.0	41.6	45.4	55.9	41.0	56.0
1	5a	Kennedy Crossing Apartments	1,100	44.0	41.3	45.9	49.5	40.0	50.0
1	5b	Kennedy Crossing Apartments	1,100	44.1	41.3	45.9	49.8	40.0	50.0
1	5c	Kennedy Crossing Apartments	1,100	44.2	41.3	46.0	50.1	40.0	51.0
1	6a	Kennedy Crossing Apartments	1,200	45.3	40.7	46.6	48.1	40.0	49.0
1	6b	Kennedy Crossing Apartments	1,200	45.4	40.7	46.7	48.3	40.0	49.0
1	6c	Kennedy Crossing Apartments	1,200	45.5	40.7	46.7	48.6	40.0	49.0
1	7a	Kennedy Crossing Apartments	1,300	46.7	40.2	47.6	48.5	39.0	49.0
1	7b	Kennedy Crossing Apartments	1,300	46.8	40.2	47.7	48.7	39.0	49.0
1	7c	Kennedy Crossing Apartments	1,300	46.9	40.2	47.7	48.9	39.0	49.0
2	8	City of Hammond Playground	940	44.9	42.3	46.8	50.5	41.0	51.0
3	9	7106 Maryland Avenue	875	36.1	42.8	43.6	40.9	42.8	45.0
3	10	7105 Kentucky Avenue	770	36.1	43.6	44.3	42.6	43.6	46.1
3	11	7109 Kentucky Avenue	720	36.1	44.1	44.7	42.6	44.1	46.4
3	12	7115 Kentucky Avenue	670	35.9	44.5	45.1	42.3	44.5	46.5
3	13	7119 Kentucky Avenue	620	35.8	45.0	45.5	42.2	45.0	46.8
3	14	7125 Kentucky Avenue	570	35.9	45.6	46.0	42.0	45.6	47.2
3	15	7129 Kentucky Avenue	520	35.9	46.2	46.6	41.9	46.2	47.6
3	16	7133 Kentucky Avenue	470	36.0	46.8	47.1	41.8	46.8	48.0
3	17	7139 Kentucky Avenue	420	36.2	47.6	47.9	41.6	47.6	48.6
3	18	7143 Kentucky Avenue	370	36.5	48.4	48.7	41.5	48.4	49.2
3	19	7147 Kentucky Avenue	316	36.8	49.4	49.6	41.4	49.4	50.0
4	20	3337 173rd Street	150	37.6	54.3	54.4	43.7	54.3	54.7
5	21	3343 173rd Street	60	43.1	60.3	60.4	45.6	60.3	60.4

CNE	Receptor	Address	Distance from Railroad	Existing (2019)			Build (2042)		
				TNM	Train	Total	TNM	Train	Total
5	22	3341 173rd Street	150	46.0	54.3	54.9	47.6	54.3	55.1
5	23	3337 173rd Street	135	43.9	55.0	55.3	46.3	55.0	55.5
5	24	3323 173rd Street	300	49.8	49.8	52.8	50.1	49.8	53.0
5	25	3321 173rd Street	364	49.9	48.5	52.3	50.2	48.5	52.4
5	26	3315 173rd Street	430	50.0	47.4	51.9	50.3	47.4	52.1
5	27	3311 173rd Street	425	48.1	47.5	50.8	49.1	47.5	51.4
5	28	3307 173rd Street	450	48.2	47.1	50.7	49.4	47.1	51.4
5	29	3305 173rd Street	480	48.3	46.7	50.6	49.8	46.7	51.5
5	30	3241 173rd Street	560	47.7	45.7	49.8	51.6	45.7	52.6
5	31	3235 173rd Street	600	49.0	45.3	50.5	53.7	45.3	54.3
5	32	3233 173rd Street	640	50.0	44.8	51.1	56.1	44.8	56.4
6	33	3219 173rd Street	770	51.4	43.6	52.1	53.3	43.0	54.0
6	34	7241 Parrish Avenue	800	52.5	43.4	53.0	53.3	43.0	54.0
6	35	7237 Parrish Avenue	745	51.1	43.8	51.8	52.4	43.0	53.0
6	36	7235 Parrish Avenue	715	50.5	44.1	51.4	52.0	43.0	53.0
6	37	7229 Parrish Avenue	670	50.3	44.5	51.3	51.8	44.0	52.0
6	38	7225 Parrish Avenue	585	47.9	45.4	49.8	51.1	45.0	52.0
6	39	7215 Parrish Avenue	515	47.7	46.3	50.1	50.0	45.0	51.0
6	40	7211 Parrish Avenue	482	47.8	46.7	50.3	49.8	46.0	51.0
6	41	7207 Parrish Avenue	390	47.8	48.1	51.0	49.3	47.0	51.0
6	42	7149 Parrish Avenue	336	51.2	49.0	53.2	51.7	48.0	53.0
6	43	7143 Parrish Avenue	278	51.2	50.3	53.8	51.6	49.0	54.0
6	44	7141 Parrish Avenue	210	51.3	52.1	54.7	51.4	51.0	54.0
6	45	7131 Parrish Avenue	168	51.5	53.6	55.7	51.4	53.0	55.0
6	46	7127 Parrish Avenue	127	52.1	55.4	57.1	51.7	54.0	56.0
6	47	7123 Parrish Avenue	85	52.0	58.0	59.0	51.2	57.0	58.0
7	48	7224 Parrish Avenue	830	55.4	43.1	55.6	55.8	42.0	56.0
7	49	7220 Parrish Avenue	750	55.4	43.8	55.7	55.7	43.0	56.0
7	50	7218 Parrish Avenue	675	55.4	44.5	55.7	55.7	44.0	56.0
7	51	7214 Parrish Avenue	615	55.4	45.1	55.8	55.6	44.0	56.0
7	52	7210 Parrish Avenue	550	55.3	45.8	55.8	55.6	45.0	56.0
8	53	3220 171st Place	80	42.4	58.4	58.5	44.2	58.0	58.0
8	54	3234 171st Place	115	41.1	56.0	56.1	44.2	55.0	55.0
8	55	3228 171st Place	140	40.3	54.7	54.9	44.8	54.0	54.0
8	56	3224 171st Place	150	39.7	54.3	54.4	45.0	53.0	54.0
8	57	3248 171st Place	210	38.7	52.1	52.3	45.5	51.0	52.0
8	58	3254 171st Place	240	38.2	51.2	51.4	46.0	50.0	51.0

CNE	Receptor	Address	Distance from Railroad	Existing (2019)			Build (2042)		
				TNM	Train	Total	TNM	Train	Total
8	59	3258 171st Place	290	37.7	50.0	50.2	46.9	49.0	51.0
8	60	7113 Kansas Avenue	505	36.6	46.4	46.8	51.9	46.0	53.0
8	61	7109 Kansas Avenue	530	36.7	46.1	46.6	52.4	45.0	53.0
8	62	7105 Kansas Avenue	610	36.9	45.2	45.8	52.4	44.0	53.0
8	63	7101 Kansas Avenue	670	37.2	44.5	45.2	52.3	44.0	53.0
8	64	7039 Kansas Avenue	720	37.9	44.1	45.0	52.5	43.0	53.0
8	65	7035 Kansas Avenue	795	39.1	43.4	44.8	52.5	43.0	53.0
8	66	3261 170th Place	780	39.8	43.5	45.0	49.0	43.0	50.0
8	67	3259 170th Place	710	40.1	44.2	45.6	47.3	43.0	49.0
8	68	3255 170th Place	690	40.3	44.3	45.8	46.8	43.0	48.0
8	69	3249 170th Place	660	40.7	44.6	46.1	46.5	44.0	48.0
8	70	3245 170th Place	630	41.1	44.9	46.4	46.5	44.0	48.0
8	71	3239 170th Place	605	41.5	45.2	46.7	46.6	44.0	49.0
8	72	3235 170th Place	565	42.2	45.7	47.3	46.7	45.0	49.0
8	73	3231 170th Place	530	42.9	46.1	47.8	46.6	45.0	49.0
8	74	3230 170th Place	395	42.5	48.0	49.1	44.5	47.0	49.0
8	75	3234 170th Place	425	41.7	47.5	48.5	44.4	47.0	49.0
8	76	3238 170th Place	460	41.0	47.0	48.0	44.4	46.0	48.0
8	77	3244 170th Place	490	40.5	46.6	47.6	44.5	46.0	48.0
8	78	3248 170th Place	520	39.9	46.2	47.1	44.7	45.0	48.0
8	79	3254 170th Place	565	39.4	45.7	46.6	45.1	45.0	48.0
8	80	3258 170th Place	625	38.9	45.0	46.0	45.8	44.0	48.0
8	81	3259 171st Place	410	38.3	47.7	48.2	46.1	47.0	50.0
8	82	3255 171st Place	380	38.7	48.2	48.7	45.4	47.0	49.0
8	83	3249 171st Place	345	39.3	48.9	49.4	44.8	48.0	50.0
8	84	3245 171st Place	305	40.0	49.7	50.1	44.2	49.0	50.0
8	85	7028 Idaho Avenue	420	48.0	47.6	50.8	47.5	47.0	50.0
8	86	7027 Parrish Avenue	370	51.5	48.4	53.2	48.8	48.0	51.0
8	87	7031 Parrish Avenue	320	51.5	49.4	53.6	48.4	48.0	51.0
8	88	7035 Parrish Avenue	270	51.4	50.5	54.0	48.1	50.0	52.0
8	89	7039 Parrish Avenue	230	51.4	51.5	54.5	48.0	51.0	53.0
8	90	7036 Idaho Boulevard	375	45.6	48.3	50.2	45.7	47.0	49.0
8	91	7050 Idaho Boulevard	310	45.6	49.6	51.1	45.1	49.0	50.0
9	92	7027 Carolina Court	200	55.4	52.4	57.2	51.3	52.0	55.0
9	93	7023 Carolina Court	260	55.3	50.7	56.6	51.4	50.0	54.0
9	94	7015 Carolina Court	305	55.4	49.7	56.4	51.5	49.0	53.0
9	95	7011 Carolina Court	365	55.3	48.5	56.1	51.4	48.0	53.0

CNE	Receptor	Address	Distance from Railroad	Existing (2019)			Build (2042)		
				TNM	Train	Total	TNM	Train	Total
9	96	3139 170th Street	525	55.4	46.1	55.9	51.2	45.0	52.0
9	97	3135 170th Street	500	51.5	46.4	52.7	49.7	46.0	51.0
9	98	3131 170th Street	455	48.7	47.1	51.0	48.2	46.0	50.0
9	99	3127 170th Street	430	46.9	47.4	50.2	47.2	47.0	50.0
9	100	3123 170th Street	390	45.4	48.1	50.0	46.1	47.0	50.0
9	101	3119 170th Street	370	45.1	48.4	50.1	46.0	48.0	50.0
10	102	7018 Carolina Court	220	45.7	51.8	52.8	44.1	51.0	52.0

Note: For the analysis of Existing conditions, train and train horn noise are applicable to all evaluated receptors. With the Build Alternative, the crossing at Parrish Avenue would be closed so only train noise (i.e., no horn noise) was added to the receptors in the vicinity of the crossing. Shading denotes the receptors for with both horn and train noise were considered.

Parrish Avenue Bridge Over Norfolk Southern Railway

APPENDIX D: FIELD DATA SHEETS

CMT

MEMORANDUM
Parrish Avenue Bridge, Des No. 1801907

DATE: July 26, 2019

SUBJECT: Noise Measurement Plan and Explanation of Property NAC Classifications

Noise Study Area Notes

The Parrish Avenue Bridge noise study area was drawn to incorporate all areas within 500 feet perpendicular to the new alignment of Parrish Avenue. The 500-foot noise study area for the local connector streets included in the project area falls within the overall Parrish Avenue noise study area and is not depicted separately.

Several areas were identified as classifiable within a noise-sensitive Noise Abatement Criteria (NAC) activity category but were excluded from further assessment for site-specific reasons:

The Hessville Little League park located in the southwest corner of the noise study area and owned by the City of Hammond has only a parking lot and no exterior areas of frequent human use within 500 feet of the proposed project alignment. If this preliminary finding is verified during field measurements, this NAC Activity Category C property will be excluded from further analysis.

The barber shop on the northeast corner of Parrish Avenue and 173rd Street is a NAC Activity Category E property, but has no exterior areas of frequent human use. If this preliminary finding is verified during field measurements, this property will be excluded from further analysis.

The southernmost edges of the Lung Wah and Tacos El Guero restaurant properties on 169th Street east of Parrish Avenue fall just within the noise study area. Neither of these NAC Activity Category E properties has exterior areas of frequent human use. For these reasons, these properties are excluded from further analysis unless initial noise modeling shows noise impacts at the edge of the noise study area.

Common Noise Environments/Representative Receptors (CNE/RR)

CNE/RR-1: 170th Street residential neighborhood. The RR is placed closest to the future alignment of the relocated Parrish Avenue.

CNE/RR-2: Park in 170th Street residential neighborhood. The RR is placed at the park's gazebo.

CNE/RR-3: 171st Street West residential neighborhood. The RR is placed in the rear yard of the residence closest to the relocated Parrish Avenue on ground level profile.

CNE/RR-4: 173rd & Parrish West residential neighborhood. The RR is placed at the front entry of the residence closest to the future intersection of Parrish Avenue and 173rd Street. Additional points will be modeled during noise analysis to ensure the worst case location is identified.

CNE/RR-5: 172nd Street West residential neighborhood. The RR is placed closest to the existing Parrish Avenue and 173rd Street.

CNE/RR-6: Kennedy Crossing Apartments. The RR is placed at the apartment patio closest to the future Parrish Avenue.

Crawford, Murphy & Tilly Centered in Value

8790 Purdue Road Indianapolis, Indiana 46268 PHONE 317.298.4500 FAX 317.298.4503 cmtengr.com Engineers and Consultants

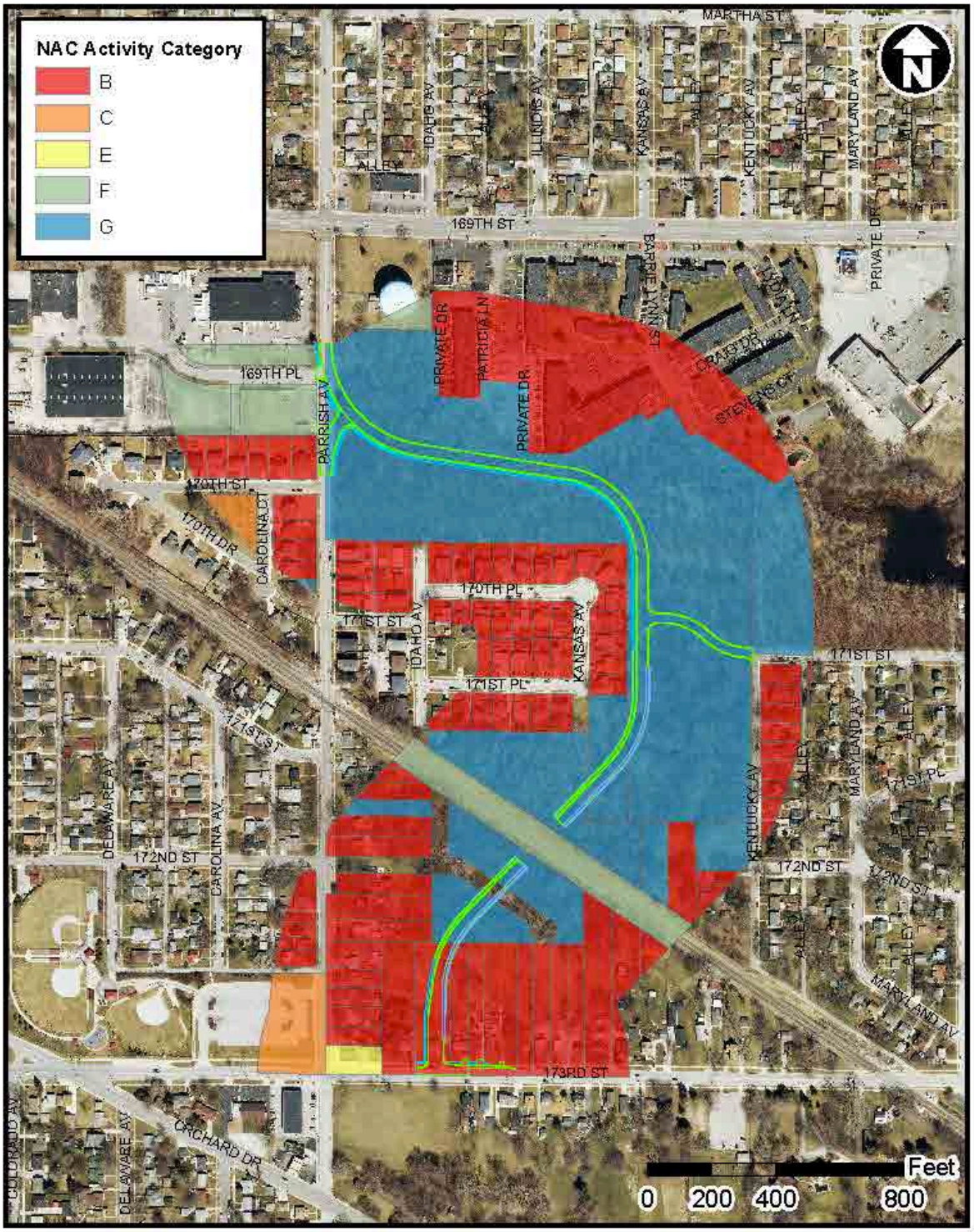
CNE/RR-7: 171st Street East residential neighborhood. The RR is placed in the rear yard of the residence closest to the relocated Parrish Avenue and the local street connector at 171st Street.

CNE/RR-8: 172nd Street East residential neighborhood. The RR is placed in the residential backyard nearest the relocated Parrish Avenue.

CNE/RR-9: 173rd Street East residential neighborhood. The RR is placed at the front entry of the residence closest to the future intersection of Parrish Avenue and 173rd Street.

Pending RR: A playground that is apparently associated with the Kennedy Crossing Apartments is located on property owned by the City of Hammond. Additional guidance is being sought from the city to determine the proper handling of this receptor area. If it is determined that the city's property serves a recreational function, it will be considered CNE-10 and the playground will be RR-10. The city's property will be reclassified within NAC Activity Category C.

Note: The extension from Governors Parkway to 171st Street is not part of the current project.

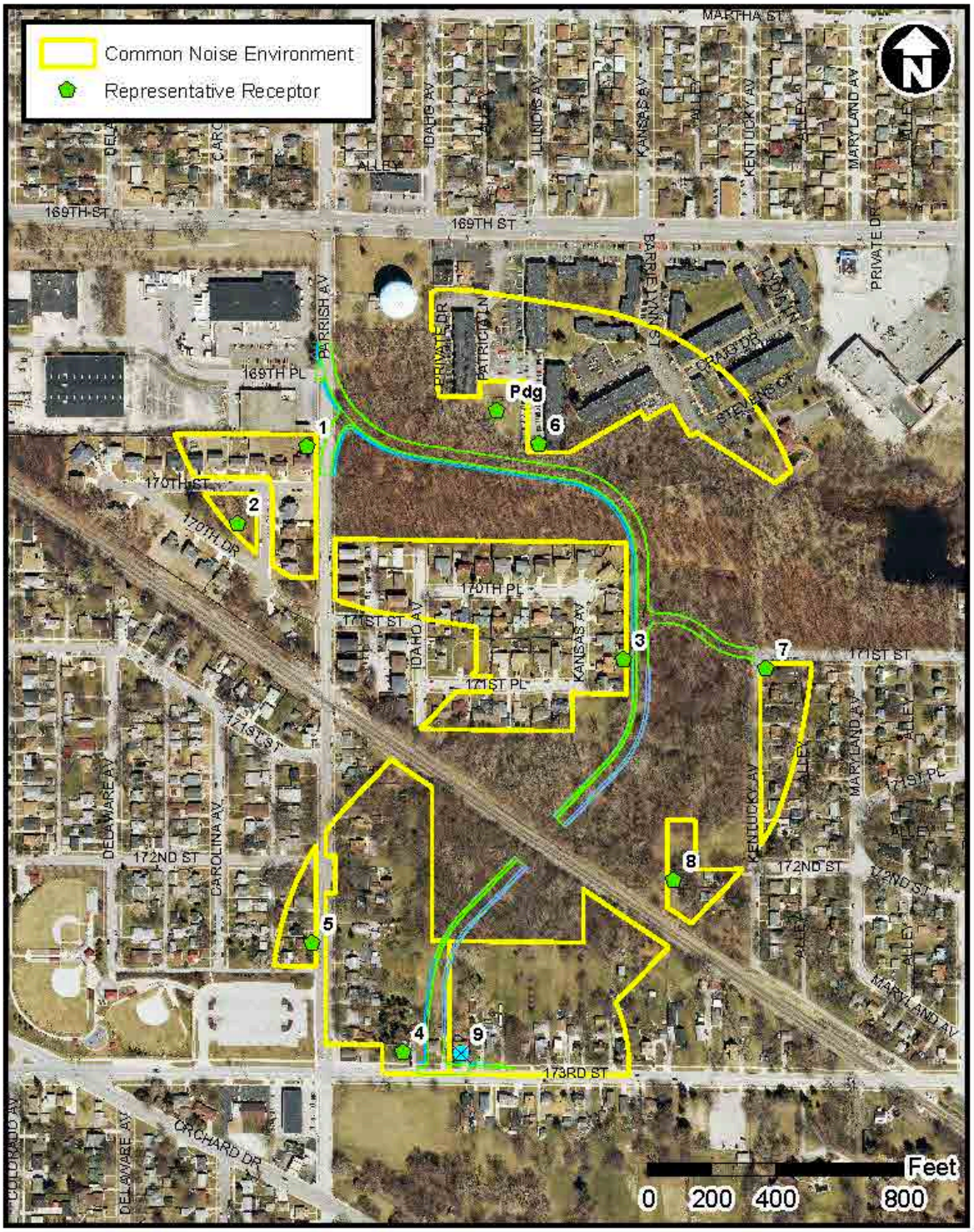


Parrish Avenue Bridge, Des No. 1801907

NAC LAND USE ACTIVITY CATEGORIES

CMT
Crawford, Murphy & Tilly

Note: The extension from Governors Parkway to 171st Street is not part of the current project.conclu



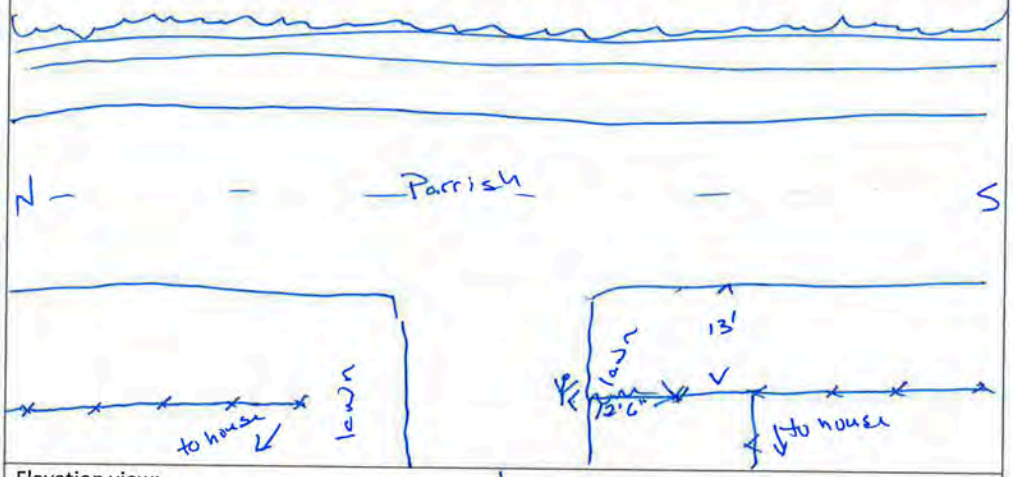
Parrish Avenue Bridge, Des No. 1801907

NAC LAND USE ACTIVITY CATEGORIES

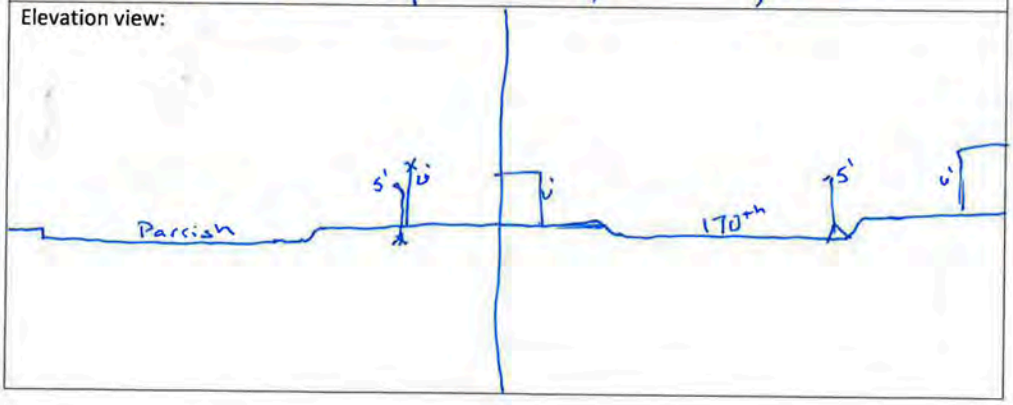
CMT
Crawford, Murphy & Tilly

Site ID:	RR-1 3139 170th St		Location	Parrish Ave RR	
Observer	JKM	Date	9/15/2019	Count location	RR-1
Temperature	66.9°F	Cloud cover	Overcast	Humidity	
Wind direction	N	Wind speed, avg	Calm	Wind speed, max	0.44 m/s = 1 mph
Start time	07:15	Stop time	07:30	Leq/avg and Lmax	66.4 dB 81.8 dB

Plan view:



Elevation view:



Traffic Count 7:15 am to 7:30 am

Parish

Primary roadway/direction: NB		
Cars 𝍸 𝍸 𝍸 𝍸 𝍸 ||||	Med Trucks ||	Heavy Trucks

Parish

Primary roadway/2nd direction: SB		
Cars 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 |||	Med Trucks |	Heavy Trucks

170th

Secondary roadway/direction: EB (onto Parish)		
Cars 𝍸 𝍸	Med Trucks	Heavy Trucks

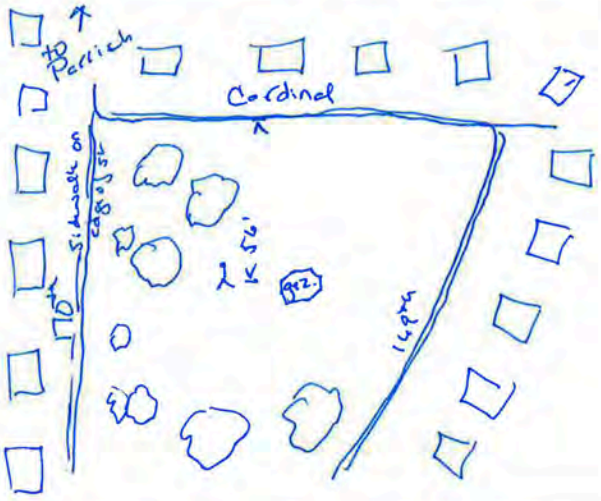
170th

Secondary roadway/2nd direction: WB (onto 170th)		
Cars |||	Med Trucks	Heavy Trucks

2.4 – sic
2.38 sic

Site ID:	Parrish View Subdivision Gazebo		Location	Parrish Ave RR	
Observer	JKM	Date	09/15/2019	Count location	RR - 2
Temperature	44.9°F	Cloud cover	Overcast	Humidity	90%
Wind direction	N	Wind speed, avg	Calm	Wind speed, max	1.2 m/s ≈ 3 mph
Start time	07:35	Stop time	07:50	Leq/avg and Lmax	45.4 dB 57.7 dB

Plan view:



Elevation view:

Traffic Count

Parish

Primary roadway/direction: NB		
Cars 𝍸 𝍸 𝍸 I	Med Trucks	Heavy Trucks

Parish

Primary roadway/2nd direction: SB		
Cars 𝍸 𝍸	Med Trucks I	Heavy Trucks II

170th

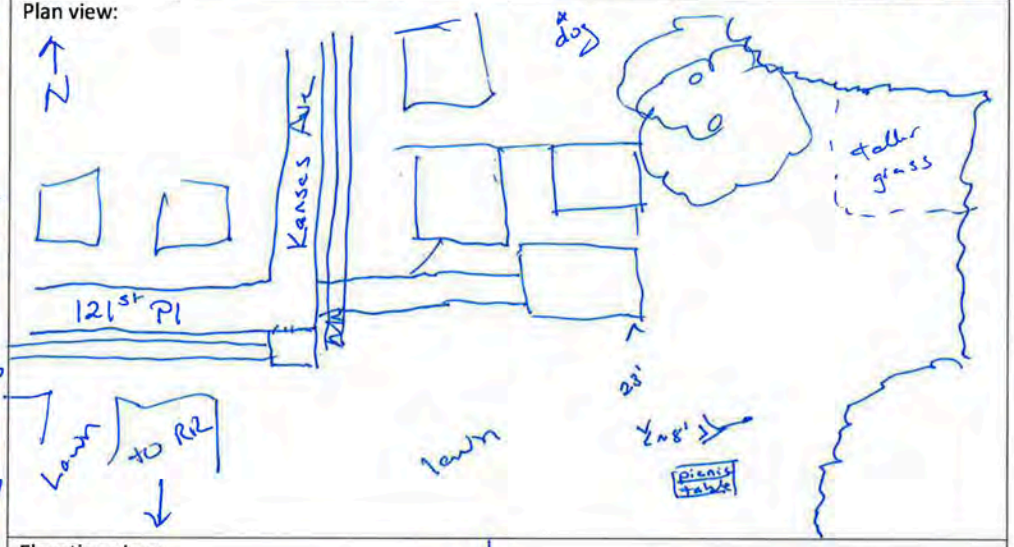
Secondary roadway/direction: EB (onto Parish)		
Cars III	Med Trucks	Heavy Trucks

170th

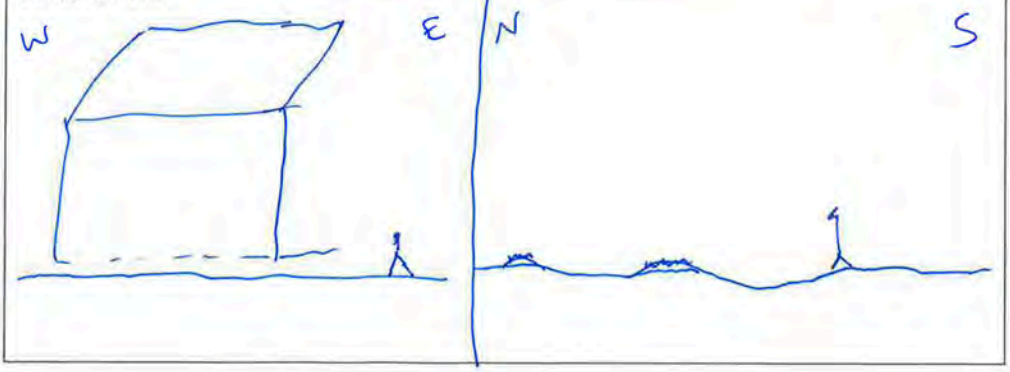
Secondary roadway/2nd direction: WB (off of Parish)		
Cars II	Med Trucks	Heavy Trucks

Site ID:	Kansas Ave		Location	Parrish Ave RR	
Observer	JKM	Date	09/15/2019	Count location	RR-3
Temperature	79.2°F	Cloud cover	<20%	Humidity	65%
Wind direction	E	Wind speed, avg	Calm	Wind speed, max	0.4 m/s ≈1 mph
Start time	15:28	Stop time	15:58	Leq/avg and Lmax	53.9 dB 74.2 dB

Plan view:



Elevation view:



RR horn around 6 min - train nearby - crossing bells
Dog barking occasionally - might house N
Plane 27:15

3:25

Parish

Traffic Count

Primary roadway/direction: NB		
Cars	Med Trucks	Heavy Trucks

← N

Parish

Primary roadway/2nd direction: SB		
Cars	Med Trucks	Heavy Trucks

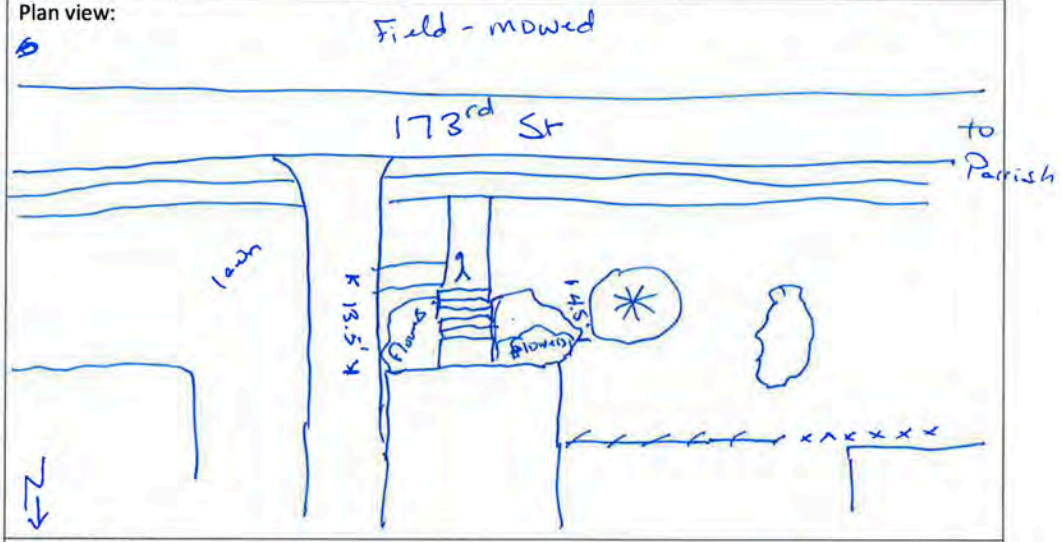
S →

Secondary roadway/direction:		
Cars	Med Trucks	Heavy Trucks

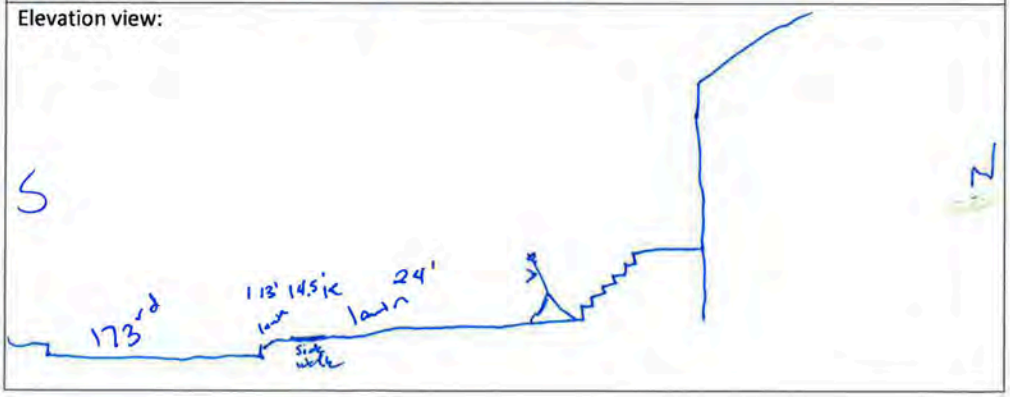
Secondary roadway/2nd direction:		
Cars	Med Trucks	Heavy Trucks

Site ID:	3219 173rd St		Location	Parrish Ave RR	
Observer	JKM	Date	09/15/2019	Count location	RR-4
Temperature	78.9°F	Cloud cover	30%	Humidity	63%
Wind direction	E	Wind speed, avg	Calm	Wind speed, max	0.4 m/s = 1 mph
Start time	16:28	Stop time	16:43	Leq/avg and Lmax	57.1 dB 66.7 dB

Plan view:



Elevation view:



4:30

Traffic Count

Parish

Primary roadway/direction: NB		
Cars	Med Trucks	Heavy Trucks
𝍸 𝍸 𝍸 𝍸 I		

←

Parish

Primary roadway/2nd direction: SB		
Cars	Med Trucks	Heavy Trucks
𝍸 𝍸 𝍸 𝍸 𝍸 III		

→

173

Secondary roadway/direction: EB		
Cars	Med Trucks	Heavy Trucks
𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 I		

↑

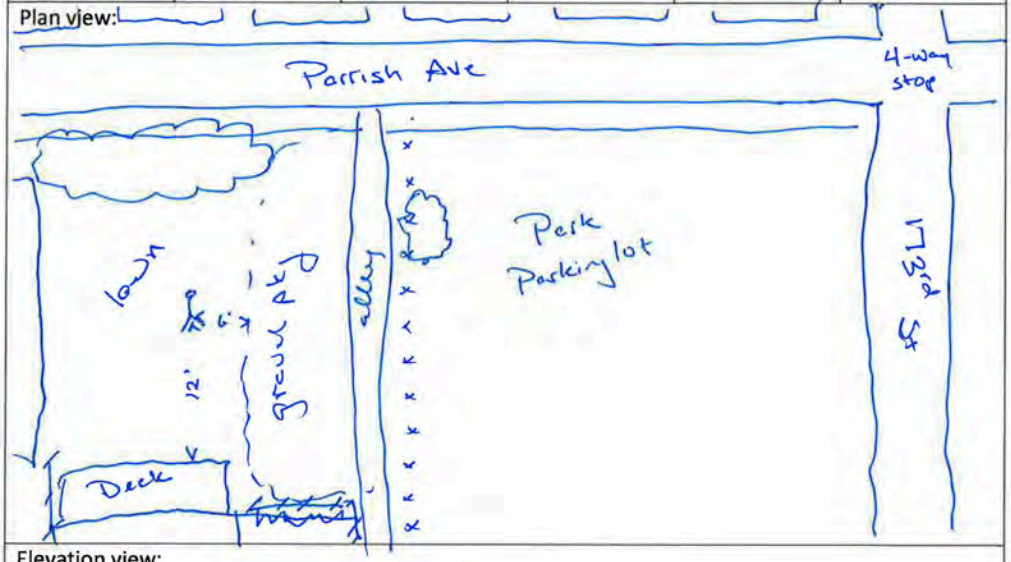
173

Secondary roadway/2nd direction: WB		
Cars	Med Trucks	Heavy Trucks
𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 III		

↓

Site ID:	7220 Parrish Ave		Location	Parrish Ave RR	
Observer	JKM	Date	09/15/2019	Count location	RR-5
Temperature	78.8	Cloud cover	30%	Humidity	64%
Wind direction	Calm	Wind speed, avg	Calm	Wind speed, max	Calm
Start time	16:07	Stop time	16:22	Leq/avg and Lmax	58.1 dB 77.9 dB

Plan view:



Elevation view:

10:54 loud motor sounds, passing car
10:25 loud bass, passing car
13:34 Airplane

4:15

Traffic Count

Primary roadway/direction: NB		
Cars	Med Trucks	Heavy Trucks
𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 |	|	

Parish

Primary roadway/2nd direction: SB		
Cars	Med Trucks	Heavy Trucks
𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 ||||		

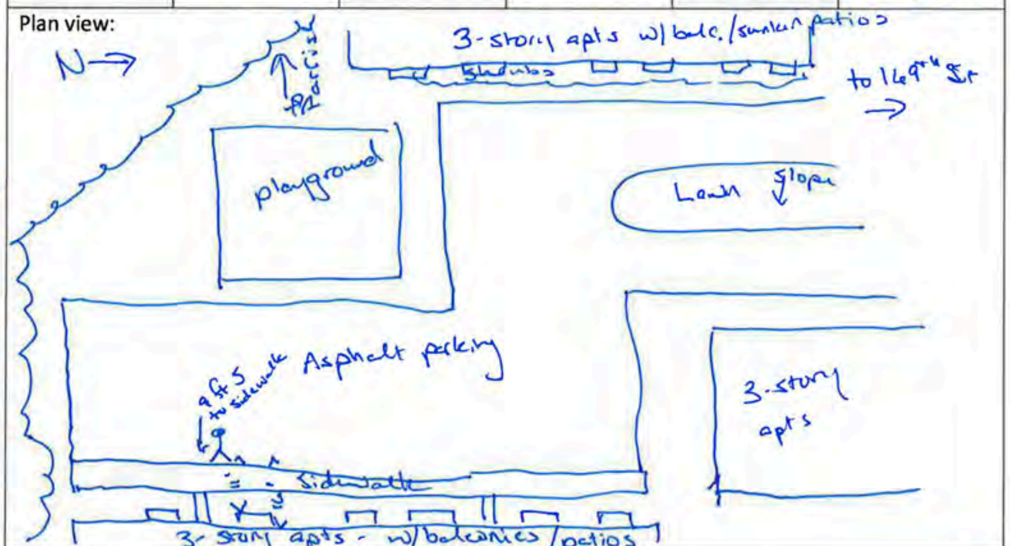
Parish

173 ~~Parish~~ Secondary roadway/direction: EB		
Cars	Med Trucks	Heavy Trucks
𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 |	||	

173 ~~Parish~~ Secondary roadway/2nd direction: WB		
Cars	Med Trucks	Heavy Trucks
𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 ||	||	

Site ID:	4945 Patricia Ct (Kennedy Apts)		Location	Parrish Ave RR	
Observer	JKM	Date	09/15/2019	Count location	RR - 6
Temperature	79.6°F	Cloud cover	90% (thin)	Humidity	65 %
Wind direction	N to W variable	Wind speed, avg	Calm	Wind speed, max	1 m/s ≈ 2 mph
Start time	14:30	Stop time	15:00	Leq/avg and Lmax	53.4 dB 65.8 dB

Plan view:



Elevation view:

Helicopter 13:33 Car arrived 25:45
Dumpster lid 15:12 Car depart 26:17 (on) - 27:55 (loose)
Car depart 27:27
Counting Parrish Car depart 27:48 ; 28:46
Car waiting 00:35
Car arriving + 100 ft away 8:30

Traffic Count

Parish

Primary roadway/direction: NB		
Cars	Med Trucks	Heavy Trucks
卌 卌 卌 卌 卌 卌 卌 卌 卌 卌 卌 卌 卌 卌 卌	|||	

N ←

Parish

Primary roadway/2nd direction: SB		
Cars	Med Trucks	Heavy Trucks
卌 卌 卌 卌 卌 卌 卌 卌 卌 卌 卌 ||||	|	

→ S

17th

Secondary roadway/direction: WB (onto)		
Cars	Med Trucks	Heavy Trucks

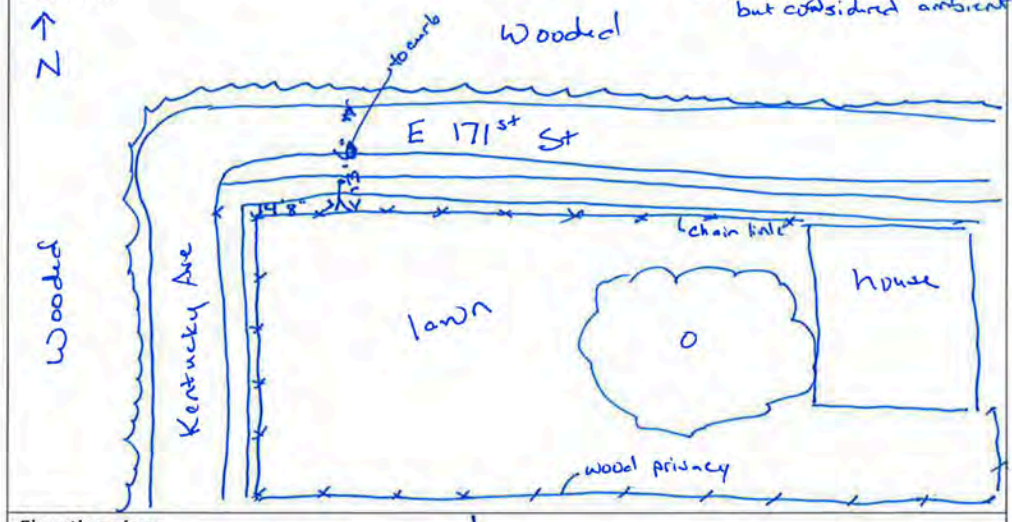
17th

Secondary roadway/2nd direction: EB (onto Parish)		
Cars	Med Trucks	Heavy Trucks

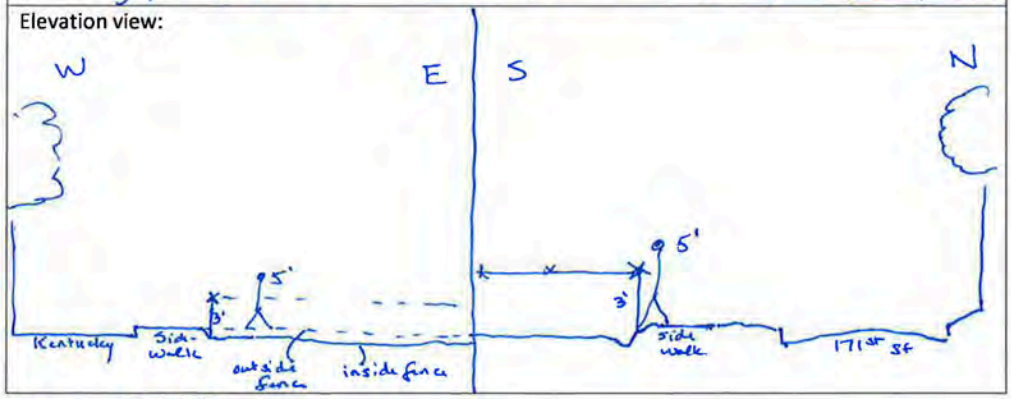
Site ID:	c/o 171st : Kentucky		Location	Parrish Ave RR	
Observer	JKM	Date	09/15/2019	Count location	RR-7
Temperature	79.2	Cloud cover	Overcast	Humidity	
Wind direction	E → S	Wind speed, avg	Calm	Wind speed, max	1.1 m/s ≈ 2mph
Start time	12:58	Stop time	13:28	Leq/avg and Lmax	48.2 dB 68.3 dB

Plan view:

* Country 173rd St but considered ambient



Elevation view:



Helicopter 7:30

Cars WB/SB

Cars EB/NB

173

Traffic Count 1:00 PM – 1:30 PM

Primary roadway/direction: EB		
Cars	Med Trucks	Heavy Trucks

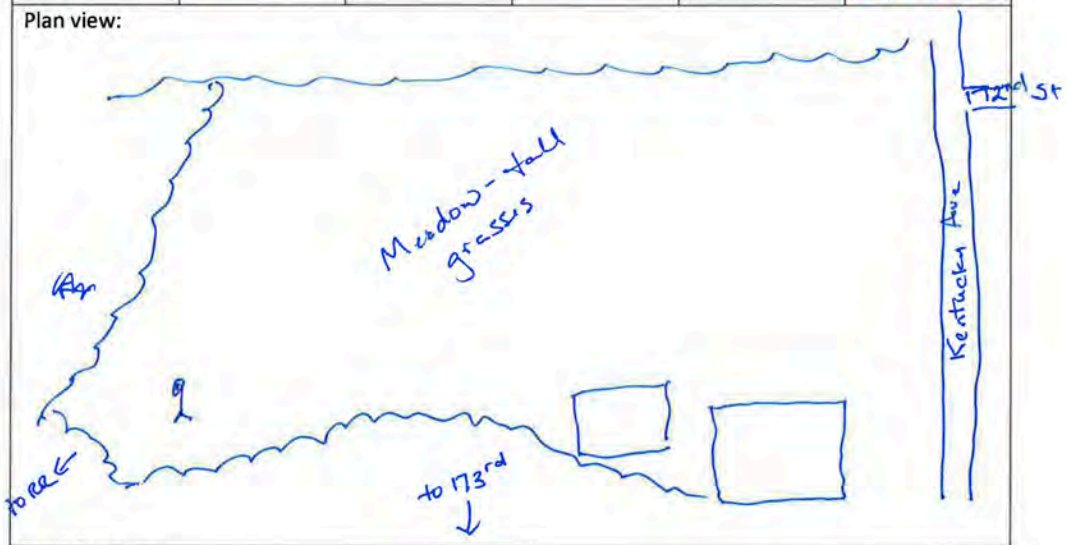
Primary roadway/2nd direction: WB		
Cars	Med Trucks	Heavy Trucks

Secondary roadway/direction:		
Cars	Med Trucks	Heavy Trucks

Secondary roadway/2nd direction:		
Cars	Med Trucks	Heavy Trucks

Site ID:	7105 Kentucky Ave		Location	Parrish Ave RR	
Observer	JKM	Date	09/15/2019	Count location	RR-8
Temperature	78.5°F	Cloud cover	+80%	Humidity	
Wind direction	E	Wind speed, avg	1.2 m/s ≈ 3 mph	Wind speed, max	2.4 m/s = 5.5 mph
Start time	13:39	Stop time	14:09	Leq/avg and Lmax	51.8 dB 64.6 dB

Plan view:



Elevation view:

level site - N/S and E/W
Counting 173rd but considered ambient

Near-constant jet noise - when one finishes passing, next starts

173

Traffic Count

Primary roadway/direction: EB		
Cars	Med Trucks	Heavy Trucks
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Primary roadway/2nd direction: WB		
Cars	Med Trucks	Heavy Trucks
卌 卌 卌 卌 卌 卌 卌 |	|	

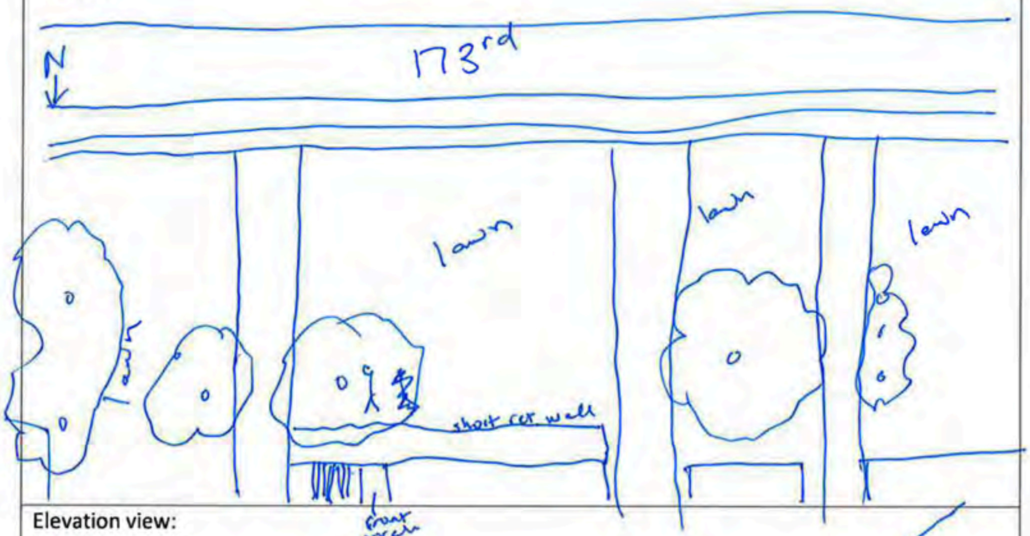
Secondary roadway/direction:		
Cars	Med Trucks	Heavy Trucks

Secondary roadway/2nd direction:		
Cars	Med Trucks	Heavy Trucks

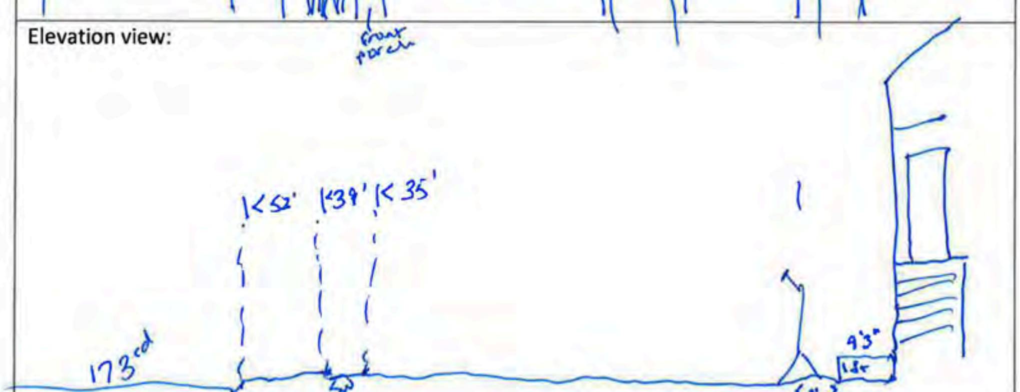
4.00 sec (slow)
2.89 sec
2.83
2.79

Site ID:	3241 E. 173rd St		Location	Parrish Ave RR	
Observer	JKM	Date	09/15/2019	Count location	RR-9
Temperature	78.8°F	Cloud cover	20%	Humidity	63%
Wind direction	N	Wind speed, avg	Calm	Wind speed, max	1.4 m/s =3 mph
Start time	16:47	Stop time	17:02:30	Leq/avg and Lmax	54.6 dB 65.9 dB

Plan view:



Elevation view:



4:45

Traffic Count

Parish

Primary roadway/direction: NB		
Cars	Med Trucks	Heavy Trucks
𝍸 𝍸 𝍸 𝍸 𝍸 | | |		

←

Parish

Primary roadway/2nd direction: SB		
Cars	Med Trucks	Heavy Trucks
𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 | | | |		

→

173

Secondary roadway/direction: EB		
Cars	Med Trucks	Heavy Trucks
𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 | | | |		

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173

Secondary roadway/2nd direction: WB		
Cars	Med Trucks	Heavy Trucks
𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 | | | |		

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NMP-1

Session Report

9/23/2019

Information Panel

Name	S029
Start Time	9/17/2019 7:14:18 AM
Stop Time	9/17/2019 7:29:19 AM
Device Name	BGI050008
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Calibration History

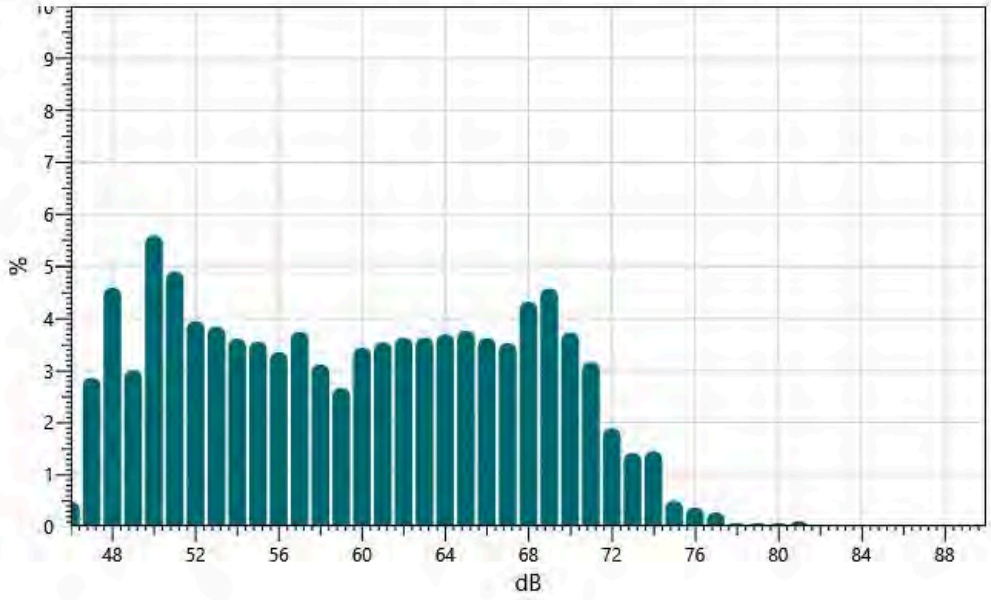
Date	Calibration Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
9/17/2019 7:07:48 AM	Calibration	114.0			

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	66.3 dB	L10	1	70.7 dB
L90	1	49.6 dB	Lmax	1	81.8 dB
L50	1	60.1 dB	Rtime	1	00:15:01
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF

Statistics Chart

S029: Statistics Chart

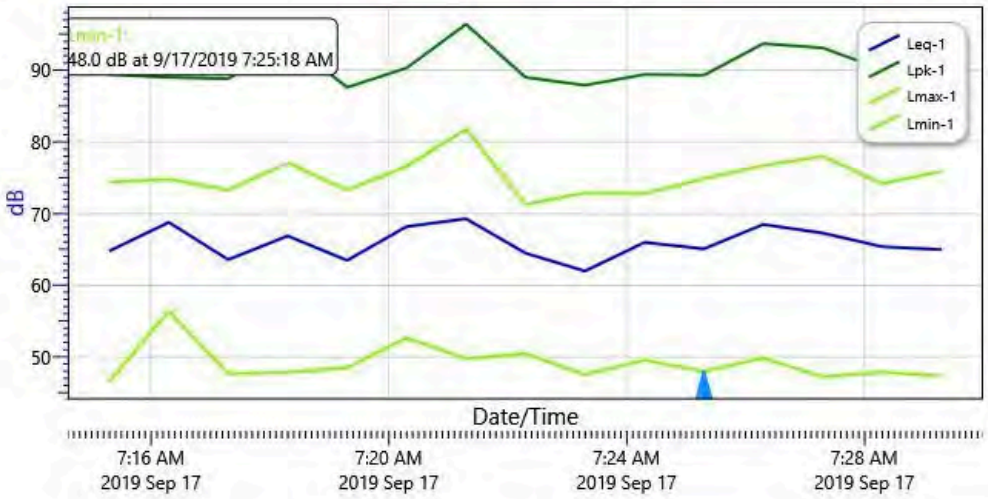


Logged Data Table

Date/Time	Leq-1
9/17/2019 7:15:18 AM	64.8
7:16:18 AM	68.8
7:17:18 AM	63.6
7:18:18 AM	66.9
7:19:18 AM	63.5
7:20:18 AM	68.2
7:21:18 AM	69.3
7:22:18 AM	64.5
7:23:18 AM	62
7:24:18 AM	66
7:25:18 AM	65.1
7:26:18 AM	68.5
7:27:18 AM	67.3
7:28:18 AM	65.4
7:29:18 AM	65

Logged Data Chart

S029: Logged Data Chart



NMP-2

Session Report

9/23/2019

Information Panel

Name	S030
Start Time	9/17/2019 7:34:51 AM
Stop Time	9/17/2019 7:49:52 AM
Device Name	BGI050008
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Calibration History

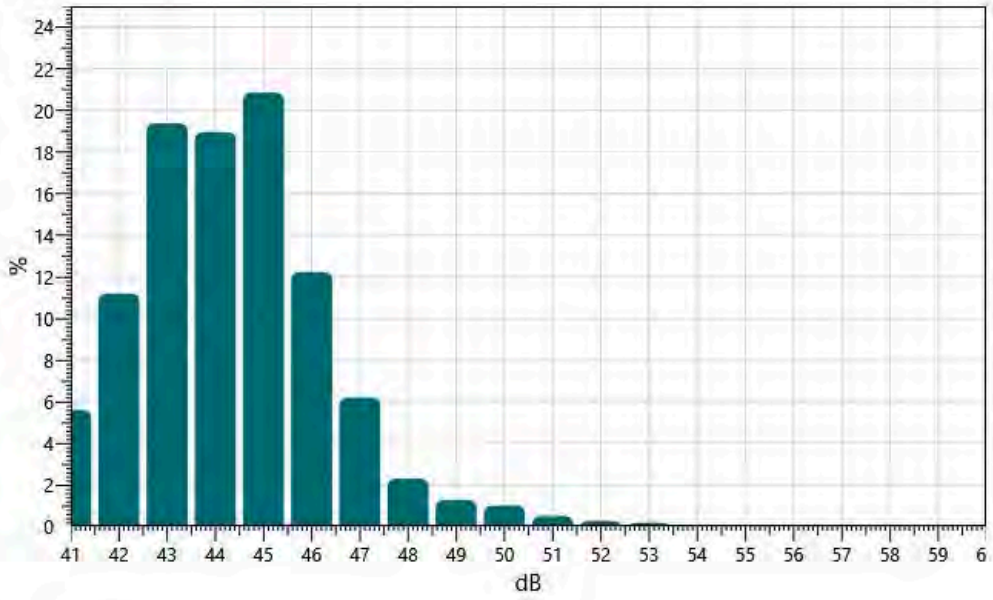
Date	Calibration Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
9/17/2019 7:07:48 AM	Calibration	114.0			

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	45.3 dB	L10	1	47 dB
L90	1	42.3 dB	Lmax	1	57.7 dB
L50	1	44.6 dB	Rtime	1	00:15:01
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF

Statistics Chart

S030: Statistics Chart

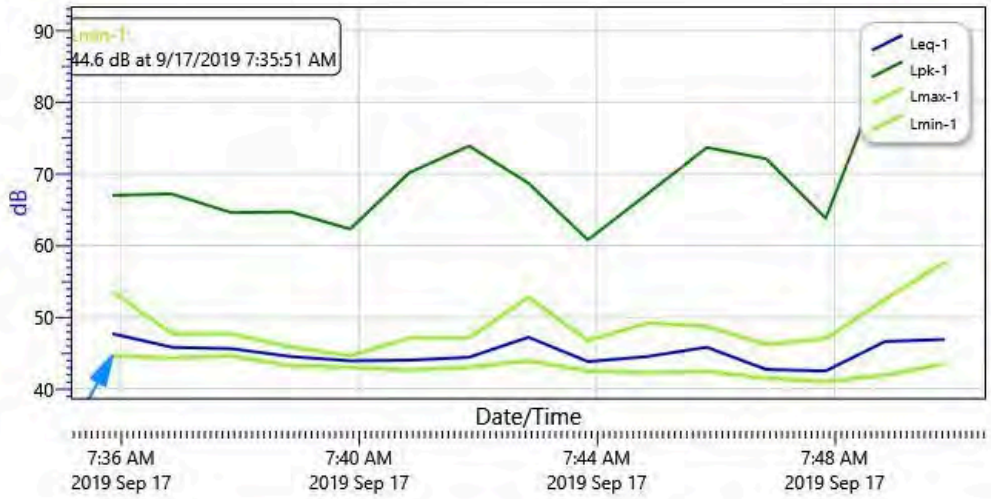


Logged Data Table

Date/Time	Leq-1
9/17/2019 7:35:51 AM	47.7
7:36:51 AM	45.8
7:37:51 AM	45.6
7:38:51 AM	44.5
7:39:51 AM	43.9
7:40:51 AM	44
7:41:51 AM	44.4
7:42:51 AM	47.2
7:43:51 AM	43.8
7:44:51 AM	44.5
7:45:51 AM	45.8
7:46:51 AM	42.7
7:47:51 AM	42.5
7:48:51 AM	46.6
7:49:51 AM	46.9

Logged Data Chart

S030: Logged Data Chart



NMP-3

Session Report

9/23/2019

Information Panel

Name	S031
Start Time	9/17/2019 12:58:10 PM
Stop Time	9/17/2019 1:28:11 PM
Device Name	BGI050008
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Calibration History

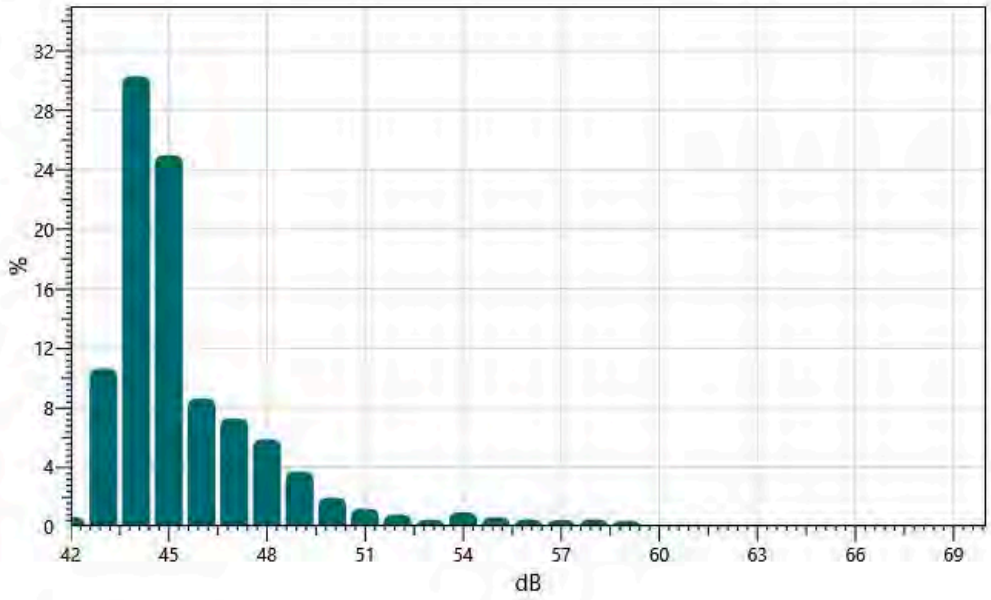
Date	Calibration Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
9/17/2019 7:07:48 AM	Calibration	114.0			

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	48.1 dB	L10	1	49.3 dB
L90	1	43.8 dB	Lmax	1	68.3 dB
L50	1	45.1 dB	Rtime	1	00:30:01
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF

Statistics Chart

S031: Statistics Chart



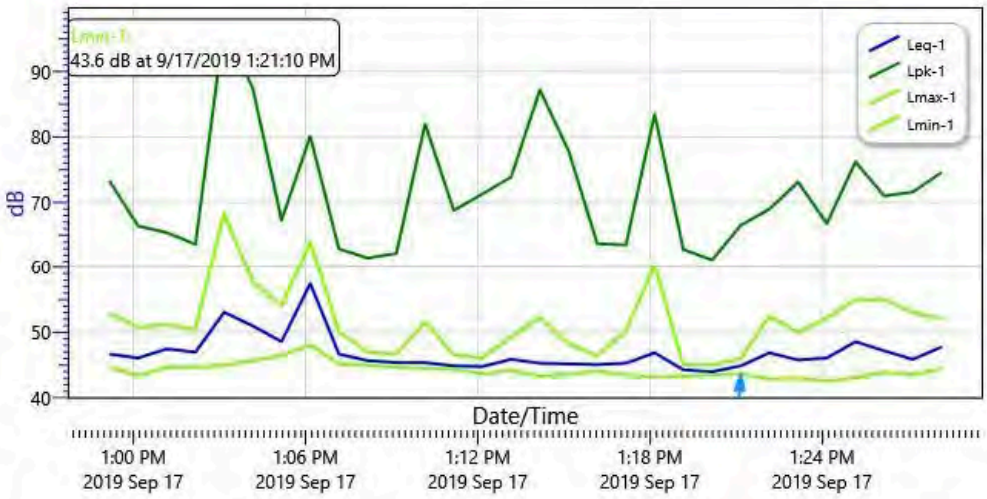
Logged Data Table

Date/Time	Leq-1
9/17/2019 12:59:10 PM	46.6
1:00:10 PM	46
1:01:10 PM	47.4
1:02:10 PM	46.9
1:03:10 PM	53
1:04:10 PM	50.9
1:05:10 PM	48.5
1:06:10 PM	57.4
1:07:10 PM	46.6
1:08:10 PM	45.6
1:09:10 PM	45.3
1:10:10 PM	45.3
1:11:10 PM	44.8
1:12:10 PM	44.7
1:13:10 PM	45.8
1:14:10 PM	45.2

1:15:10 PM	45.1
1:16:10 PM	45
1:17:10 PM	45.2
1:18:10 PM	46.8
1:19:10 PM	44.2
1:20:10 PM	43.9
1:21:10 PM	44.8
1:22:10 PM	46.8
1:23:10 PM	45.7
1:24:10 PM	46
1:25:10 PM	48.5
1:26:10 PM	47.1
1:27:10 PM	45.8
1:28:10 PM	47.7

Logged Data Chart

S031: Logged Data Chart



NMP-4

Session Report

9/23/2019

Information Panel

Name	S032
Start Time	9/17/2019 1:38:23 PM
Stop Time	9/17/2019 2:08:24 PM
Device Name	BGI050008
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Calibration History

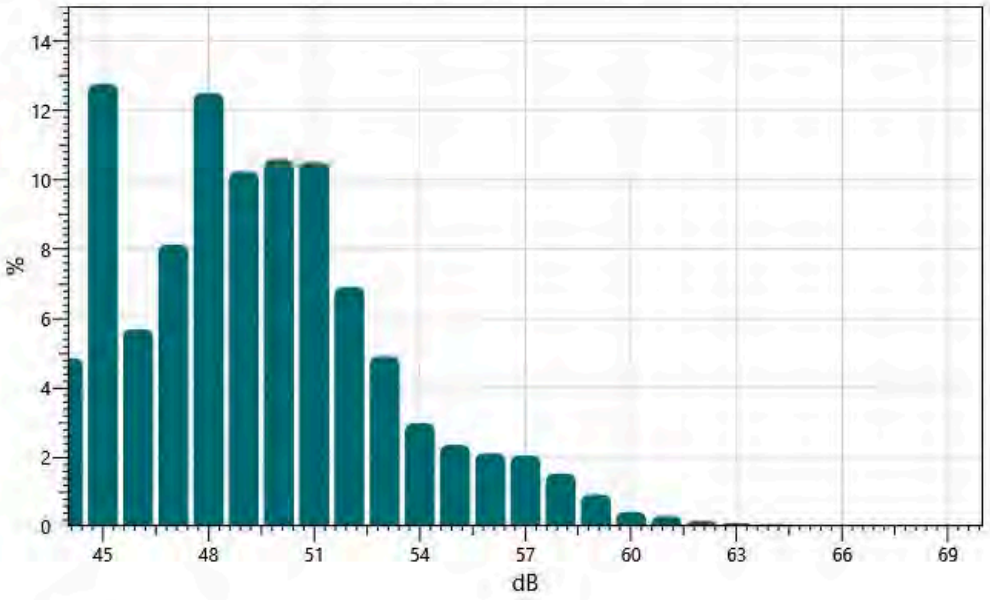
Date	Calibration Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
9/17/2019 7:07:48 AM	Calibration	114.0			

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	51.7 dB	L10	1	54.8 dB
L90	1	45.2 dB	Lmax	1	64.6 dB
L50	1	49.4 dB	Rtime	1	00:30:01
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF

Statistics Chart

S032: Statistics Chart



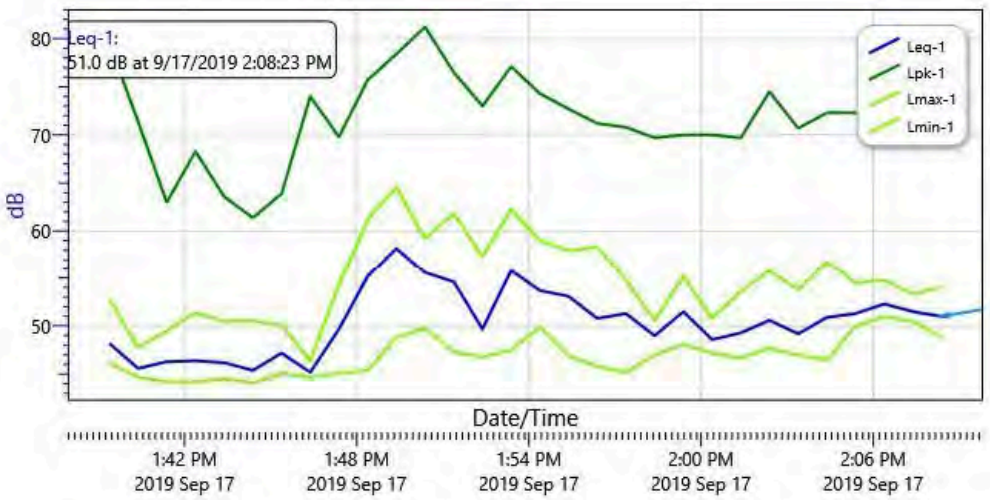
Logged Data Table

Date/Time	Leq-1
9/17/2019 1:39:23 PM	48.2
1:40:23 PM	45.6
1:41:23 PM	46.3
1:42:23 PM	46.4
1:43:23 PM	46.2
1:44:23 PM	45.4
1:45:23 PM	47.2
1:46:23 PM	45.2
1:47:23 PM	49.7
1:48:23 PM	55.2
1:49:23 PM	58.2
1:50:23 PM	55.6
1:51:23 PM	54.6
1:52:23 PM	49.7
1:53:23 PM	55.8
1:54:23 PM	53.7

1:55:23 PM	53.1
1:56:23 PM	50.8
1:57:23 PM	51.3
1:58:23 PM	49
1:59:23 PM	51.5
2:00:23 PM	48.6
2:01:23 PM	49.3
2:02:23 PM	50.6
2:03:23 PM	49.2
2:04:23 PM	50.9
2:05:23 PM	51.3
2:06:23 PM	52.3
2:07:23 PM	51.5
2:08:23 PM	51

Logged Data Chart

S032: Logged Data Chart



NMP-5

Session Report

9/23/2019

Information Panel

Name	S033
Start Time	9/17/2019 2:29:32 PM
Stop Time	9/17/2019 2:59:33 PM
Device Name	BGI050008
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Calibration History

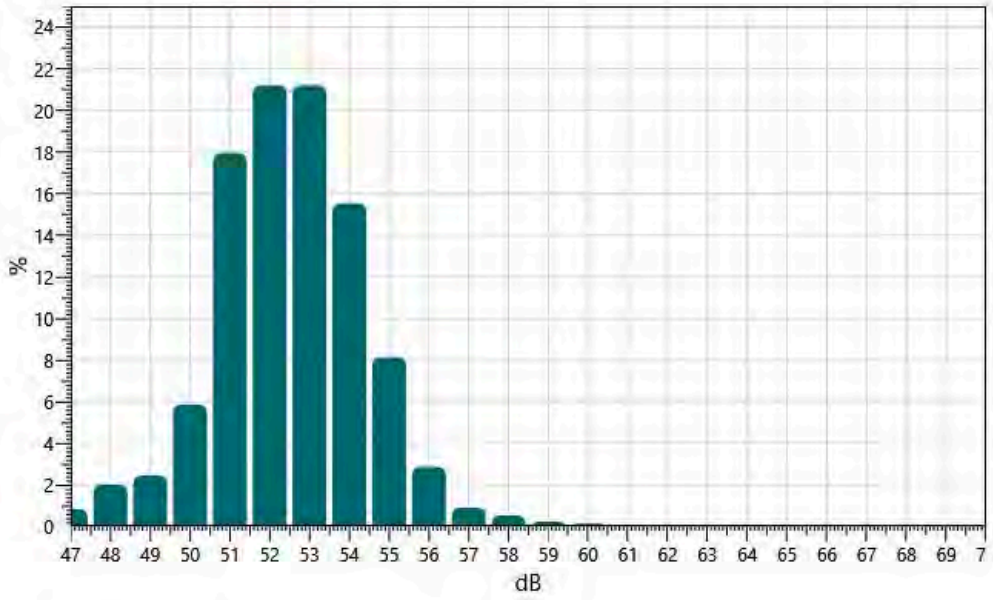
Date	Calibration Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
9/17/2019 7:07:48 AM	Calibration	114.0			

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	53.4 dB	L10	1	55.1 dB
L90	1	50.7 dB	Lmax	1	65.8 dB
L50	1	52.8 dB	Rtime	1	00:30:01
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF

Statistics Chart

S033: Statistics Chart



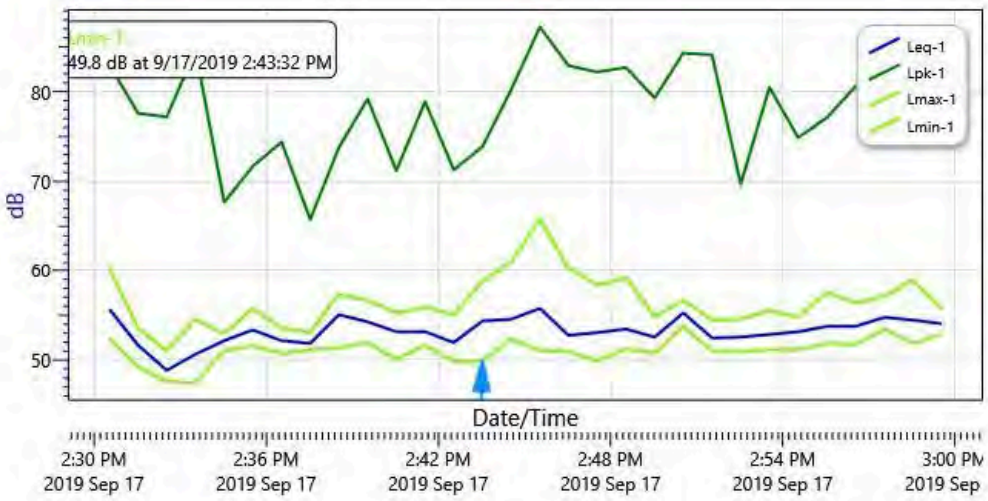
Logged Data Table

Date/Time	Leq-1
9/17/2019 2:30:32 PM	55.6
2:31:32 PM	51.6
2:32:32 PM	48.8
2:33:32 PM	50.6
2:34:32 PM	52.1
2:35:32 PM	53.3
2:36:32 PM	52.1
2:37:32 PM	51.8
2:38:32 PM	55
2:39:32 PM	54.2
2:40:32 PM	53.1
2:41:32 PM	53.1
2:42:32 PM	51.9
2:43:32 PM	54.3
2:44:32 PM	54.5
2:45:32 PM	55.7

2:46:32 PM	52.7
2:47:32 PM	53
2:48:32 PM	53.4
2:49:32 PM	52.5
2:50:32 PM	55.2
2:51:32 PM	52.4
2:52:32 PM	52.5
2:53:32 PM	52.8
2:54:32 PM	53.1
2:55:32 PM	53.7
2:56:32 PM	53.7
2:57:32 PM	54.7
2:58:32 PM	54.4
2:59:32 PM	54

Logged Data Chart

S033: Logged Data Chart



NMP-6

Session Report

9/23/2019

Information Panel

Name	S034
Start Time	9/17/2019 3:26:49 PM
Stop Time	9/17/2019 3:56:50 PM
Device Name	BGI050008
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Calibration History

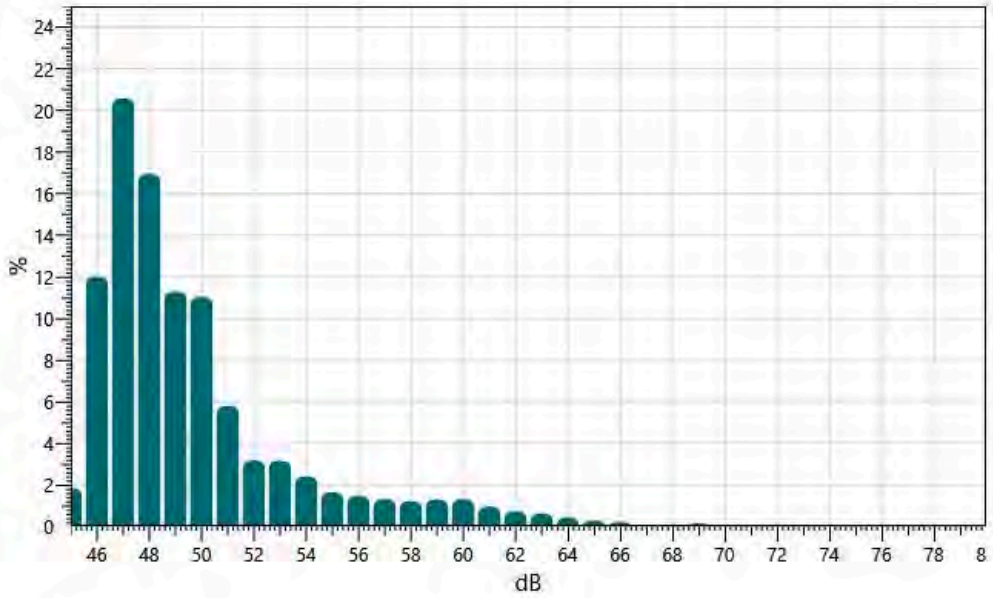
Date	Calibration Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
9/17/2019 7:07:48 AM	Calibration	114.0			

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	53.9 dB	L10	1	56 dB
L90	1	46.6 dB	Lmax	1	74.2 dB
L50	1	48.7 dB	Rtime	1	00:30:01
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF

Statistics Chart

S034: Statistics Chart



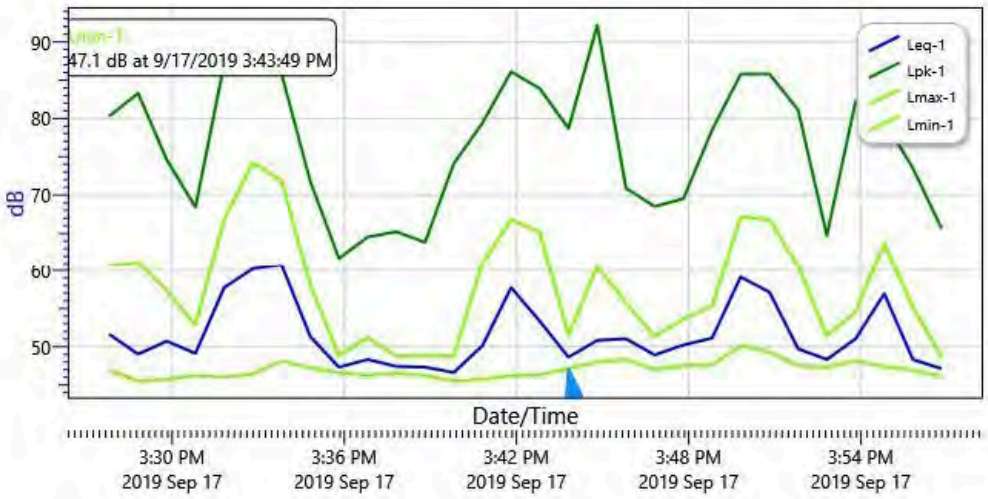
Logged Data Table

Date/Time	Leq-1
9/17/2019 3:27:49 PM	51.6
3:28:49 PM	49
3:29:49 PM	50.7
3:30:49 PM	49.1
3:31:49 PM	57.7
3:32:49 PM	60.2
3:33:49 PM	60.7
3:34:49 PM	51.3
3:35:49 PM	47.3
3:36:49 PM	48.3
3:37:49 PM	47.4
3:38:49 PM	47.3
3:39:49 PM	46.6
3:40:49 PM	50.1
3:41:49 PM	57.7
3:42:49 PM	53.3

3:43:49 PM	48.6
3:44:49 PM	50.8
3:45:49 PM	51
3:46:49 PM	48.9
3:47:49 PM	50.2
3:48:49 PM	51.1
3:49:49 PM	59.1
3:50:49 PM	57.1
3:51:49 PM	49.7
3:52:49 PM	48.3
3:53:49 PM	51
3:54:49 PM	56.9
3:55:49 PM	48.3
3:56:49 PM	47.1

Logged Data Chart

S034: Logged Data Chart



NMP-7

Session Report

9/23/2019

Information Panel

Name	S035
Start Time	9/17/2019 4:06:26 PM
Stop Time	9/17/2019 4:21:27 PM
Device Name	BGI050008
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Calibration History

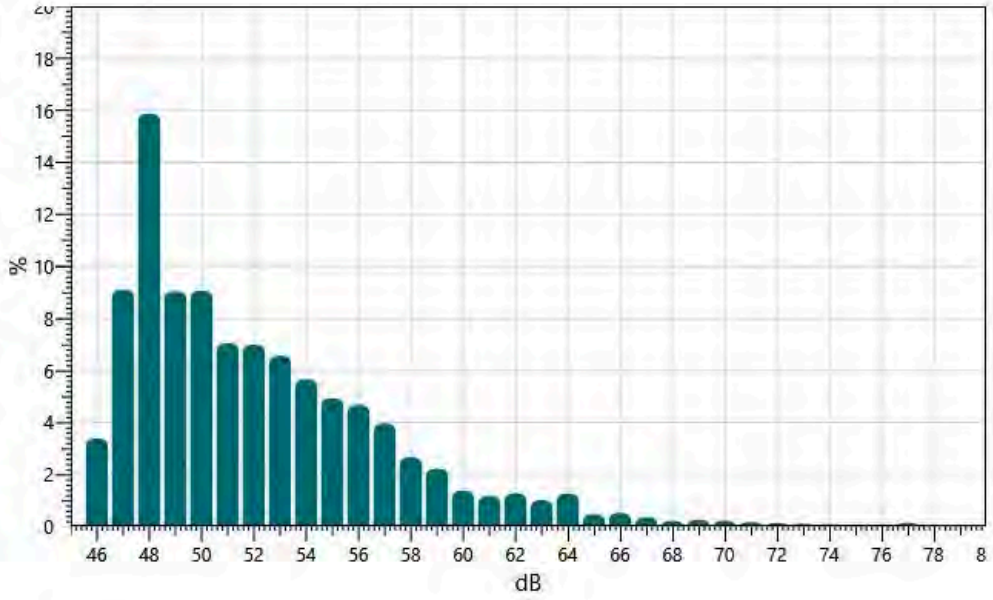
Date	Calibration Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
9/17/2019 7:07:48 AM	Calibration	114.0			

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	58 dB	L10	1	59.3 dB
L90	1	47.7 dB	Lmax	1	77.9 dB
L50	1	51.4 dB	Rtime	1	00:15:01
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF

Statistics Chart

S035: Statistics Chart

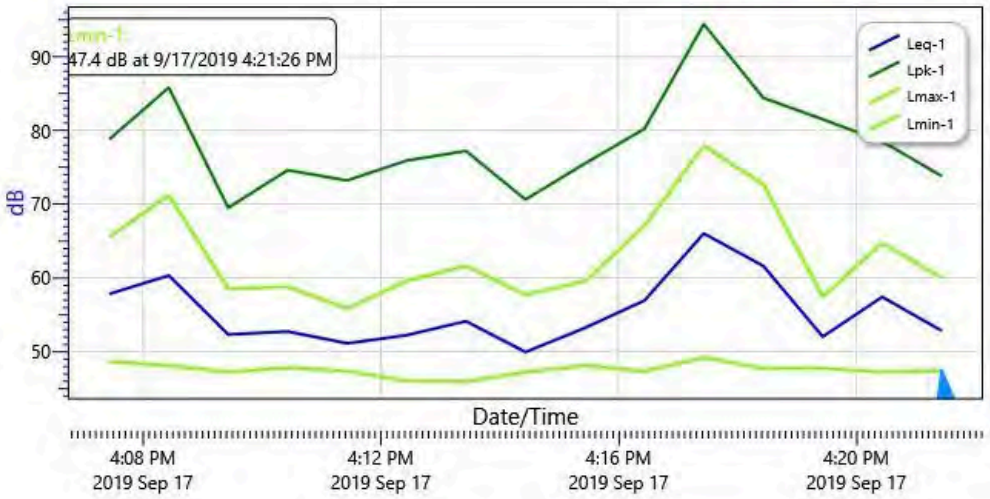


Logged Data Table

Date/Time	Leq-1
9/17/2019 4:07:26 PM	57.8
4:08:26 PM	60.3
4:09:26 PM	52.3
4:10:26 PM	52.7
4:11:26 PM	51.1
4:12:26 PM	52.2
4:13:26 PM	54.1
4:14:26 PM	49.9
4:15:26 PM	53.2
4:16:26 PM	56.9
4:17:26 PM	66
4:18:26 PM	61.6
4:19:26 PM	52
4:20:26 PM	57.4
4:21:26 PM	52.8

Logged Data Chart

S035: Logged Data Chart



NMP-8

Session Report

9/23/2019

Information Panel

Name	S036
Start Time	9/17/2019 4:27:44 PM
Stop Time	9/17/2019 4:42:45 PM
Device Name	BGI050008
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Calibration History

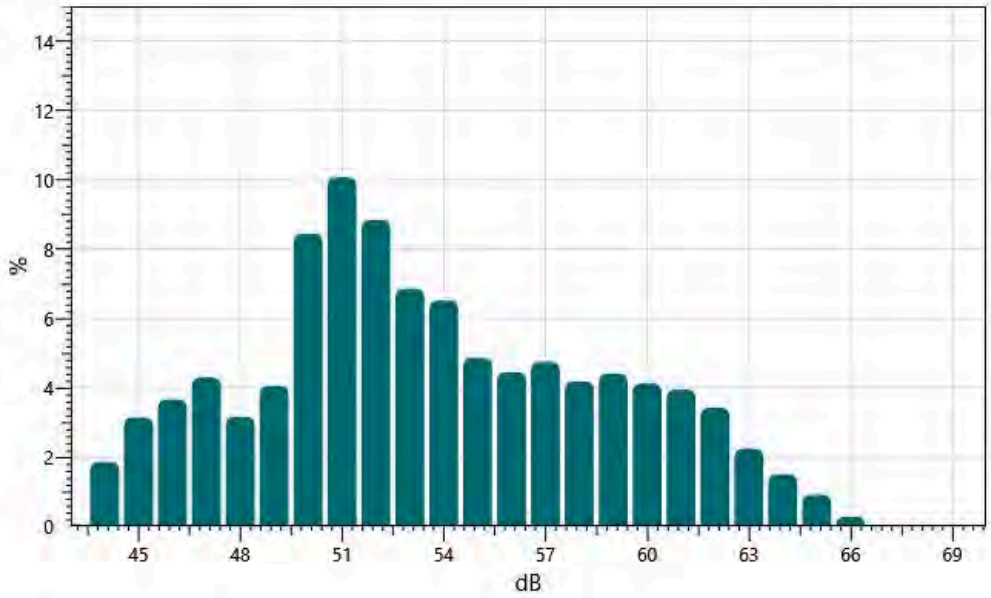
Date	Calibration Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
9/17/2019 7:07:48 AM	Calibration	114.0			

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	57 dB	L10	1	61.4 dB
L90	1	47.1 dB	Lmax	1	66.7 dB
L50	1	53.2 dB	Rtime	1	00:15:01
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF

Statistics Chart

S036: Statistics Chart

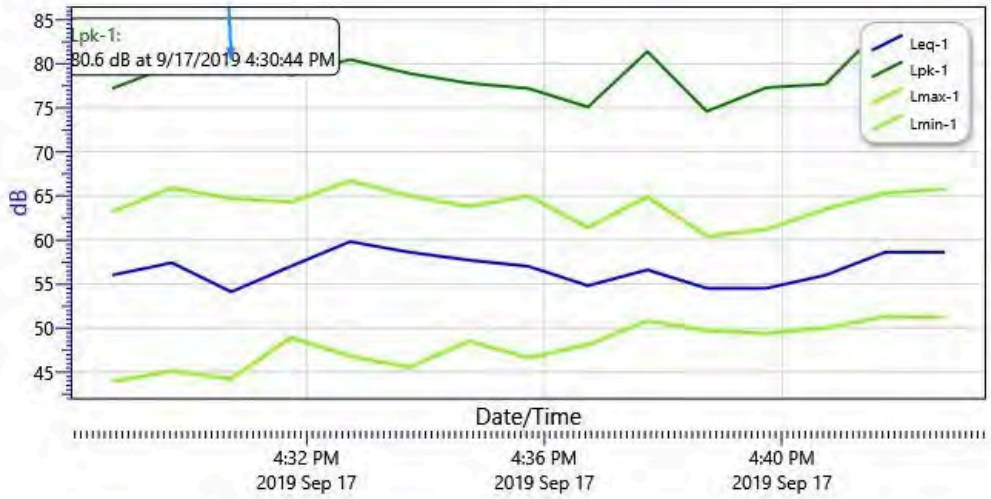


Logged Data Table

Date/Time	Leq-1
9/17/2019 4:28:44 PM	56
4:29:44 PM	57.4
4:30:44 PM	54.1
4:31:44 PM	57
4:32:44 PM	59.8
4:33:44 PM	58.6
4:34:44 PM	57.7
4:35:44 PM	57
4:36:44 PM	54.8
4:37:44 PM	56.6
4:38:44 PM	54.5
4:39:44 PM	54.5
4:40:44 PM	56
4:41:44 PM	58.6
4:42:44 PM	58.6

Logged Data Chart

S036: Logged Data Chart



NMP-9

Session Report

9/23/2019

Information Panel

Name	S037
Start Time	9/17/2019 4:46:22 PM
Stop Time	9/17/2019 5:01:59 PM
Device Name	BGI050008
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	

Calibration History

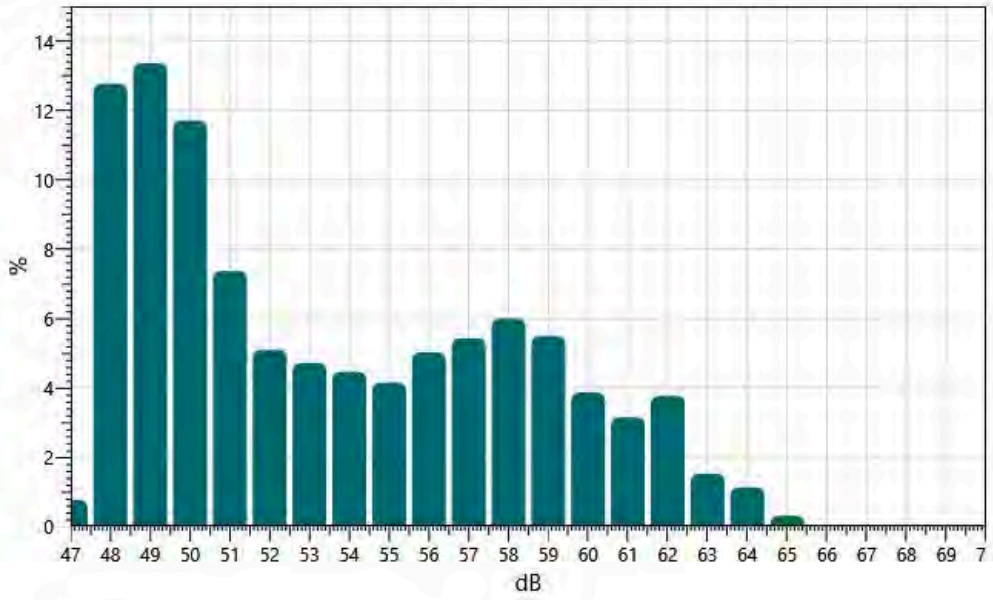
Date	Calibration Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
9/17/2019 7:07:48 AM	Calibration	114.0			
9/17/2019 5:04:03 PM	Verification	114.0			

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	56.6 dB	L10	1	60.8 dB
L90	1	48.7 dB	Lmax	1	65.9 dB
L50	1	52.6 dB	Rtime	1	00:15:37
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF

Statistics Chart

S037: Statistics Chart

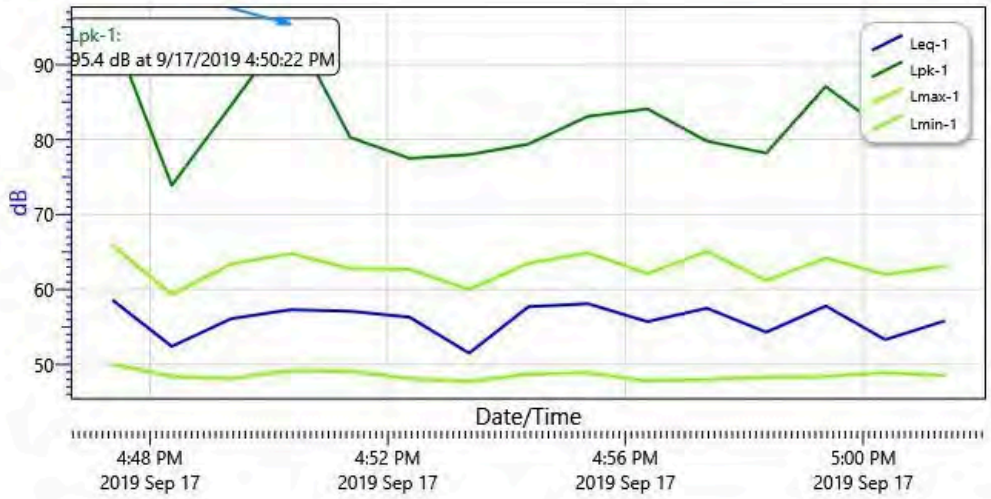


Logged Data Table

Date/Time	Leq-1
9/17/2019 4:47:22 PM	58.6
4:48:22 PM	52.4
4:49:22 PM	56.1
4:50:22 PM	57.3
4:51:22 PM	57.1
4:52:22 PM	56.3
4:53:22 PM	51.5
4:54:22 PM	57.7
4:55:22 PM	58.1
4:56:22 PM	55.7
4:57:22 PM	57.5
4:58:22 PM	54.3
4:59:22 PM	57.8
5:00:22 PM	53.3
5:01:22 PM	55.8

Logged Data Chart

S037: Logged Data Chart



PREMIER SAFETY
CALIBRATION LABORATORY

Calibration Certificate 0006960

Instrument: **Acoustical Calibrator**
Model: **QC-10**
Manufacturer: **Quest**
Serial number: **QIJ080130**
Class (IEC 60942): **1**
Barometer type:
Barometer s/n:

Date Calibrated: **2/28/2019** *Cal Due:* **2/28/2020**

Status:	Received	Sent
In tolerance:	X	X
Out of tolerance:		
See comments:		

Contains non-accredited tests: __Yes _X_ No

Customer:
Tel/Fax: /

Address:

Tested in accordance with the following procedures and standards:
Calibration of Noise Dosimeters, Sound Meters, and Calibratos., Rev. Chf 04

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	31079	May 11, 2018	Norsonic SA	May 11, 2019
DS-360-SRS	Function Generator	123268	May 10, 2018	SRS	May 10, 2019
34401A-Agilent Technologies	Digital Voltmeter	MY53003818	May 15, 2018	Agilent Provider #93107	May 15, 2019
SD700-Extech	Meteo Station	Q769118	May 11, 2018	INNOCAL	May 11, 2019
140-Norsonic	Real Time Analyzer	1405966	May 11, 2018	Norsonic SA	May 11, 2019
PC Program 1018 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	-
40AG-GRAS	Microphone	173539	May 21, 2018	Scantek, Inc. / NVLAP	May 21, 2019
NN1203-Norsonic	Preamplifier	138531	May 21, 2018	Norsonic SA	May 21, 2019

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

Calibrated by:	Steven Boertmann	**Authorized signatory:**	Eric Ford
Signature	Steven Boertmann	Signature	Eric Ford
Date	2-28-19	Date	2-28-19

Results summary: Device was tested and complies with following clauses of mentioned specifications:

CLAUSES[1] FROM STANDARDS REFERENCED IN PROCEDURES:	MET[2]	NOT MET	COMMENTS
Manufacturer specifications			
Manufacturer specifications: Sound pressure level	X		
Manufacturer specifications: Frequency	X		
Manufacturer specifications: Total harmonic distortion	X		
Current standards			
ANSI S1.40:2006 B.3 / IEC 60942: 2003 B.2 - Preliminary inspection	X		Unit older than the standard
ANSI S1.40:2006 B.4.4 / IEC 60942: 2003 B.3.4 - Sound pressure level	X		Unit older than the standard
ANSI S1.40:2006 A.5.4 / IEC 60942: 2003 A.4.4 - Sound pressure level stability	-	-	Unit older than the standard
ANSI S1.40:2006 B.4.5 / IEC 60942: 2003 B.3.5 - Frequency	X		Unit older than the standard
ANSI S1.40:2006 B.4.6 / IEC 60942: 2003 B.3.6 - Total harmonic distortion	X		Unit older than the standard
Older standards (obsolete)			
IEC 60942: 1997 B.2 - Preliminary inspection	X		
IEC 60942: 1997 B.3.3 - Sound pressure level	X		
IEC 60942: 1997 B.3.4 - Sound pressure level stability	X		
IEC 60942: 1997 B.3.5 - Frequency	X		
IEC 60942: 1997 B.3.6 - Total harmonic distortion	X		
ANSI S1.40: 1984 (R1997) 4.4.2 Sound pressure level in the coupler	X		Not applicable
ANSI S1.40: 1984 (R1997) 4.4 Frequency sound in the coupler	X		Not applicable
ANSI S1.40: 1984 (R1997) 4.10 Total harmonic distortion	X		Not applicable

[1] The results of this calibration apply only to the instrument type with serial number identified in this report.

[2]

Main measured parameters [3]:

Measured[4]/Acceptable[5] Tone frequency (Hz):	Measured[4]/Acceptable[5] Total Harmonic Distortion (%):	Measured [4]/Acceptable Level[5] (dB):
998.52 ± 1.0/1000.0 ± 10.0	0.41 ± 0.10/ < 3	113.91 ± 0.02/114.0 ± 0.4

[3] The stated level is valid at reference conditions.

[4] The above expanded uncertainties for frequency and distortion are calculated with a coverage factor k=2; for level k=4.53

[5] Acceptable parameters values are from the current standards

Barometer indication	Nominal indication

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
22.0 ± 1.0	100.00 ± 0.001	26.0 ± 2.0

Tests made with following attachments to instrument:

Calibrator ½" Adaptor Type:
Other:

Adjustments: Unit was not adjusted.
Comments: C:\Nor1504\Cal\2014\Questc10-old_QJJ080130_M4.doc

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger.
Compliance with any standard cannot be claimed based solely on the periodic tests.

Place of Calibration: Premier Safety
46410 Continental Dr.
Chesterfield, MI 48047
Ph/Fax: 586-840-3220/ -3221
www.premier safety.com

PREMIER SAFETY
CALIBRATION LABORATORY

Calibration Certificate No. 1098768

Instrument:	**Sound Level Meter**	*Date Calibrated:* **3/14/2019**	*Cal Due:* **3/14/2020**
Model:	**SoundPro SE_DL2**	*Status:*	**Received** / **Sent**
Manufacturer:	**Quest**	*In tolerance:*	X / X
Serial number:	**BGI050008**	*Out of tolerance:*	
Tested with:	**Microphone QE7052 s/n 46838**	*See comments:*	
	Pream10987 n/a s/n 0810 4848	*Contains non-accredited tests:*	**__Yes _X_ No**
	68plifier	*Calibration service:*	**__ Basic _X_ Standard**
Type (class):	**2**		
Customer:		*Address:*	
Tel/Fax:	**/**		

Tested in accordance with the following procedures and standards:
Calibration of Sound Level Meters, Scantek Inc., Rev. 6/22/2012
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. Lab / Accreditation	Cal. Due
483B-Norsonic	SME Cal Unit	31079	May 11, 2018	Norsonic SA	May 11, 2019
DS-360-SRS	Function Generator	123268	May 10, 2018	SRS	May 10, 2019
34401A-Agilent Technologies	Digital Voltmeter	MY53003818	May 15, 2018	Agilent Provider #93107	May 15, 2019
SD700-Extech	Meteo Station	Q769118	May 11, 2018	INNOCAL	May 11, 2019
PC Program 1019 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	-
1251-Norsonic	Calibrator	34103	May 21, 2018	Scantek, Inc./ NVLAP	May 21, 2019

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 (%)
22.0	99.00	26.0

Calibrated by:	Steven Boertmann	**Authorized signatory:**	Eric Ford
Signature	Steven Boertmann	Signature	Eric Ford
Date	3-14-19	Date	3-14-19

Results summary: Device complies with following clauses of mentioned specifications:

CLAUSES [1] FROM IEC/ANSI STANDARDS REFERENCED IN PROCEDURES:	RESULT[2,3]	EXPANDED UNCERTAINTY (coverage factor 2) [dB]
FREQUENCY WEIGHTINGS: A NETWORK - IEC 61672-3 ED.1 CLAUSE 12	Passed	0.20.2
FREQUENCY WEIGHTINGS: C NETWORK - IEC 61672-3 ED.1 CLAUSE 12	Passed	0.2
FREQUENCY WEIGHTINGS: Z NETWORK - IEC 61672-3 ED.1 CLAUSE 12	Passed	0.2
FREQUENCY AND TIME WEIGHTINGS AT 1 KHZ IEC 61672-3 ED.1 CLAUSE 13	Passed	0.2
LEVEL LINEARITY ON THE REFERENCE LEVEL RANGE - IEC 61672-3 ED.1 CLAUSE 14	Passed	0.3
LEVEL LINEARITY INCLUDING THE LEVEL RANGE CONTROL - IEC 61672-3 ED.1 CLAUSE 15	Passed	0.3
TONEBURST RESPONSE - IEC 61672-3 ED.1 CLAUSE 16	Passed	0.3
PEAK C SOUND LEVEL - IEC 61672-3 ED.1 CLAUSE 17	Passed	0.35

1 The results of this calibration apply only to the instrument type with serial number identified in this report.

2 Parameters are certified at actual environmental conditions.

3

Comments: The instrument was tested and met all specifications found in the referenced procedures.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger.
Compliance with any standard cannot be claimed based solely on the periodic tests.

Tests made with the following attachments to the instrument:

Microphone: Quest QE7052 s/n 46838 for acoustical test
Preamplifier: Quest n/a s/n 0810 4848 for all tests
Other: line adaptor ADP005 (18pF) for electrical tests and 1448 (18pF) for noise test
Accompanying acoustical calibrator: Quest QC-20 s/n QOH040009
Windscreen: none

Measured Data: In Test Report # of ... pages.

Place of Calibration: Premier Safety
46410 Continental Dr.
Chesterfield, MI 48047
Ph/Fax: 586-840-3220/ -3221
www.premiersafety.com

SoundPro SE_DL2 s/n: BGI050008 ID:
Date: 3/14/2019 By: SB
Due: 3/14/2020

Parrish Avenue Bridge Over Norfolk Southern Railway

APPENDIX E: TNM MODEL RESULTS

CMT
C. Fowler

10 August 2021
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 19070901.00
RUN: Existing - AM
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
1a	1	1	0.0	45.4	66	45.4	10	----	45.4	0.0	8	-8.0
1b	3	1	0.0	45.5	66	45.5	10	----	45.5	0.0	8	-8.0
1c	5	1	0.0	45.6	66	45.6	10	----	45.6	0.0	8	-8.0
2a	7	1	0.0	45.2	66	45.2	10	----	45.2	0.0	8	-8.0
2b	9	1	0.0	45.3	66	45.3	10	----	45.3	0.0	8	-8.0
2c	11	1	0.0	45.4	66	45.4	10	----	45.4	0.0	8	-8.0
3a	13	1	0.0	42.6	66	42.6	10	----	42.6	0.0	8	-8.0
3b	15	1	0.0	42.7	66	42.7	10	----	42.7	0.0	8	-8.0
3c	16	1	0.0	42.8	66	42.8	10	----	42.8	0.0	8	-8.0
4a	18	1	0.0	42.4	66	42.4	10	----	42.4	0.0	8	-8.0
4b	20	1	0.0	42.5	66	42.5	10	----	42.5	0.0	8	-8.0
4c	22	1	0.0	42.6	66	42.6	10	----	42.6	0.0	8	-8.0
5a	24	1	0.0	43.6	66	43.6	10	----	43.6	0.0	8	-8.0
5b	26	1	0.0	43.7	66	43.7	10	----	43.7	0.0	8	-8.0
5c	28	1	0.0	43.8	66	43.8	10	----	43.8	0.0	8	-8.0
6a	30	1	0.0	44.8	66	44.8	10	----	44.8	0.0	8	-8.0
6b	32	1	0.0	44.9	66	44.9	10	----	44.9	0.0	8	-8.0
6c	34	1	0.0	45.0	66	45.0	10	----	45.0	0.0	8	-8.0
7a	36	1	0.0	46.2	66	46.2	10	----	46.2	0.0	8	-8.0
7b	38	1	0.0	46.3	66	46.3	10	----	46.3	0.0	8	-8.0
7c	40	1	0.0	46.5	66	46.5	10	----	46.5	0.0	8	-8.0
8	42	1	0.0	44.3	66	44.3	10	----	44.3	0.0	8	-8.0
9	46	1	0.0	36.1	66	36.1	10	----	36.1	0.0	8	-8.0

10	48	1	0.0	36.1	66	36.1	10	----	36.1	0.0	8	-8.0
11	50	1	0.0	36.1	66	36.1	10	----	36.1	0.0	8	-8.0
12	52	1	0.0	35.9	66	35.9	10	----	35.9	0.0	8	-8.0
13	54	1	0.0	35.8	66	35.8	10	----	35.8	0.0	8	-8.0
14	56	1	0.0	35.9	66	35.9	10	----	35.9	0.0	8	-8.0
15	58	1	0.0	35.9	66	35.9	10	----	35.9	0.0	8	-8.0
16	60	1	0.0	36.0	66	36.0	10	----	36.0	0.0	8	-8.0
17	62	1	0.0	36.2	66	36.2	10	----	36.2	0.0	8	-8.0
18	64	1	0.0	36.5	66	36.5	10	----	36.5	0.0	8	-8.0
19	66	1	0.0	36.8	66	36.8	10	----	36.8	0.0	8	-8.0
20	68	1	0.0	37.6	66	37.6	10	----	37.6	0.0	8	-8.0
21	70	1	0.0	43.1	66	43.1	10	----	43.1	0.0	8	-8.0
22	72	1	0.0	46.0	66	46.0	10	----	46.0	0.0	8	-8.0
23	74	1	0.0	43.9	66	43.9	10	----	43.9	0.0	8	-8.0
24	77	1	0.0	49.8	66	49.8	10	----	49.8	0.0	8	-8.0
25	79	1	0.0	49.9	66	49.9	10	----	49.9	0.0	8	-8.0
26	81	1	0.0	50.0	66	50.0	10	----	50.0	0.0	8	-8.0
27	83	1	0.0	48.1	66	48.1	10	----	48.1	0.0	8	-8.0
28	85	1	0.0	48.2	66	48.2	10	----	48.2	0.0	8	-8.0
29	88	1	0.0	48.3	66	48.3	10	----	48.3	0.0	8	-8.0
30	90	1	0.0	47.7	66	47.7	10	----	47.7	0.0	8	-8.0
31	92	1	0.0	49.0	66	49.0	10	----	49.0	0.0	8	-8.0
32	94	1	0.0	50.0	66	50.0	10	----	50.0	0.0	8	-8.0
33	96	1	0.0	51.4	66	51.4	10	----	51.4	0.0	8	-8.0
34	99	1	0.0	52.5	66	52.5	10	----	52.5	0.0	8	-8.0
35	101	1	0.0	51.1	66	51.1	10	----	51.1	0.0	8	-8.0
36	85	1	0.0	50.5	66	50.5	10	----	50.5	0.0	8	-8.0
37	103	1	0.0	50.1	66	50.1	10	----	50.1	0.0	8	-8.0
38	105	1	0.0	47.7	66	47.7	10	----	47.7	0.0	8	-8.0
39	107	1	0.0	47.3	66	47.3	10	----	47.3	0.0	8	-8.0
40	109	1	0.0	47.4	66	47.4	10	----	47.4	0.0	8	-8.0
41	111	1	0.0	47.3	66	47.3	10	----	47.3	0.0	8	-8.0
42	113	1	0.0	50.7	66	50.7	10	----	50.7	0.0	8	-8.0
43	117	1	0.0	50.7	66	50.7	10	----	50.7	0.0	8	-8.0
44	119	1	0.0	50.7	66	50.7	10	----	50.7	0.0	8	-8.0
45	121	1	0.0	50.9	66	50.9	10	----	50.9	0.0	8	-8.0
46	123	1	0.0	51.5	66	51.5	10	----	51.5	0.0	8	-8.0
47	125	1	0.0	51.5	66	51.5	10	----	51.5	0.0	8	-8.0
48	127	1	0.0	55.1	66	55.1	10	----	55.1	0.0	8	-8.0
49	129	1	0.0	55.0	66	55.0	10	----	55.0	0.0	8	-8.0

50	131	1	0.0	55.0	66	55.0	10	----	55.0	0.0	8	-8.0
51	133	1	0.0	54.9	66	54.9	10	----	54.9	0.0	8	-8.0
52	135	1	0.0	54.9	66	54.9	10	----	54.9	0.0	8	-8.0
53	137	1	0.0	41.9	66	41.9	10	----	41.9	0.0	8	-8.0
54	139	1	0.0	40.6	66	40.6	10	----	40.6	0.0	8	-8.0
55	141	1	0.0	39.9	66	39.9	10	----	39.9	0.0	8	-8.0
56	143	1	0.0	39.4	66	39.4	10	----	39.4	0.0	8	-8.0
57	145	1	0.0	38.5	66	38.5	10	----	38.5	0.0	8	-8.0
58	147	1	0.0	38.1	66	38.1	10	----	38.1	0.0	8	-8.0
59	149	1	0.0	37.6	66	37.6	10	----	37.6	0.0	8	-8.0
60	151	1	0.0	36.6	66	36.6	10	----	36.6	0.0	8	-8.0
61	153	1	0.0	36.7	66	36.7	10	----	36.7	0.0	8	-8.0
62	155	1	0.0	36.9	66	36.9	10	----	36.9	0.0	8	-8.0
63	157	1	0.0	37.1	66	37.1	10	----	37.1	0.0	8	-8.0
64	159	1	0.0	37.6	66	37.6	10	----	37.6	0.0	8	-8.0
65	161	1	0.0	38.7	66	38.7	10	----	38.7	0.0	8	-8.0
66	163	1	0.0	39.3	66	39.3	10	----	39.3	0.0	8	-8.0
67	164	1	0.0	39.6	66	39.6	10	----	39.6	0.0	8	-8.0
68	165	1	0.0	39.8	66	39.8	10	----	39.8	0.0	8	-8.0
69	166	1	0.0	40.2	66	40.2	10	----	40.2	0.0	8	-8.0
70	167	1	0.0	40.5	66	40.5	10	----	40.5	0.0	8	-8.0
71	169	1	0.0	40.9	66	40.9	10	----	40.9	0.0	8	-8.0
72	171	1	0.0	41.6	66	41.6	10	----	41.6	0.0	8	-8.0
73	173	1	0.0	42.3	66	42.3	10	----	42.3	0.0	8	-8.0
74	175	1	0.0	41.9	66	41.9	10	----	41.9	0.0	8	-8.0
75	177	1	0.0	41.1	66	41.1	10	----	41.1	0.0	8	-8.0
76	179	1	0.0	40.5	66	40.5	10	----	40.5	0.0	8	-8.0
77	182	1	0.0	39.9	66	39.9	10	----	39.9	0.0	8	-8.0
78	184	1	0.0	39.5	66	39.5	10	----	39.5	0.0	8	-8.0
79	186	1	0.0	39.0	66	39.0	10	----	39.0	0.0	8	-8.0
80	188	1	0.0	38.6	66	38.6	10	----	38.6	0.0	8	-8.0
81	190	1	0.0	38.1	66	38.1	10	----	38.1	0.0	8	-8.0
82	192	1	0.0	38.5	66	38.5	10	----	38.5	0.0	8	-8.0
83	194	1	0.0	38.9	66	38.9	10	----	38.9	0.0	8	-8.0
84	196	1	0.0	39.6	66	39.6	10	----	39.6	0.0	8	-8.0
85	200	1	0.0	47.3	66	47.3	10	----	47.3	0.0	8	-8.0
86	202	1	0.0	50.9	66	50.9	10	----	50.9	0.0	8	-8.0
87	205	1	0.0	50.9	66	50.9	10	----	50.9	0.0	8	-8.0
88	208	1	0.0	50.8	66	50.8	10	----	50.8	0.0	8	-8.0
89	210	1	0.0	50.8	66	50.8	10	----	50.8	0.0	8	-8.0

90	212	1	0.0	45.0	66	45.0	10	----	45.0	0.0	8	-8.0
91	214	1	0.0	44.9	66	44.9	10	----	44.9	0.0	8	-8.0
92	216	1	0.0	54.9	66	54.9	10	----	54.9	0.0	8	-8.0
93	218	1	0.0	54.9	66	54.9	10	----	54.9	0.0	8	-8.0
94	220	1	0.0	54.9	66	54.9	10	----	54.9	0.0	8	-8.0
95	221	1	0.0	54.9	66	54.9	10	----	54.9	0.0	8	-8.0
96	222	1	0.0	55.0	66	55.0	10	----	55.0	0.0	8	-8.0
97	223	1	0.0	51.2	66	51.2	10	----	51.2	0.0	8	-8.0
98	224	1	0.0	48.3	66	48.3	10	----	48.3	0.0	8	-8.0
99	226	1	0.0	46.4	66	46.4	10	----	46.4	0.0	8	-8.0
100	227	1	0.0	44.9	66	44.9	10	----	44.9	0.0	8	-8.0
101	228	1	0.0	44.6	66	44.6	10	----	44.6	0.0	8	-8.0
102	229	1	0.0	45.1	66	45.1	10	----	45.1	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	116	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

CMT
C. Fowler

10 August 2021
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 19070901.00
RUN: Existing - PM
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
1a	1	1	0.0	46.0	66	46.0	10	----	46.0	0.0	8	-8.0
1b	3	1	0.0	46.1	66	46.1	10	----	46.1	0.0	8	-8.0
1c	5	1	0.0	46.2	66	46.2	10	----	46.2	0.0	8	-8.0
2a	7	1	0.0	45.7	66	45.7	10	----	45.7	0.0	8	-8.0
2b	9	1	0.0	45.8	66	45.8	10	----	45.8	0.0	8	-8.0
2c	11	1	0.0	45.9	66	45.9	10	----	45.9	0.0	8	-8.0
3a	13	1	0.0	43.1	66	43.1	10	----	43.1	0.0	8	-8.0
3b	15	1	0.0	43.2	66	43.2	10	----	43.2	0.0	8	-8.0
3c	16	1	0.0	43.2	66	43.2	10	----	43.2	0.0	8	-8.0
4a	18	1	0.0	42.9	66	42.9	10	----	42.9	0.0	8	-8.0
4b	20	1	0.0	42.9	66	42.9	10	----	42.9	0.0	8	-8.0
4c	22	1	0.0	43.0	66	43.0	10	----	43.0	0.0	8	-8.0
5a	24	1	0.0	44.0	66	44.0	10	----	44.0	0.0	8	-8.0
5b	26	1	0.0	44.1	66	44.1	10	----	44.1	0.0	8	-8.0
5c	28	1	0.0	44.2	66	44.2	10	----	44.2	0.0	8	-8.0
6a	30	1	0.0	45.3	66	45.3	10	----	45.3	0.0	8	-8.0
6b	32	1	0.0	45.4	66	45.4	10	----	45.4	0.0	8	-8.0
6c	34	1	0.0	45.5	66	45.5	10	----	45.5	0.0	8	-8.0
7a	36	1	0.0	46.7	66	46.7	10	----	46.7	0.0	8	-8.0
7b	38	1	0.0	46.8	66	46.8	10	----	46.8	0.0	8	-8.0
7c	40	1	0.0	46.9	66	46.9	10	----	46.9	0.0	8	-8.0
8	42	1	0.0	44.9	66	44.9	10	----	44.9	0.0	8	-8.0
9	46	1	0.0	36.0	66	36.0	10	----	36.0	0.0	8	-8.0

10	48	1	0.0	36.0	66	36.0	10	----	36.0	0.0	8	-8.0
11	50	1	0.0	36.0	66	36.0	10	----	36.0	0.0	8	-8.0
12	52	1	0.0	35.6	66	35.6	10	----	35.6	0.0	8	-8.0
13	54	1	0.0	35.4	66	35.4	10	----	35.4	0.0	8	-8.0
14	56	1	0.0	35.3	66	35.3	10	----	35.3	0.0	8	-8.0
15	58	1	0.0	35.2	66	35.2	10	----	35.2	0.0	8	-8.0
16	60	1	0.0	35.1	66	35.1	10	----	35.1	0.0	8	-8.0
17	62	1	0.0	35.1	66	35.1	10	----	35.1	0.0	8	-8.0
18	64	1	0.0	35.1	66	35.1	10	----	35.1	0.0	8	-8.0
19	66	1	0.0	35.3	66	35.3	10	----	35.3	0.0	8	-8.0
20	68	1	0.0	36.0	66	36.0	10	----	36.0	0.0	8	-8.0
21	70	1	0.0	39.8	66	39.8	10	----	39.8	0.0	8	-8.0
22	72	1	0.0	42.6	66	42.6	10	----	42.6	0.0	8	-8.0
23	74	1	0.0	40.6	66	40.6	10	----	40.6	0.0	8	-8.0
24	77	1	0.0	46.2	66	46.2	10	----	46.2	0.0	8	-8.0
25	79	1	0.0	46.3	66	46.3	10	----	46.3	0.0	8	-8.0
26	81	1	0.0	46.4	66	46.4	10	----	46.4	0.0	8	-8.0
27	83	1	0.0	44.7	66	44.7	10	----	44.7	0.0	8	-8.0
28	85	1	0.0	44.9	66	44.9	10	----	44.9	0.0	8	-8.0
29	88	1	0.0	45.0	66	45.0	10	----	45.0	0.0	8	-8.0
30	90	1	0.0	44.7	66	44.7	10	----	44.7	0.0	8	-8.0
31	92	1	0.0	45.9	66	45.9	10	----	45.9	0.0	8	-8.0
32	94	1	0.0	47.0	66	47.0	10	----	47.0	0.0	8	-8.0
33	96	1	0.0	49.2	66	49.2	10	----	49.2	0.0	8	-8.0
34	99	1	0.0	51.4	66	51.4	10	----	51.4	0.0	8	-8.0
35	101	1	0.0	50.7	66	50.7	10	----	50.7	0.0	8	-8.0
36	85	1	0.0	50.4	66	50.4	10	----	50.4	0.0	8	-8.0
37	103	1	0.0	50.3	66	50.3	10	----	50.3	0.0	8	-8.0
38	105	1	0.0	47.9	66	47.9	10	----	47.9	0.0	8	-8.0
39	107	1	0.0	47.7	66	47.7	10	----	47.7	0.0	8	-8.0
40	109	1	0.0	47.8	66	47.8	10	----	47.8	0.0	8	-8.0
41	111	1	0.0	47.8	66	47.8	10	----	47.8	0.0	8	-8.0
42	113	1	0.0	51.2	66	51.2	10	----	51.2	0.0	8	-8.0
43	117	1	0.0	51.2	66	51.2	10	----	51.2	0.0	8	-8.0
44	119	1	0.0	51.3	66	51.3	10	----	51.3	0.0	8	-8.0
45	121	1	0.0	51.5	66	51.5	10	----	51.5	0.0	8	-8.0
46	123	1	0.0	52.1	66	52.1	10	----	52.1	0.0	8	-8.0
47	125	1	0.0	52.0	66	52.0	10	----	52.0	0.0	8	-8.0
48	127	1	0.0	55.4	66	55.4	10	----	55.4	0.0	8	-8.0
49	129	1	0.0	55.4	66	55.4	10	----	55.4	0.0	8	-8.0

50	131	1	0.0	55.4	66	55.4	10	----	55.4	0.0	8	-8.0
51	133	1	0.0	55.4	66	55.4	10	----	55.4	0.0	8	-8.0
52	135	1	0.0	55.3	66	55.3	10	----	55.3	0.0	8	-8.0
53	137	1	0.0	42.4	66	42.4	10	----	42.4	0.0	8	-8.0
54	139	1	0.0	41.1	66	41.1	10	----	41.1	0.0	8	-8.0
55	141	1	0.0	40.3	66	40.3	10	----	40.3	0.0	8	-8.0
56	143	1	0.0	39.7	66	39.7	10	----	39.7	0.0	8	-8.0
57	145	1	0.0	38.7	66	38.7	10	----	38.7	0.0	8	-8.0
58	147	1	0.0	38.2	66	38.2	10	----	38.2	0.0	8	-8.0
59	149	1	0.0	37.7	66	37.7	10	----	37.7	0.0	8	-8.0
60	151	1	0.0	36.5	66	36.5	10	----	36.5	0.0	8	-8.0
61	153	1	0.0	36.7	66	36.7	10	----	36.7	0.0	8	-8.0
62	155	1	0.0	36.9	66	36.9	10	----	36.9	0.0	8	-8.0
63	157	1	0.0	37.2	66	37.2	10	----	37.2	0.0	8	-8.0
64	159	1	0.0	37.9	66	37.9	10	----	37.9	0.0	8	-8.0
65	161	1	0.0	39.1	66	39.1	10	----	39.1	0.0	8	-8.0
66	163	1	0.0	39.8	66	39.8	10	----	39.8	0.0	8	-8.0
67	164	1	0.0	40.1	66	40.1	10	----	40.1	0.0	8	-8.0
68	165	1	0.0	40.3	66	40.3	10	----	40.3	0.0	8	-8.0
69	166	1	0.0	40.7	66	40.7	10	----	40.7	0.0	8	-8.0
70	167	1	0.0	41.1	66	41.1	10	----	41.1	0.0	8	-8.0
71	169	1	0.0	41.5	66	41.5	10	----	41.5	0.0	8	-8.0
72	171	1	0.0	42.2	66	42.2	10	----	42.2	0.0	8	-8.0
73	173	1	0.0	42.9	66	42.9	10	----	42.9	0.0	8	-8.0
74	175	1	0.0	42.5	66	42.5	10	----	42.5	0.0	8	-8.0
75	177	1	0.0	41.7	66	41.7	10	----	41.7	0.0	8	-8.0
76	179	1	0.0	41.0	66	41.0	10	----	41.0	0.0	8	-8.0
77	182	1	0.0	40.5	66	40.5	10	----	40.5	0.0	8	-8.0
78	184	1	0.0	39.9	66	39.9	10	----	39.9	0.0	8	-8.0
79	186	1	0.0	39.4	66	39.4	10	----	39.4	0.0	8	-8.0
80	188	1	0.0	38.9	66	38.9	10	----	38.9	0.0	8	-8.0
81	190	1	0.0	38.3	66	38.3	10	----	38.3	0.0	8	-8.0
82	192	1	0.0	38.7	66	38.7	10	----	38.7	0.0	8	-8.0
83	194	1	0.0	39.3	66	39.3	10	----	39.3	0.0	8	-8.0
84	196	1	0.0	40.0	66	40.0	10	----	40.0	0.0	8	-8.0
85	200	1	0.0	48.0	66	48.0	10	----	48.0	0.0	8	-8.0
86	202	1	0.0	51.5	66	51.5	10	----	51.5	0.0	8	-8.0
87	205	1	0.0	51.5	66	51.5	10	----	51.5	0.0	8	-8.0
88	208	1	0.0	51.4	66	51.4	10	----	51.4	0.0	8	-8.0
89	210	1	0.0	51.4	66	51.4	10	----	51.4	0.0	8	-8.0

90	212	1	0.0	45.6	66	45.6	10	----	45.6	0.0	8	-8.0
91	214	1	0.0	45.6	66	45.6	10	----	45.6	0.0	8	-8.0
92	216	1	0.0	55.4	66	55.4	10	----	55.4	0.0	8	-8.0
93	218	1	0.0	55.3	66	55.3	10	----	55.3	0.0	8	-8.0
94	220	1	0.0	55.4	66	55.4	10	----	55.4	0.0	8	-8.0
95	221	1	0.0	55.3	66	55.3	10	----	55.3	0.0	8	-8.0
96	222	1	0.0	55.4	66	55.4	10	----	55.4	0.0	8	-8.0
97	223	1	0.0	51.5	66	51.5	10	----	51.5	0.0	8	-8.0
98	224	1	0.0	48.7	66	48.7	10	----	48.7	0.0	8	-8.0
99	226	1	0.0	46.9	66	46.9	10	----	46.9	0.0	8	-8.0
100	227	1	0.0	45.4	66	45.4	10	----	45.4	0.0	8	-8.0
101	228	1	0.0	45.1	66	45.1	10	----	45.1	0.0	8	-8.0
102	229	1	0.0	45.7	66	45.7	10	----	45.7	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	116	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

CMT
C. Fowler

10 August 2021
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 19070901.00
RUN: Proposed - AM
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
1a	1	1	0.0	50.5	66	50.5	10	----	50.5	0.0	8	-8.0
1b	3	1	0.0	50.8	66	50.8	10	----	50.8	0.0	8	-8.0
1c	5	1	0.0	51.0	66	51.0	10	----	51.0	0.0	8	-8.0
2a	7	1	0.0	49.7	66	49.7	10	----	49.7	0.0	8	-8.0
2b	9	1	0.0	50.0	66	50.0	10	----	50.0	0.0	8	-8.0
2c	11	1	0.0	50.3	66	50.3	10	----	50.3	0.0	8	-8.0
3a	13	1	0.0	55.7	66	55.7	10	----	55.7	0.0	8	-8.0
3b	15	1	0.0	56.6	66	56.6	10	----	56.6	0.0	8	-8.0
3c	16	1	0.0	56.8	66	56.8	10	----	56.8	0.0	8	-8.0
4a	18	1	0.0	54.5	66	54.5	10	----	54.5	0.0	8	-8.0
4b	20	1	0.0	55.4	66	55.4	10	----	55.4	0.0	8	-8.0
4c	22	1	0.0	55.9	66	55.9	10	----	55.9	0.0	8	-8.0
5a	24	1	0.0	49.3	66	49.3	10	----	49.3	0.0	8	-8.0
5b	26	1	0.0	49.6	66	49.6	10	----	49.6	0.0	8	-8.0
5c	28	1	0.0	50.0	66	50.0	10	----	50.0	0.0	8	-8.0
6a	30	1	0.0	47.8	66	47.8	10	----	47.8	0.0	8	-8.0
6b	32	1	0.0	48.1	66	48.1	10	----	48.1	0.0	8	-8.0
6c	34	1	0.0	48.3	66	48.3	10	----	48.3	0.0	8	-8.0
7a	36	1	0.0	48.2	66	48.2	10	----	48.2	0.0	8	-8.0
7b	38	1	0.0	48.4	66	48.4	10	----	48.4	0.0	8	-8.0
7c	40	1	0.0	48.6	66	48.6	10	----	48.6	0.0	8	-8.0
8	42	1	0.0	50.1	66	50.1	10	----	50.1	0.0	8	-8.0
9	46	1	0.0	40.9	66	40.9	10	----	40.9	0.0	8	-8.0

10	48	1	0.0	42.6	66	42.6	10	----	42.6	0.0	8	-8.0
11	50	1	0.0	42.6	66	42.6	10	----	42.6	0.0	8	-8.0
12	52	1	0.0	42.3	66	42.3	10	----	42.3	0.0	8	-8.0
13	54	1	0.0	42.2	66	42.2	10	----	42.2	0.0	8	-8.0
14	56	1	0.0	42.0	66	42.0	10	----	42.0	0.0	8	-8.0
15	58	1	0.0	41.9	66	41.9	10	----	41.9	0.0	8	-8.0
16	60	1	0.0	41.8	66	41.8	10	----	41.8	0.0	8	-8.0
17	62	1	0.0	41.6	66	41.6	10	----	41.6	0.0	8	-8.0
18	64	1	0.0	41.5	66	41.5	10	----	41.5	0.0	8	-8.0
19	66	1	0.0	41.4	66	41.4	10	----	41.4	0.0	8	-8.0
20	68	1	0.0	43.7	66	43.7	10	----	43.7	0.0	8	-8.0
21	70	1	0.0	45.6	66	45.6	10	----	45.6	0.0	8	-8.0
22	72	1	0.0	47.6	66	47.6	10	----	47.6	0.0	8	-8.0
23	74	1	0.0	46.3	66	46.3	10	----	46.3	0.0	8	-8.0
24	77	1	0.0	50.1	66	50.1	10	----	50.1	0.0	8	-8.0
25	79	1	0.0	50.2	66	50.2	10	----	50.2	0.0	8	-8.0
26	81	1	0.0	50.3	66	50.3	10	----	50.3	0.0	8	-8.0
27	83	1	0.0	49.1	66	49.1	10	----	49.1	0.0	8	-8.0
28	85	1	0.0	49.4	66	49.4	10	----	49.4	0.0	8	-8.0
29	88	1	0.0	49.8	66	49.8	10	----	49.8	0.0	8	-8.0
30	90	1	0.0	51.6	66	51.6	10	----	51.6	0.0	8	-8.0
31	92	1	0.0	53.7	66	53.7	10	----	53.7	0.0	8	-8.0
32	94	1	0.0	56.1	66	56.1	10	----	56.1	0.0	8	-8.0
33	96	1	0.0	53.5	66	53.5	10	----	53.5	0.0	8	-8.0
34	99	1	0.0	53.4	66	53.4	10	----	53.4	0.0	8	-8.0
35	101	1	0.0	52.2	66	52.2	10	----	52.2	0.0	8	-8.0
36	85	1	0.0	51.6	66	51.6	10	----	51.6	0.0	8	-8.0
37	103	1	0.0	51.2	66	51.2	10	----	51.2	0.0	8	-8.0
38	105	1	0.0	50.4	66	50.4	10	----	50.4	0.0	8	-8.0
39	107	1	0.0	49.0	66	49.0	10	----	49.0	0.0	8	-8.0
40	109	1	0.0	48.8	66	48.8	10	----	48.8	0.0	8	-8.0
41	111	1	0.0	48.2	66	48.2	10	----	48.2	0.0	8	-8.0
42	113	1	0.0	50.5	66	50.5	10	----	50.5	0.0	8	-8.0
43	117	1	0.0	50.4	66	50.4	10	----	50.4	0.0	8	-8.0
44	119	1	0.0	50.2	66	50.2	10	----	50.2	0.0	8	-8.0
45	121	1	0.0	50.2	66	50.2	10	----	50.2	0.0	8	-8.0
46	123	1	0.0	50.5	66	50.5	10	----	50.5	0.0	8	-8.0
47	125	1	0.0	50.0	66	50.0	10	----	50.0	0.0	8	-8.0
48	127	1	0.0	54.3	66	54.3	10	----	54.3	0.0	8	-8.0
49	129	1	0.0	54.3	66	54.3	10	----	54.3	0.0	8	-8.0

50	131	1	0.0	54.2	66	54.2	10	----	54.2	0.0	8	-8.0
51	133	1	0.0	54.1	66	54.1	10	----	54.1	0.0	8	-8.0
52	135	1	0.0	54.1	66	54.1	10	----	54.1	0.0	8	-8.0
53	137	1	0.0	43.4	66	43.4	10	----	43.4	0.0	8	-8.0
54	139	1	0.0	43.6	66	43.6	10	----	43.6	0.0	8	-8.0
55	141	1	0.0	44.3	66	44.3	10	----	44.3	0.0	8	-8.0
56	143	1	0.0	44.6	66	44.6	10	----	44.6	0.0	8	-8.0
57	145	1	0.0	45.3	66	45.3	10	----	45.3	0.0	8	-8.0
58	147	1	0.0	45.8	66	45.8	10	----	45.8	0.0	8	-8.0
59	149	1	0.0	46.8	66	46.8	10	----	46.8	0.0	8	-8.0
60	151	1	0.0	52.0	66	52.0	10	----	52.0	0.0	8	-8.0
61	153	1	0.0	52.5	66	52.5	10	----	52.5	0.0	8	-8.0
62	155	1	0.0	52.4	66	52.4	10	----	52.4	0.0	8	-8.0
63	157	1	0.0	52.3	66	52.3	10	----	52.3	0.0	8	-8.0
64	159	1	0.0	52.6	66	52.6	10	----	52.6	0.0	8	-8.0
65	161	1	0.0	52.6	66	52.6	10	----	52.6	0.0	8	-8.0
66	163	1	0.0	48.9	66	48.9	10	----	48.9	0.0	8	-8.0
67	164	1	0.0	47.0	66	47.0	10	----	47.0	0.0	8	-8.0
68	165	1	0.0	46.5	66	46.5	10	----	46.5	0.0	8	-8.0
69	166	1	0.0	46.1	66	46.1	10	----	46.1	0.0	8	-8.0
70	167	1	0.0	46.0	66	46.0	10	----	46.0	0.0	8	-8.0
71	169	1	0.0	46.0	66	46.0	10	----	46.0	0.0	8	-8.0
72	171	1	0.0	46.1	66	46.1	10	----	46.1	0.0	8	-8.0
73	173	1	0.0	45.9	66	45.9	10	----	45.9	0.0	8	-8.0
74	175	1	0.0	43.9	66	43.9	10	----	43.9	0.0	8	-8.0
75	177	1	0.0	43.8	66	43.8	10	----	43.8	0.0	8	-8.0
76	179	1	0.0	43.9	66	43.9	10	----	43.9	0.0	8	-8.0
77	182	1	0.0	44.1	66	44.1	10	----	44.1	0.0	8	-8.0
78	184	1	0.0	44.2	66	44.2	10	----	44.2	0.0	8	-8.0
79	186	1	0.0	44.8	66	44.8	10	----	44.8	0.0	8	-8.0
80	188	1	0.0	45.6	66	45.6	10	----	45.6	0.0	8	-8.0
81	190	1	0.0	46.0	66	46.0	10	----	46.0	0.0	8	-8.0
82	192	1	0.0	45.2	66	45.2	10	----	45.2	0.0	8	-8.0
83	194	1	0.0	44.5	66	44.5	10	----	44.5	0.0	8	-8.0
84	196	1	0.0	43.8	66	43.8	10	----	43.8	0.0	8	-8.0
85	200	1	0.0	46.7	66	46.7	10	----	46.7	0.0	8	-8.0
86	202	1	0.0	48.1	66	48.1	10	----	48.1	0.0	8	-8.0
87	205	1	0.0	47.7	66	47.7	10	----	47.7	0.0	8	-8.0
88	208	1	0.0	47.4	66	47.4	10	----	47.4	0.0	8	-8.0
89	210	1	0.0	47.3	66	47.3	10	----	47.3	0.0	8	-8.0

90	212	1	0.0	44.9	66	44.9	10	----	44.9	0.0	8	-8.0
91	214	1	0.0	44.3	66	44.3	10	----	44.3	0.0	8	-8.0
92	216	1	0.0	50.4	66	50.4	10	----	50.4	0.0	8	-8.0
93	218	1	0.0	50.5	66	50.5	10	----	50.5	0.0	8	-8.0
94	220	1	0.0	50.6	66	50.6	10	----	50.6	0.0	8	-8.0
95	221	1	0.0	50.6	66	50.6	10	----	50.6	0.0	8	-8.0
96	222	1	0.0	50.4	66	50.4	10	----	50.4	0.0	8	-8.0
97	223	1	0.0	48.9	66	48.9	10	----	48.9	0.0	8	-8.0
98	224	1	0.0	47.4	66	47.4	10	----	47.4	0.0	8	-8.0
99	226	1	0.0	46.4	66	46.4	10	----	46.4	0.0	8	-8.0
100	227	1	0.0	45.3	66	45.3	10	----	45.3	0.0	8	-8.0
101	228	1	0.0	45.1	66	45.1	10	----	45.1	0.0	8	-8.0
102	229	1	0.0	43.2	66	43.2	10	----	43.2	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	116	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

CMT
C. Fowler

10 August 2021
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 19070901.00
RUN: Proposed - PM
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
1a	1	1	0.0	51.0	66	51.0	10	----	51.0	0.0	8	-8.0
1b	3	1	0.0	51.3	66	51.3	10	----	51.3	0.0	8	-8.0
1c	5	1	0.0	51.5	66	51.5	10	----	51.5	0.0	8	-8.0
2a	7	1	0.0	50.2	66	50.2	10	----	50.2	0.0	8	-8.0
2b	9	1	0.0	50.4	66	50.4	10	----	50.4	0.0	8	-8.0
2c	11	1	0.0	50.7	66	50.7	10	----	50.7	0.0	8	-8.0
3a	13	1	0.0	55.6	66	55.6	10	----	55.6	0.0	8	-8.0
3b	15	1	0.0	56.5	66	56.5	10	----	56.5	0.0	8	-8.0
3c	16	1	0.0	56.7	66	56.7	10	----	56.7	0.0	8	-8.0
4a	18	1	0.0	54.4	66	54.4	10	----	54.4	0.0	8	-8.0
4b	20	1	0.0	55.3	66	55.3	10	----	55.3	0.0	8	-8.0
4c	22	1	0.0	55.9	66	55.9	10	----	55.9	0.0	8	-8.0
5a	24	1	0.0	49.5	66	49.5	10	----	49.5	0.0	8	-8.0
5b	26	1	0.0	49.8	66	49.8	10	----	49.8	0.0	8	-8.0
5c	28	1	0.0	50.1	66	50.1	10	----	50.1	0.0	8	-8.0
6a	30	1	0.0	48.1	66	48.1	10	----	48.1	0.0	8	-8.0
6b	32	1	0.0	48.3	66	48.3	10	----	48.3	0.0	8	-8.0
6c	34	1	0.0	48.6	66	48.6	10	----	48.6	0.0	8	-8.0
7a	36	1	0.0	48.5	66	48.5	10	----	48.5	0.0	8	-8.0
7b	38	1	0.0	48.7	66	48.7	10	----	48.7	0.0	8	-8.0
7c	40	1	0.0	48.9	66	48.9	10	----	48.9	0.0	8	-8.0
8	42	1	0.0	50.5	66	50.5	10	----	50.5	0.0	8	-8.0
9	46	1	0.0	40.9	66	40.9	10	----	40.9	0.0	8	-8.0

10	48	1	0.0	42.6	66	42.6	10	----	42.6	0.0	8	-8.0
11	50	1	0.0	42.5	66	42.5	10	----	42.5	0.0	8	-8.0
12	52	1	0.0	42.3	66	42.3	10	----	42.3	0.0	8	-8.0
13	54	1	0.0	42.1	66	42.1	10	----	42.1	0.0	8	-8.0
14	56	1	0.0	41.9	66	41.9	10	----	41.9	0.0	8	-8.0
15	58	1	0.0	41.7	66	41.7	10	----	41.7	0.0	8	-8.0
16	60	1	0.0	41.5	66	41.5	10	----	41.5	0.0	8	-8.0
17	62	1	0.0	41.2	66	41.2	10	----	41.2	0.0	8	-8.0
18	64	1	0.0	41.0	66	41.0	10	----	41.0	0.0	8	-8.0
19	66	1	0.0	40.7	66	40.7	10	----	40.7	0.0	8	-8.0
20	68	1	0.0	43.2	66	43.2	10	----	43.2	0.0	8	-8.0
21	70	1	0.0	43.0	66	43.0	10	----	43.0	0.0	8	-8.0
22	72	1	0.0	44.7	66	44.7	10	----	44.7	0.0	8	-8.0
23	74	1	0.0	43.8	66	43.8	10	----	43.8	0.0	8	-8.0
24	77	1	0.0	47.0	66	47.0	10	----	47.0	0.0	8	-8.0
25	79	1	0.0	47.2	66	47.2	10	----	47.2	0.0	8	-8.0
26	81	1	0.0	47.6	66	47.6	10	----	47.6	0.0	8	-8.0
27	83	1	0.0	46.9	66	46.9	10	----	46.9	0.0	8	-8.0
28	85	1	0.0	47.5	66	47.5	10	----	47.5	0.0	8	-8.0
29	88	1	0.0	48.2	66	48.2	10	----	48.2	0.0	8	-8.0
30	90	1	0.0	51.2	66	51.2	10	----	51.2	0.0	8	-8.0
31	92	1	0.0	53.5	66	53.5	10	----	53.5	0.0	8	-8.0
32	94	1	0.0	56.1	66	56.1	10	----	56.1	0.0	8	-8.0
33	96	1	0.0	53.3	66	53.3	10	----	53.3	0.0	8	-8.0
34	99	1	0.0	53.3	66	53.3	10	----	53.3	0.0	8	-8.0
35	101	1	0.0	52.4	66	52.4	10	----	52.4	0.0	8	-8.0
36	85	1	0.0	52.0	66	52.0	10	----	52.0	0.0	8	-8.0
37	103	1	0.0	51.8	66	51.8	10	----	51.8	0.0	8	-8.0
38	105	1	0.0	51.1	66	51.1	10	----	51.1	0.0	8	-8.0
39	107	1	0.0	50.0	66	50.0	10	----	50.0	0.0	8	-8.0
40	109	1	0.0	49.8	66	49.8	10	----	49.8	0.0	8	-8.0
41	111	1	0.0	49.3	66	49.3	10	----	49.3	0.0	8	-8.0
42	113	1	0.0	51.7	66	51.7	10	----	51.7	0.0	8	-8.0
43	117	1	0.0	51.6	66	51.6	10	----	51.6	0.0	8	-8.0
44	119	1	0.0	51.4	66	51.4	10	----	51.4	0.0	8	-8.0
45	121	1	0.0	51.4	66	51.4	10	----	51.4	0.0	8	-8.0
46	123	1	0.0	51.7	66	51.7	10	----	51.7	0.0	8	-8.0
47	125	1	0.0	51.2	66	51.2	10	----	51.2	0.0	8	-8.0
48	127	1	0.0	55.8	66	55.8	10	----	55.8	0.0	8	-8.0
49	129	1	0.0	55.7	66	55.7	10	----	55.7	0.0	8	-8.0

50	131	1	0.0	55.7	66	55.7	10	----	55.7	0.0	8	-8.0
51	133	1	0.0	55.6	66	55.6	10	----	55.6	0.0	8	-8.0
52	135	1	0.0	55.6	66	55.6	10	----	55.6	0.0	8	-8.0
53	137	1	0.0	44.2	66	44.2	10	----	44.2	0.0	8	-8.0
54	139	1	0.0	44.2	66	44.2	10	----	44.2	0.0	8	-8.0
55	141	1	0.0	44.8	66	44.8	10	----	44.8	0.0	8	-8.0
56	143	1	0.0	45.0	66	45.0	10	----	45.0	0.0	8	-8.0
57	145	1	0.0	45.5	66	45.5	10	----	45.5	0.0	8	-8.0
58	147	1	0.0	46.0	66	46.0	10	----	46.0	0.0	8	-8.0
59	149	1	0.0	46.9	66	46.9	10	----	46.9	0.0	8	-8.0
60	151	1	0.0	51.9	66	51.9	10	----	51.9	0.0	8	-8.0
61	153	1	0.0	52.4	66	52.4	10	----	52.4	0.0	8	-8.0
62	155	1	0.0	52.4	66	52.4	10	----	52.4	0.0	8	-8.0
63	157	1	0.0	52.3	66	52.3	10	----	52.3	0.0	8	-8.0
64	159	1	0.0	52.5	66	52.5	10	----	52.5	0.0	8	-8.0
65	161	1	0.0	52.5	66	52.5	10	----	52.5	0.0	8	-8.0
66	163	1	0.0	49.0	66	49.0	10	----	49.0	0.0	8	-8.0
67	164	1	0.0	47.3	66	47.3	10	----	47.3	0.0	8	-8.0
68	165	1	0.0	46.8	66	46.8	10	----	46.8	0.0	8	-8.0
69	166	1	0.0	46.5	66	46.5	10	----	46.5	0.0	8	-8.0
70	167	1	0.0	46.5	66	46.5	10	----	46.5	0.0	8	-8.0
71	169	1	0.0	46.6	66	46.6	10	----	46.6	0.0	8	-8.0
72	171	1	0.0	46.7	66	46.7	10	----	46.7	0.0	8	-8.0
73	173	1	0.0	46.6	66	46.6	10	----	46.6	0.0	8	-8.0
74	175	1	0.0	44.5	66	44.5	10	----	44.5	0.0	8	-8.0
75	177	1	0.0	44.4	66	44.4	10	----	44.4	0.0	8	-8.0
76	179	1	0.0	44.4	66	44.4	10	----	44.4	0.0	8	-8.0
77	182	1	0.0	44.5	66	44.5	10	----	44.5	0.0	8	-8.0
78	184	1	0.0	44.7	66	44.7	10	----	44.7	0.0	8	-8.0
79	186	1	0.0	45.1	66	45.1	10	----	45.1	0.0	8	-8.0
80	188	1	0.0	45.8	66	45.8	10	----	45.8	0.0	8	-8.0
81	190	1	0.0	46.1	66	46.1	10	----	46.1	0.0	8	-8.0
82	192	1	0.0	45.4	66	45.4	10	----	45.4	0.0	8	-8.0
83	194	1	0.0	44.8	66	44.8	10	----	44.8	0.0	8	-8.0
84	196	1	0.0	44.2	66	44.2	10	----	44.2	0.0	8	-8.0
85	200	1	0.0	47.5	66	47.5	10	----	47.5	0.0	8	-8.0
86	202	1	0.0	48.8	66	48.8	10	----	48.8	0.0	8	-8.0
87	205	1	0.0	48.4	66	48.4	10	----	48.4	0.0	8	-8.0
88	208	1	0.0	48.1	66	48.1	10	----	48.1	0.0	8	-8.0
89	210	1	0.0	48.0	66	48.0	10	----	48.0	0.0	8	-8.0

90	212	1	0.0	45.7	66	45.7	10	----	45.7	0.0	8	-8.0
91	214	1	0.0	45.1	66	45.1	10	----	45.1	0.0	8	-8.0
92	216	1	0.0	51.3	66	51.3	10	----	51.3	0.0	8	-8.0
93	218	1	0.0	51.4	66	51.4	10	----	51.4	0.0	8	-8.0
94	220	1	0.0	51.5	66	51.5	10	----	51.5	0.0	8	-8.0
95	221	1	0.0	51.4	66	51.4	10	----	51.4	0.0	8	-8.0
96	222	1	0.0	51.2	66	51.2	10	----	51.2	0.0	8	-8.0
97	223	1	0.0	49.7	66	49.7	10	----	49.7	0.0	8	-8.0
98	224	1	0.0	48.2	66	48.2	10	----	48.2	0.0	8	-8.0
99	226	1	0.0	47.2	66	47.2	10	----	47.2	0.0	8	-8.0
100	227	1	0.0	46.1	66	46.1	10	----	46.1	0.0	8	-8.0
101	228	1	0.0	46.0	66	46.0	10	----	46.0	0.0	8	-8.0
102	229	1	0.0	44.1	66	44.1	10	----	44.1	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	116	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Nick Batta

From: Bales, Ronald <rbales@indot.IN.gov>
Sent: Tuesday, September 7, 2021 8:18 AM
To: Nick Batta
Cc: Springer, Jason; Miller, Brandon
Subject: Noise Study - Des No. 1801907 - Hammond Local Trax

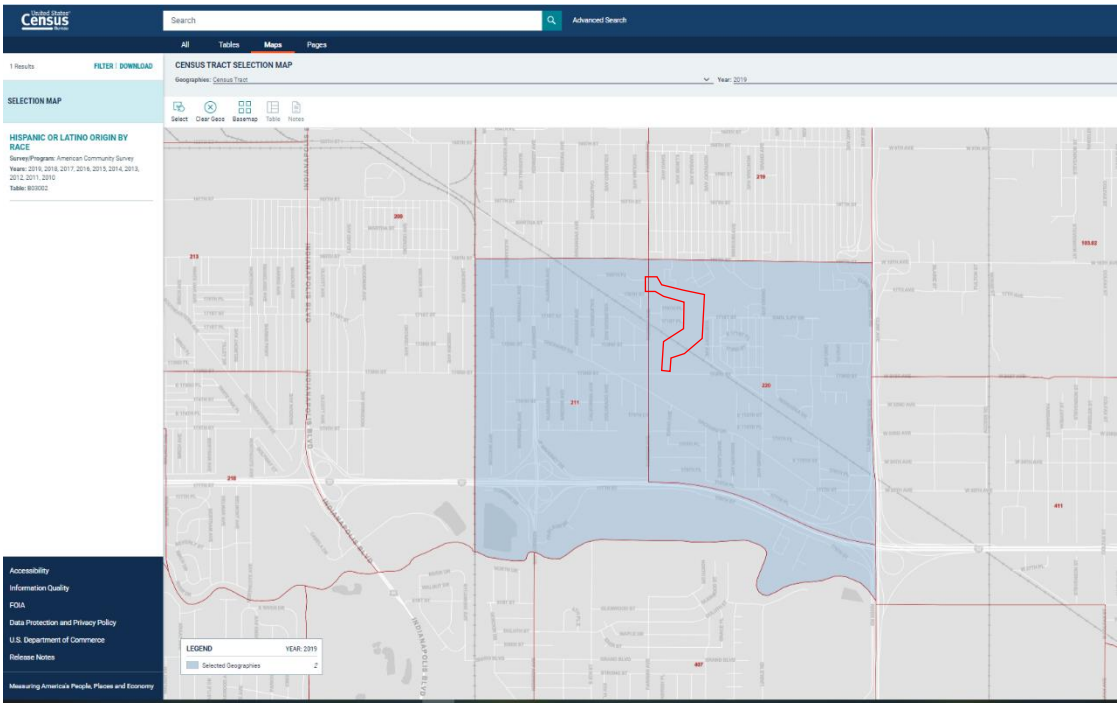
INDOT Environmental Services Division (ESD) has reviewed the noise analysis for the above-referenced project and found it to be technically sufficient. As you are aware, INDOT no longer comments on recommendations provided in noise studies for local agency projects. However, it is our assessment that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

Ron Bales
Environmental Policy Manager
Indiana Department of Transportation - Environmental Services Division
100 North Senate Ave., N758-ES
Indianapolis, IN 46204
Office: (317) 515-7908
Email: rbales@indot.in.gov

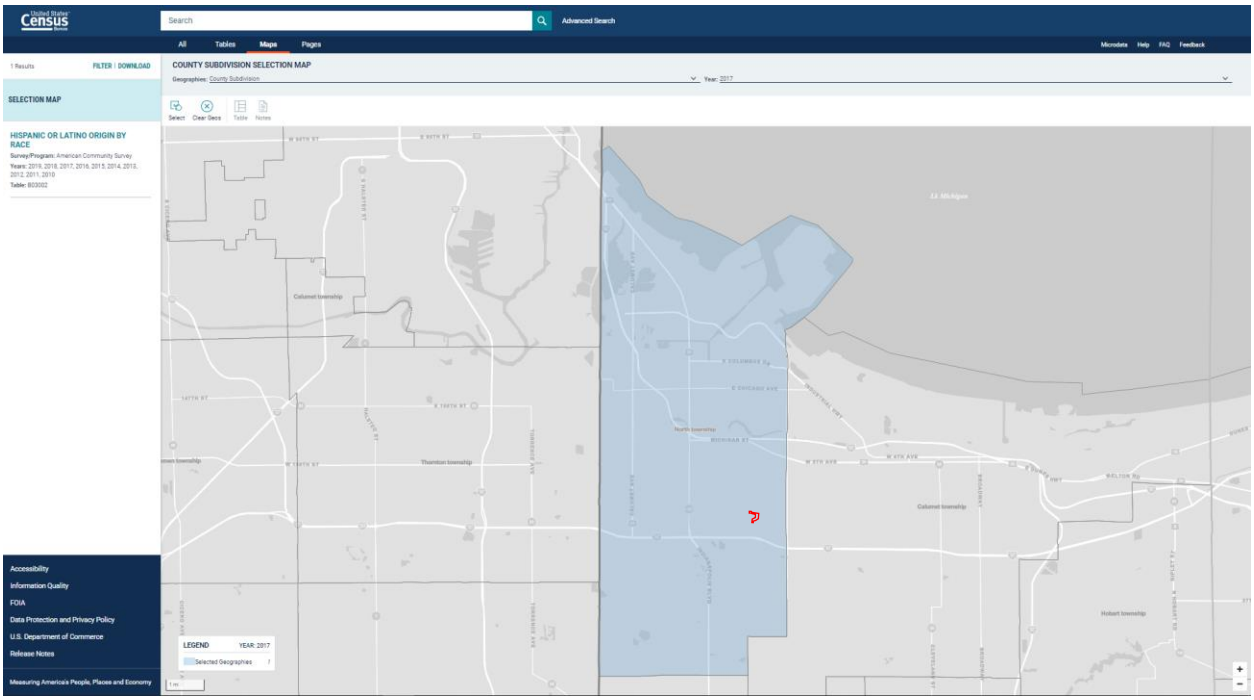
Hammond Local TRAX Project Governors Parkway CE Level 4

APPENDIX J: ENVIRONMENTAL JUSTICE ANALYSIS

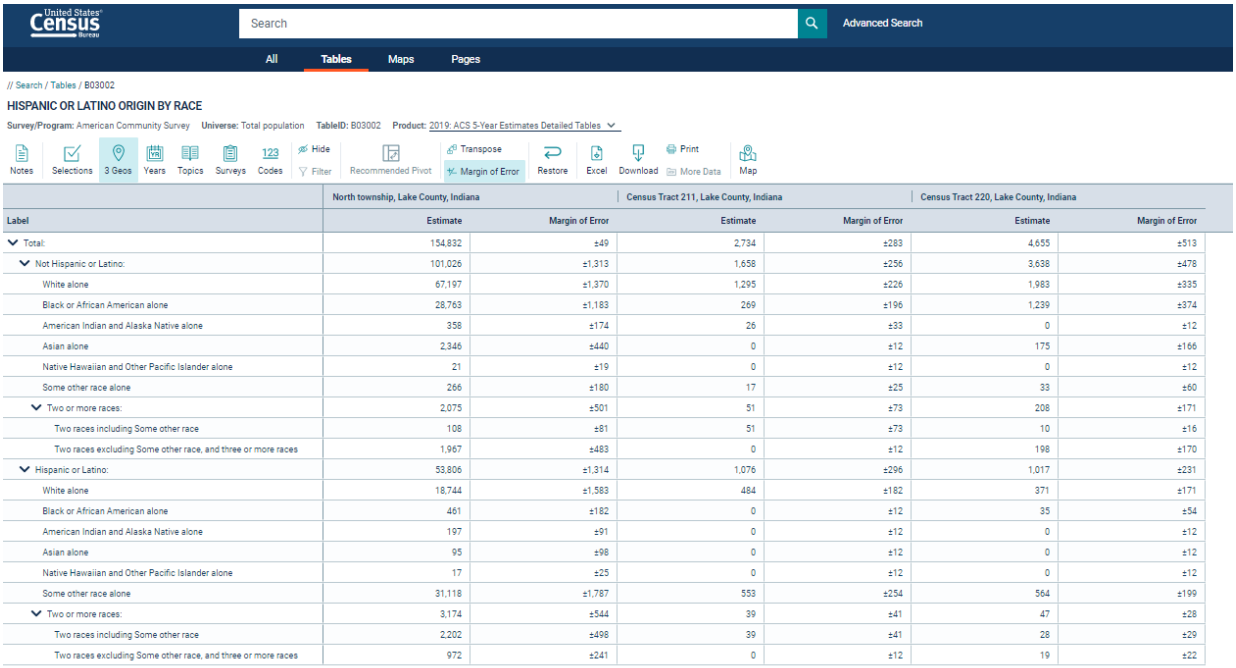
AC – Census Tracts 211 & 220, Lake County Indiana



COC – County Subdivision North Township, Lake County, Indiana

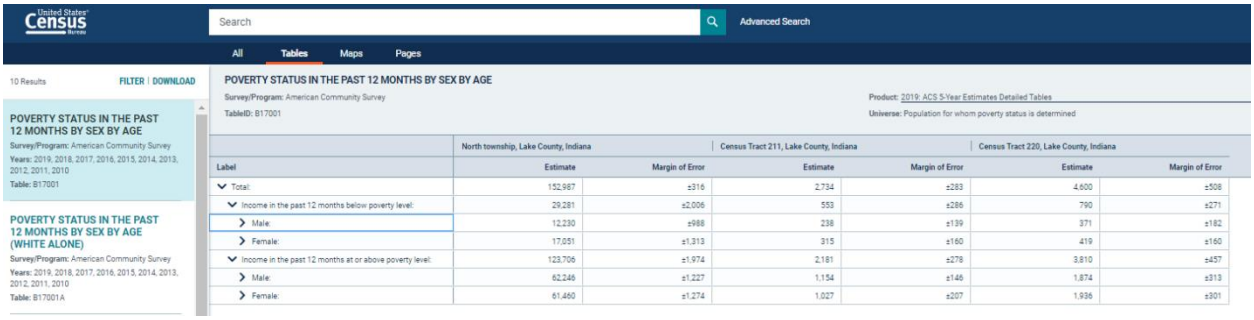


Minority Data



	North township, Lake County, Indiana		Census Tract 211, Lake County, Indiana		Census Tract 220, Lake County, Indiana	
Label	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Total:	154,832	±49	2,734	±283	4,655	±513
Not Hispanic or Latino:	101,026	±1,313	1,658	±256	3,638	±478
White alone	67,197	±1,370	1,295	±226	1,983	±335
Black or African American alone	28,763	±1,183	269	±196	1,239	±374
American Indian and Alaska Native alone	358	±174	26	±33	0	±12
Asian alone	2,346	±440	0	±12	175	±166
Native Hawaiian and Other Pacific Islander alone	21	±19	0	±12	0	±12
Some other race alone	266	±180	17	±25	33	±60
Two or more races:	2,075	±501	51	±73	208	±171
Two races including Some other race	108	±81	51	±73	10	±16
Two races excluding Some other race, and three or more races	1,967	±483	0	±12	198	±170
Hispanic or Latino:	53,806	±1,314	1,076	±296	1,017	±231
White alone	18,744	±1,583	484	±182	371	±171
Black or African American alone	461	±182	0	±12	35	±54
American Indian and Alaska Native alone	197	±91	0	±12	0	±12
Asian alone	95	±98	0	±12	0	±12
Native Hawaiian and Other Pacific Islander alone	17	±25	0	±12	0	±12
Some other race alone	31,118	±1,787	553	±254	564	±199
Two or more races:	3,174	±544	39	±41	47	±28
Two races including Some other race	2,202	±498	39	±41	28	±29
Two races excluding Some other race, and three or more races	972	±241	0	±12	19	±22

Low-Income Data



	North township, Lake County, Indiana		Census Tract 211, Lake County, Indiana		Census Tract 220, Lake County, Indiana	
Label	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Total:	152,987	±316	2,734	±283	4,600	±508
Income in the past 12 months below poverty level:	29,281	±2,006	553	±286	790	±271
Male:	12,230	±988	238	±139	371	±182
Female:	17,051	±1,313	315	±160	419	±160
Income in the past 12 months at or above poverty level:	123,706	±1,974	2,181	±278	3,810	±457
Male:	62,246	±1,227	1,154	±146	1,874	±313
Female:	61,460	±1,274	1,027	±207	1,936	±301

EJ Analysis of North Township and Census Tracts 211 and 220 in Lake County, Indiana
Parrish Avenue Project (Des No 1801907)

Census Table		COC	AC-1	AC-2
		North Township, Lake County, Indiana	**Census Tract 211, Lake County, Indiana**	**Census Tract 220, Lake County, Indiana**
	LOW INCOME			
	Population for whom poverty status is determined:			
B17001	Total	152,987	2,734	4,600
B17001	Income in the past 12 months below poverty level:	29,281	553	790
	Percent Low Income	**19.1%**	**20.2%**	**17.2%**
	AC > 50%?		**No**	**No**
	125 Percent of COC	**23.9%**	**AC < 125% COC**	**AC < 125% COC**
	Potential Low-income EJ Impact? (AC > 125% COC?)		**No**	**No**
	MINORITY			
B03002	Total Population:			
B03002	Total	154,832	2,734	4,655
B03002	Not Hispanic or Latino:	101,026	1,658	3,638
B03002	White alone	67,197	1,295	1,983
B03002	Black or African American alone	28,763	269	1,239
B03002	American Indian and Alaska Native alone	358	26	0
B03002	Asian alone	2,346	0	175
B03002	Native Hawaiian and Other Pacific Islander alone	21	0	0
B03002	Some other race alone	266	17	33
B03002	Two or more races:	2,075	51	208
B03002	Hispanic or Latino:	53,806	1,076	1,017
B03002	White alone	18,744	484	371
B03002	Black or African American alone	461	0	35
B03002	American Indian and Alaska Native alone	197	0	0
B03002	Asian alone	95	0	0
B03002	Native Hawaiian and Other Pacific Islander alone	17	0	0
B03002	Some other race alone	31,118	553	564
B03002	Two or more races:	3,174	39	47
	Number non-white/minority	**87,635**	**1,439**	**2,672**
	Percent non-white/minority	**56.6%**	**52.6%**	**57.4%**
	AC > 50%?		**Yes**	**Yes**
	125 Percent of COC	**70.8%**	**AC < 125% COC**	**AC < 125% COC**
	Potential Minority EJ Impact? (AC > 125% COC?)		**No**	**No**

Marion Wells

From: Fair, Terri <TFair@indot.IN.gov>
Sent: Tuesday, September 13, 2022 1:48 PM
To: Marion Wells
Cc: Passmore, Andrew D; Ross, Anthony; Nick Batta
Subject: RE: EJ Analysis - Hammond Local Trax - Des No. 1801907

We have no further comments currently.

When ready, please re-submit the CE.

From: Marion Wells <mwells@cmtengr.com>
Sent: Tuesday, September 13, 2022 10:22 AM
To: Fair, Terri <TFair@indot.IN.gov>
Cc: Passmore, Andrew D <APassmore@indot.IN.gov>; Ross, Anthony <ARoss3@indot.IN.gov>; Nick Batta <nbatta@cmtengr.com>
Subject: RE: EJ Analysis - Hammond Local Trax - Des No. 1801907

Hello Terri,

Attached is the revised EJ analysis. Please let me know if any additional changes are needed.

Thanks,
Marion

MARION WELLS | **Crawford, Murphy & Tilly** | w 937.701.6579 | m 513.907.2365
Environmental Scientist

From: Fair, Terri <TFair@indot.IN.gov>
Sent: Tuesday, September 13, 2022 10:09 AM
To: Marion Wells <mwells@cmtengr.com>
Cc: Passmore, Andrew D <APassmore@indot.IN.gov>; Ross, Anthony <ARoss3@indot.IN.gov>
Subject: FW: EJ Analysis - Hammond Local Trax - Des No. 1801907

Please find comments on the attached.

Hammond Local TRAX Project Governors Parkway CE Level 4

APPENDIX K: ADDITIONAL STUDIES

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

ProjectNumber	SubProjectCode	County	Property
1800005	1800005	Lake	Dowling Park
1800011	1800011	Lake	Tolleston Park
1800012	1800012	Lake	Washington Park
1800040	1800040	Lake	Homestead Park
1800055	1800055	Lake	Sheppard Memorial Park
1800059	1800059	Lake	Cheever Park
1800062	1800062	Lake	Leroy Township Park
1800063	1800063	Lake	Markley Memorial ParkEllendale Park
1800071	1800071	Lake	Cheever Park
1800087	1800087	Lake	Sheppard Memorial Park
1800102	1800102	Lake	Grand Boulevard Lake Recreation Area
1800108	1800108	Lake	Riverview Park
1800137	1800137	Lake	Northgate Park
1800150	1800150	Lake	Meadows Park
1800168	1800168	Lake	Sunnyside Park
1800170	1800170	Lake	Howe Park
1800189	1800189	Lake	Dowling Park
1800193	1800193	Lake	Harrison Park
1800194	1800194	Lake	Martin Luther King Jr. Park (Formerly Maywood Park
1800199	1800199	Lake	Ridgeway Park
1800202	1800202	Lake	Hatcher Park
1800206	1800206	Lake	Meadows Park
1800226	1800226	Lake	Hoosier Prairie Nature Preserve
1800227	1800227	Lake	Liberty Park
1800231	1800231	Lake	Pheasant Hills Community Park & Cherry Hill Tot-Lot
1800237	1800237	Lake	Wolf Lake Park (N & S)
1800239	1800239	Lake	Bluebird Park
1800253	1800253	Lake	Centennial Park
1800272	1800272	Lake	Wolf Lake Park (N & S)
1800273	1800273	Lake	Grand Kankakee Marsh County Park
1800302	1800302	Lake	Munster Community Park
1800329	1800329	Lake	Jackson Park
1800369	1800369H	Lake	Harrison Park
1800369	1800369D	Lake	Lemon Lake County Park
1800377	1800377	Lake	Main Square Park
1800386	1800386	Lake	Gibson Woods Nature Preserve & Tolleston Ridges Nature Preserve
1800405	1800405G	Lake	Clark and Pine Dune Swale Nature Preserve
1800414	1800414	Lake	Wolf Lake Park (N & S)
1800417	1800417	Lake	Centennial (Dan Rabin) Plaza & Trail
1800424	1800424	Lake	Lake Etta County Park
1800455	1800455	Lake	Deep River - Woods Mill County Park
1800464	1800464	Lake	Festival Park & Lakefront Park
1800473	1800473	Lake	Oak Ridge Prairie Co. Park
1800488	1800488	Lake	Marquette Park
1800489	1800489	Lake	Festival Park & Lakefront Park
1800522	1800522	Lake	Pavese Park
1800523	1800523	Lake	Lakewood Park
1800523.5	1800523.5	Lake	River Drive Park
1800528	1800528	Lake	Lowell Sports Park
1800533	1800533	Lake	Hobart City Ball Park
1800555	1800555	Lake	Scherwood Golf Course
1800580	1800580	Lake	Oak Ridge Park
1800586	1800586	Lake	Teibel Nature Park
1800586.1	1800586.1	Lake	Teibel Nature Park
1800590	1800590	Lake	Deep River County Park
1800622	1800622	Lake	Fireman's Park
1800636	1800636	Lake	Parrish Avenue 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.

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

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

A. Revision Date (MM/DD/YYYY)	B. Reporting Agency	C. Reason for Update (Select only one)	D. DOT Crossing Inventory Number
01 / 15 / 2022	☒ Railroad ☐ Transit ☐ State ☐ Other	☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction	478690B

Part I: Location and Classification Information

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

4. City / Municipality	5. Street/Road Name & Block Number	6. Highway Type & No.
☒ In ☐ Near HAMMOND	PARRISH STREET (Street/Road Name) | * (Block Number)	CITY ST

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

9. Railroad Division or Region	10. Railroad Subdivision or District	11. Branch or Line Name	12. RR Milepost
☐ None GREAT LAKES	☐ None CHICAGO	☒ None	B | 0499.650 | (prefix) | (nnnn.nnn) | (suffix)

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

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

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

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

26. HSR Corridor ID	27. Latitude in decimal degrees	28. Longitude in decimal degrees	29. Lat/Long Source
☒ N/A	(WGS84 std: nn.nnnnnnn) 41.58417	(WGS84 std: -nnn.nnnnnnn) -87.451861	☒ Actual ☐ Estimated

30.A. Railroad Use *	31.A. State Use * 1
30.B. Railroad Use *	31.B. State Use * 60
30.C. Railroad Use *	31.C. State Use * 2
30.D. Railroad Use *	31.D. State Use * 1
32.A. Narrative (Railroad Use) *	32.B. Narrative (State Use) *

33. Emergency Notification Telephone No. (posted)	34. Railroad Contact (Telephone No.)	35. State Contact (Telephone No.)
800-946-4744	800-946-4744	855-080-1

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains (6 AM to 6 PM)	1.B. Total Night Thru Trains (6 PM to 6 AM)	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
3	7	0	0	

2. Year of Train Count Data (YYYY)	3. Speed of Train at Crossing
2021	3.A. Maximum Timetable Speed (mph) 50 3.B. Typical Speed Range Over Crossing (mph) From 40 to 50

4. Type and Count of Tracks
Main 2 Siding 0 Yard 0 Transit 0 Industry 0

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

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

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*
01/15/2022		478690B

Part III: Highway or Pathway Traffic Control Device Information

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

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

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

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

2.J. Other MUTCD Signs ☒ Yes ☐ No	2.K. Private Crossing Signs *(if private)*	2.L. LED Enhanced Signs *(List types)*
Specify Type R15-2P Count 2 Specify Type _____ Count 0 Specify Type _____ Count _____	☐ Yes ☐ No	

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

3.A. Gate Arms *(count)*	3.B. Gate Configuration	3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*	3.D. Mast Mounted Flashing Lights *(count of masts)* 2	3.E. Total Count of Flashing Light Pairs
Roadway 2 Pedestrian 0	☐ 2 Quad ☐ 3 Quad ☐ 4 Quad ☐ Full *(Barrier)* Resistance ☐ Median Gates	Over Traffic Lane 2 ☒ Incandescent Not Over Traffic Lane 0 ☐ LED	☒ Incandescent ☐ LED ☒ Back Lights Included ☐ Side Lights Included	8

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells *(count)*
_____/_____ ☐ Not Required	☐ Yes Installed on *(MM/YYYY)* _____/_____ ☒ No	☐ Yes ☒ No	2

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

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

Part IV: Physical Characteristics

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

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* _____/_____ Width * 25 Length * 48

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

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

Part V: Public Highway Information

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

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

6. LRS Milepost *

7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 2018 AADT 2762	6 %	☐ Yes ☒ No Average Number per Day 0	☐ Yes ☒ No

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

Submitted by _____ Organization _____ Phone _____ Date _____

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

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

A. Revision Date (MM/DD/YYYY)	B. Reporting Agency	C. Reason for Update (Select only one)	D. DOT Crossing Inventory Number
07 / 11 / 2021	☒ Railroad ☐ Transit ☐ State ☐ Other	☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction	478690B

Part I: Location and Classification Information

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

4. City / Municipality	5. Street/Road Name & Block Number	6. Highway Type & No.
☒ In ☐ Near HAMMOND	PARRISH STREET (Street/Road Name) | * (Block Number)	CITY ST

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

9. Railroad Division or Region	10. Railroad Subdivision or District	11. Branch or Line Name	12. RR Milepost
☐ None GREAT LAKES	☐ None CHICAGO	☒ None	B | 0499.650 | (prefix) | (nnnn.nnn) | (suffix)

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

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

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

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

26. HSR Corridor ID	27. Latitude in decimal degrees	28. Longitude in decimal degrees	29. Lat/Long Source
☒ N/A	(WGS84 std: nn.nnnnnnn) 41.58417	(WGS84 std: -nnn.nnnnnnn) -87.451861	☒ Actual ☐ Estimated

30.A. Railroad Use *	31.A. State Use * 1
30.B. Railroad Use *	31.B. State Use * 60
30.C. Railroad Use *	31.C. State Use * 2
30.D. Railroad Use *	31.D. State Use * 1
32.A. Narrative (Railroad Use) *	32.B. Narrative (State Use) *

33. Emergency Notification Telephone No. (posted)	34. Railroad Contact (Telephone No.)	35. State Contact (Telephone No.)
800-946-4744	800-946-4744	855-080-1

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains (6 AM to 6 PM)	1.B. Total Night Thru Trains (6 PM to 6 AM)	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
3	7	0	0	

2. Year of Train Count Data (YYYY)	3. Speed of Train at Crossing
2021	3.A. Maximum Timetable Speed (mph) 50 3.B. Typical Speed Range Over Crossing (mph) From 40 to 50

4. Type and Count of Tracks
Main 2 Siding 0 Yard 0 Transit 0 Industry 0

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

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

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*
07/11/2021		478690B

Part III: Highway or Pathway Traffic Control Device Information

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

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

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

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

2.J. Other MUTCD Signs ☒ Yes ☐ No	2.K. Private Crossing Signs *(if private)*	2.L. LED Enhanced Signs *(List types)*
Specify Type R15-2P Count 2 Specify Type _____ Count 0 Specify Type _____ Count _____	☐ Yes ☐ No	

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

3.A. Gate Arms *(count)*	3.B. Gate Configuration	3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*	3.D. Mast Mounted Flashing Lights *(count of masts)* 2	3.E. Total Count of Flashing Light Pairs
Roadway 2 Pedestrian 0	☐ 2 Quad ☐ 3 Quad ☐ 4 Quad ☐ Full *(Barrier)* Resistance ☐ Median Gates	Over Traffic Lane 2 ☒ Incandescent Not Over Traffic Lane 0 ☐ LED	☒ Incandescent ☐ LED ☒ Back Lights Included ☐ Side Lights Included	8

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells *(count)*
_____/_____ ☐ Not Required	☐ Yes Installed on *(MM/YYYY)* _____/_____ ☒ No	☐ Yes ☒ No	2

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

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

Part IV: Physical Characteristics

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

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* _____/_____ Width * 25 Length * 48

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

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

Part V: Public Highway Information

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

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

6. LRS Milepost *

7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 2018 AADT 2762	6 %	☐ Yes ☒ No Average Number per Day 0	☐ Yes ☒ No

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

Submitted by _____ Organization _____ Phone _____ Date _____

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

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

A. Revision Date (MM/DD/YYYY)	B. Reporting Agency	C. Reason for Update (Select only one)	D. DOT Crossing Inventory Number
06 / 13 / 2021	☒ Railroad ☐ Transit ☐ State ☐ Other	☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction	478690B

Part I: Location and Classification Information

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

4. City / Municipality	5. Street/Road Name & Block Number	6. Highway Type & No.
☒ In ☐ Near HAMMOND	PARRISH STREET (Street/Road Name) | * (Block Number)	CITY ST

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

9. Railroad Division or Region	10. Railroad Subdivision or District	11. Branch or Line Name	12. RR Milepost
☐ None GREAT LAKES	☐ None CHICAGO	☒ None	B | 0499.650 | (prefix) | (nnnn.nnn) | (suffix)

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

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

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

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

26. HSR Corridor ID	27. Latitude in decimal degrees	28. Longitude in decimal degrees	29. Lat/Long Source
☒ N/A	(WGS84 std: nn.nnnnnnn) 41.58417	(WGS84 std: -nnn.nnnnnnn) -87.451861	☒ Actual ☐ Estimated

30.A. Railroad Use *	31.A. State Use * 1
30.B. Railroad Use *	31.B. State Use * 60
30.C. Railroad Use *	31.C. State Use * 2
30.D. Railroad Use *	31.D. State Use * 1
32.A. Narrative (Railroad Use) *	32.B. Narrative (State Use) *

33. Emergency Notification Telephone No. (posted)	34. Railroad Contact (Telephone No.)	35. State Contact (Telephone No.)
800-946-4744	800-946-4744	855-080-1

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains (6 AM to 6 PM)	1.B. Total Night Thru Trains (6 PM to 6 AM)	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
5	8	0	0	

2. Year of Train Count Data (YYYY)	3. Speed of Train at Crossing
2020	3.A. Maximum Timetable Speed (mph) 50 3.B. Typical Speed Range Over Crossing (mph) From 40 to 50

4. Type and Count of Tracks
Main 2 Siding 0 Yard 0 Transit 0 Industry 0

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

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

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*
06/13/2021		478690B

Part III: Highway or Pathway Traffic Control Device Information

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

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

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

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

2.J. Other MUTCD Signs ☒ Yes ☐ No	2.K. Private Crossing Signs *(if private)*	2.L. LED Enhanced Signs *(List types)*
Specify Type R15-2P Count 2 Specify Type _____ Count 0 Specify Type _____ Count _____	☐ Yes ☐ No	

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

3.A. Gate Arms *(count)*	3.B. Gate Configuration	3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*	3.D. Mast Mounted Flashing Lights *(count of masts)* 2	3.E. Total Count of Flashing Light Pairs
Roadway 2 Pedestrian 0	☐ 2 Quad ☐ 3 Quad ☐ 4 Quad ☐ Full *(Barrier)* Resistance ☐ Median Gates	Over Traffic Lane 2 ☒ Incandescent Not Over Traffic Lane 0 ☐ LED	☒ Incandescent ☐ LED ☒ Back Lights Included ☐ Side Lights Included	8

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells *(count)*
_____/_____ ☐ Not Required	☐ Yes Installed on *(MM/YYYY)* _____/_____ ☒ No	☐ Yes ☒ No	2

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

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

Part IV: Physical Characteristics

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

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* _____/_____ Width * 25 Length * 48

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

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

Part V: Public Highway Information

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

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

6. LRS Milepost *

7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 2018 AADT 2762	6 %	☐ Yes ☒ No Average Number per Day 0	☐ Yes ☒ No

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

Submitted by _____ Organization _____ Phone _____ Date _____

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

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

A. Revision Date (MM/DD/YYYY)	B. Reporting Agency	C. Reason for Update (Select only one)	D. DOT Crossing Inventory Number
05 / 25 / 2021	☐ Railroad ☐ Transit ☒ State ☐ Other	☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction	478690B

Part I: Location and Classification Information

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

4. City / Municipality	5. Street/Road Name & Block Number	6. Highway Type & No.
☒ In ☐ Near HAMMOND	PARRISH STREET (Street/Road Name) | * (Block Number)	CITY ST

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

9. Railroad Division or Region	10. Railroad Subdivision or District	11. Branch or Line Name	12. RR Milepost
☐ None DEARBORN	☐ None CHICAGO	☒ None	B | 0499.650 | (prefix) | (nnnn.nnn) | (suffix)

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

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

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

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

26. HSR Corridor ID	27. Latitude in decimal degrees	28. Longitude in decimal degrees	29. Lat/Long Source
☒ N/A	(WGS84 std: nn.nnnnnnn) 41.58417	(WGS84 std: -nnn.nnnnnnn) -87.451861	☒ Actual ☐ Estimated

30.A. Railroad Use *	31.A. State Use * 1
30.B. Railroad Use *	31.B. State Use * 60
30.C. Railroad Use *	31.C. State Use * 2
30.D. Railroad Use *	31.D. State Use * 1
32.A. Narrative (Railroad Use) *	32.B. Narrative (State Use) *

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

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains (6 AM to 6 PM)	1.B. Total Night Thru Trains (6 PM to 6 AM)	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
20	20	0	0	

2. Year of Train Count Data (YYYY)	3. Speed of Train at Crossing
2019	3.A. Maximum Timetable Speed (mph) 50 3.B. Typical Speed Range Over Crossing (mph) From 40 to 50

4. Type and Count of Tracks
Main 2 Siding 0 Yard 0 Transit 0 Industry 0

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

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

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*
05/25/2021		478690B

Part III: Highway or Pathway Traffic Control Device Information

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

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

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

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

2.J. Other MUTCD Signs ☒ Yes ☐ No	2.K. Private Crossing Signs *(if private)*	2.L. LED Enhanced Signs *(List types)*
Specify Type R15-2P Count 2 Specify Type _____ Count 0 Specify Type _____ Count _____	☐ Yes ☐ No	

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

3.A. Gate Arms *(count)*	3.B. Gate Configuration	3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*	3.D. Mast Mounted Flashing Lights *(count of masts)* 2	3.E. Total Count of Flashing Light Pairs
Roadway 2 Pedestrian 0	☐ 2 Quad ☐ 3 Quad ☐ 4 Quad ☐ Full *(Barrier)* Resistance ☐ Median Gates	Over Traffic Lane 2 ☒ Incandescent Not Over Traffic Lane 0 ☐ LED	☒ Incandescent ☐ LED ☒ Back Lights Included ☐ Side Lights Included	8

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells *(count)*
_____/_____ ☐ Not Required	☐ Yes Installed on *(MM/YYYY)* _____/_____ ☒ No	☐ Yes ☒ No	2

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

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

Part IV: Physical Characteristics

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

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* _____/_____ Width * 25 Length * 48

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

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

Part V: Public Highway Information

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

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

6. LRS Milepost *

7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 2018 AADT 2762	6 %	☐ Yes ☒ No Average Number per Day 0	☐ Yes ☒ No

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

Submitted by _____ Organization _____ Phone _____ Date _____

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

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

A. Revision Date (MM/DD/YYYY)	B. Reporting Agency	C. Reason for Update (Select only one)	D. DOT Crossing Inventory Number
12 / 17 / 2019	☒ Railroad ☐ Transit ☐ State ☐ Other	☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction	478690B

Part I: Location and Classification Information

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

4. City / Municipality	5. Street/Road Name & Block Number	6. Highway Type & No.
☒ In ☐ Near HAMMOND	PARRISH STREET | (Street/Road Name) | * (Block Number)	CITY ST

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

9. Railroad Division or Region	10. Railroad Subdivision or District	11. Branch or Line Name	12. RR Milepost
☐ None DEARBORN	☐ None CHICAGO	☒ None	B | 0499.650 | (prefix) | (nnnn.nnn) | (suffix)

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

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

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

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

26. HSR Corridor ID	27. Latitude in decimal degrees	28. Longitude in decimal degrees	29. Lat/Long Source
☒ N/A	(WGS84 std: nn.nnnnnnn) 41.58417	(WGS84 std: -nnn.nnnnnnn) -87.451861	☒ Actual ☐ Estimated

30.A. Railroad Use *	31.A. State Use * 1
30.B. Railroad Use *	31.B. State Use * 60
30.C. Railroad Use *	31.C. State Use * 2
30.D. Railroad Use *	31.D. State Use * 1
32.A. Narrative (Railroad Use) *	32.B. Narrative (State Use) *

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

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains (6 AM to 6 PM)	1.B. Total Night Thru Trains (6 PM to 6 AM)	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
20	20	0	0	

2. Year of Train Count Data (YYYY)	3. Speed of Train at Crossing
2019	3.A. Maximum Timetable Speed (mph) 50 3.B. Typical Speed Range Over Crossing (mph) From 40 to 50

4. Type and Count of Tracks
Main 2 Siding 0 Yard 0 Transit 0 Industry 0

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

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

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*
12/17/2019		478690B

Part III: Highway or Pathway Traffic Control Device Information

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

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

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

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

2.J. Other MUTCD Signs ☒ Yes ☐ No	2.K. Private Crossing Signs *(if private)*	2.L. LED Enhanced Signs *(List types)*
Specify Type R15-2P Count 2 Specify Type _____ Count 0 Specify Type _____ Count _____	☐ Yes ☐ No	

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

3.A. Gate Arms *(count)*	3.B. Gate Configuration	3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*	3.D. Mast Mounted Flashing Lights *(count of masts)* 2	3.E. Total Count of Flashing Light Pairs
Roadway 2 Pedestrian 0	☐ 2 Quad ☐ 3 Quad ☐ 4 Quad ☐ Full *(Barrier)* Resistance ☐ Median Gates	Over Traffic Lane 2 ☒ Incandescent Not Over Traffic Lane 0 ☐ LED	☒ Incandescent ☐ LED ☒ Back Lights Included ☐ Side Lights Included	8

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells *(count)*
_____/_____ ☐ Not Required	☐ Yes Installed on *(MM/YYYY)* _____/_____ ☒ No	☐ Yes ☒ No	2

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

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

Part IV: Physical Characteristics

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

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* _____/_____ Width * 25 Length * 48

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

6. Intersecting Roadway within 500 feet?	7. Smallest Crossing Angle	8. Is Commercial Power Available? *
☒ Yes ☐ No If Yes, Approximate Distance *(feet)* 200	☐ 0° – 29° ☐ 30° – 59° ☒ 60° - 90°	☒ Yes ☐ No

Part V: Public Highway Information

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

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

6. LRS Milepost *

7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 1986 AADT 000500	04 %	☐ Yes ☒ No Average Number per Day 0	☐ Yes ☒ No

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

Submitted by _____ Organization _____ Phone _____ Date _____

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

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

A. Revision Date (MM/DD/YYYY)	B. Reporting Agency	C. Reason for Update (Select only one)	D. DOT Crossing Inventory Number
08 / 01 / 2018	☐ Railroad ☐ Transit ☒ State ☐ Other	☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction	478690B

Part I: Location and Classification Information

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

4. City / Municipality	5. Street/Road Name & Block Number	6. Highway Type & No.
☒ In ☐ Near HAMMOND	PARRISH ST (Street/Road Name) | * (Block Number)	CITY ST

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

9. Railroad Division or Region	10. Railroad Subdivision or District	11. Branch or Line Name	12. RR Milepost
☐ None LAKE	☐ None CHICAGO	☐ None CHICAGO	(prefix) | 0499.61 (nnnn.nnn) | (suffix)

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

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

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

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

26. HSR Corridor ID	27. Latitude in decimal degrees	28. Longitude in decimal degrees	29. Lat/Long Source
☐ N/A	(WGS84 std: nn.nnnnnnn) 41.5841700	(WGS84 std: -nnn.nnnnnnn) -87.4519100	☒ Actual ☐ Estimated

30.A. Railroad Use *	31.A. State Use * 1
30.B. Railroad Use *	31.B. State Use * 60
30.C. Railroad Use *	31.C. State Use * 2
30.D. Railroad Use *	31.D. State Use * 1
32.A. Narrative (Railroad Use) *	32.B. Narrative (State Use) *

33. Emergency Notification Telephone No. (posted)	34. Railroad Contact (Telephone No.)	35. State Contact (Telephone No.)
800-453-2530	800-946-4744	855-080-1

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains (6 AM to 6 PM)	1.B. Total Night Thru Trains (6 PM to 6 AM)	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
20	1	2		

2. Year of Train Count Data (YYYY)	3. Speed of Train at Crossing
	3.A. Maximum Timetable Speed (mph) 60 3.B. Typical Speed Range Over Crossing (mph) From 5 to 50

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

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

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

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*
08/01/2018		478690B

Part III: Highway or Pathway Traffic Control Device Information

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

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

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

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

2.J. Other MUTCD Signs ☒ Yes ☐ No	2.K. Private Crossing Signs *(if private)*	2.L. LED Enhanced Signs *(List types)*
Specify Type R15-2P Count 2 Specify Type _____ Count 0 Specify Type _____ Count _____	☐ Yes ☐ No	

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

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Roadway 2 Pedestrian _____	☒ 2 Quad ☐ Full *(Barrier)* Resistance ☐ 3 Quad ☐ 4 Quad ☐ Median Gates	Over Traffic Lane 2 ☐ Incandescent Not Over Traffic Lane 0 ☐ LED	☐ Incandescent ☐ LED ☒ Back Lights Included ☐ Side Lights Included	8

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_____/_____ ☐ Not Required	☐ Yes Installed on *(MM/YYYY)* _____/_____ ☐ No	☐ Yes ☒ No	1

3.J. Non-Train Active Warning
☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☐ None

3.K. Other Flashing Lights or Warning Devices
Count 0 Specify type _____

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

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1. Traffic Lanes Crossing Railroad	2. Is Roadway/Pathway Paved?	3. Does Track Run Down a Street?	4. Is Crossing Illuminated? *(Street lights within approx. 50 feet from nearest rail)*
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1. Highway System	2. Functional Classification of Road at Crossing	3. Is Crossing on State Highway System?	4. Highway Speed Limit
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5. Linear Referencing System *(LRS Route ID)* *

6. LRS Milepost *

7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 1986 AADT 000500	04 %	☐ Yes ☒ No Average Number per Day 0	☐ Yes ☒ No

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

Submitted by _____ Organization _____ Phone _____ Date _____

Memo was included as Appendix F of the Engineering Assessment prepared by HDR (2022).

TO: Jason Holder
Local Trax Program Manager
Indiana Department of Transportation

FROM: Nick Batta, Project Manager
Crawford, Murphy and Tilly, Inc.

DATE: November 19, 2019

SUBJECT: Preliminary Screening of Alternatives
City of Hammond Local Trax (Des No. 18001907)

The purpose of this memo is to conduct a preliminary screening of alternatives to clarify which ones are worthy of a more detailed review.

Project Purpose and Need

Below is a current draft of the project's purpose and need:

The need of the project is evident in the delays and exposure to stopped trains that vehicles and pedestrians experience at the crossings of the NS tracks in the Hessville area of Hammond. The purpose the project is reduce these delays and exposure the trains present to vehicles and pedestrians.

Additional project goals from the City of Hammond include the following:

- Reducing the expose to trains for pedestrians specifically going to and from Morton Senior High School, C. N. Scott Middle School[1] and Hess Elementary School
- Minimizing the relocations of residences and businesses
- Minimizing construction costs

Outline of Alternatives Screening

A preliminary screening effort will be completed at the following crossings (northwest to southeast):

- Kennedy Avenue
- 169th Street
- Kennedy Avenue/169th Street Roundabouts
- 173rd Street
- Grand Avenue

The three additional alternatives (Parrish Avenue on existing alignment, Parrish Avenue on a new alignment, and the No-Build option) have already been screened in the current draft of the engineering assessment report and their information is referenced into this memo.

[1] The middle school is used for alternatives analysis since it is centrally-located.

This screening will establish a basic footprint for the project, evaluate impacts to adjacent parcels, and develop a construction cost estimate using parametric unit rates (i.e. cost per foot and/or cost per area). Other red flags will be identified, although their costs may not be evaluated (if too complicated to ascertain) at this early stage since this is meant to be a high-level evaluation. A basic exhibit will also be created at each crossing. Each alternative will be screened for compliance with the purpose and need and project goals stated above. Up to two alternatives, along with the no-build, will be carried forward for a more detailed assessment in the Engineering Assessment report.

For consistency of the evaluation, all alternatives used the same basic typical section that the City of Hammond presented in their application, an assumption that new bridge would span the railroad right of way, and the approach work would extend 700' beyond the end of each bridge (which is equivalent to a 5% profile grade).

Preliminary Alternatives

Preliminary Alternative	Construction Cost Estimate[2]	Number of Relocations	Other Potential Pros/Cons
Kennedy Avenue	$12,230,000	21 (Commercial)	•Significant impacts to "downtown" businesses at Martha Street intersection •Bridge construction in close vicinity to St. Mary Cemetery •Eliminates turning movements at 169th Street •Daily traffic volumes ~14,890 •Overpass 1.15 miles from schools
169th Street	$14,100,000	8 (Commercial) 4 (Residential)	•Eliminates turning movements at Kennedy Avenue •Road construction in the close vicinity of Hess Cemetery •Daily traffic volumes ~11,240 •Overpass 1.15 miles from schools
Kennedy Avenue/169th Street Roundabouts	$16,030,000	24 (Commercial) 2 (Residential)	•Significant impacts to "downtown" businesses at Martha Street intersection •Allows turning movements at the intersection •Road construction in the close vicinity of Hess Cemetery •Overpass 1.15 miles from schools
Parrish Avenue (existing)	$10,290,000	13 (Residential)	•Overpass 0.6 mile from schools •Daily traffic volumes ~3,500
Parrish Avenue (realigned)	$11,670,000	2 (Residential)	•Overpass 0.4 mile from schools •Projected daily traffic volumes ~5,600 •Significant amount of tree removal

[2] Parametric estimating was used, primarily based upon the more detailed cost estimate completed for the Parrish Avenue (existing) alternatives. Generalized rates of $150/SFT and $4,950/LFT were used.

173rd Street	$8,870,000	6 (Residential)	•Significant visual impacts to Greenbriar Apartments. •Eliminates one of the drives into Greenbriar Apartments (leaving on one for the entire complex, which may violate city zoning) •Daily traffic volume ~1,860 •Overpass 0.2 miles from schools
Grand Avenue	$8,480,000	9 (Residential)	•Significant visual impacts to Greenbriar Apartments. •Eliminates one of the drives into Greenbriar Apartments (leaving on one for the entire complex, which may violate city zoning) •Significant visual impacts to Greenbriar Apartments. •Significant visual impacts to houses within Orchard Acres •Eliminates the 174th Street access to Grand Avenue, leaving only one entrance to the Orchard Acres subdivisions. This may violate city zoning) •Daily traffic volume ~4,560 •Overpass 0.2 miles from schools

Conclusions

The alternatives involving Kennedy Avenue and 169th Street would positively impact the highest number of traffic volumes; however all three of those alternatives are the highest in construction costs and impacts to residences and businesses. The two options along Kennedy Avenue would also have heavy impacts to the potentially historic buildings near the Kennedy Avenue and Martha Street intersection, as well introduce construction activity adjacent to cemeteries. Finally, these three options would have the least benefit to pedestrians going to and from the schools along Grand Avenue.

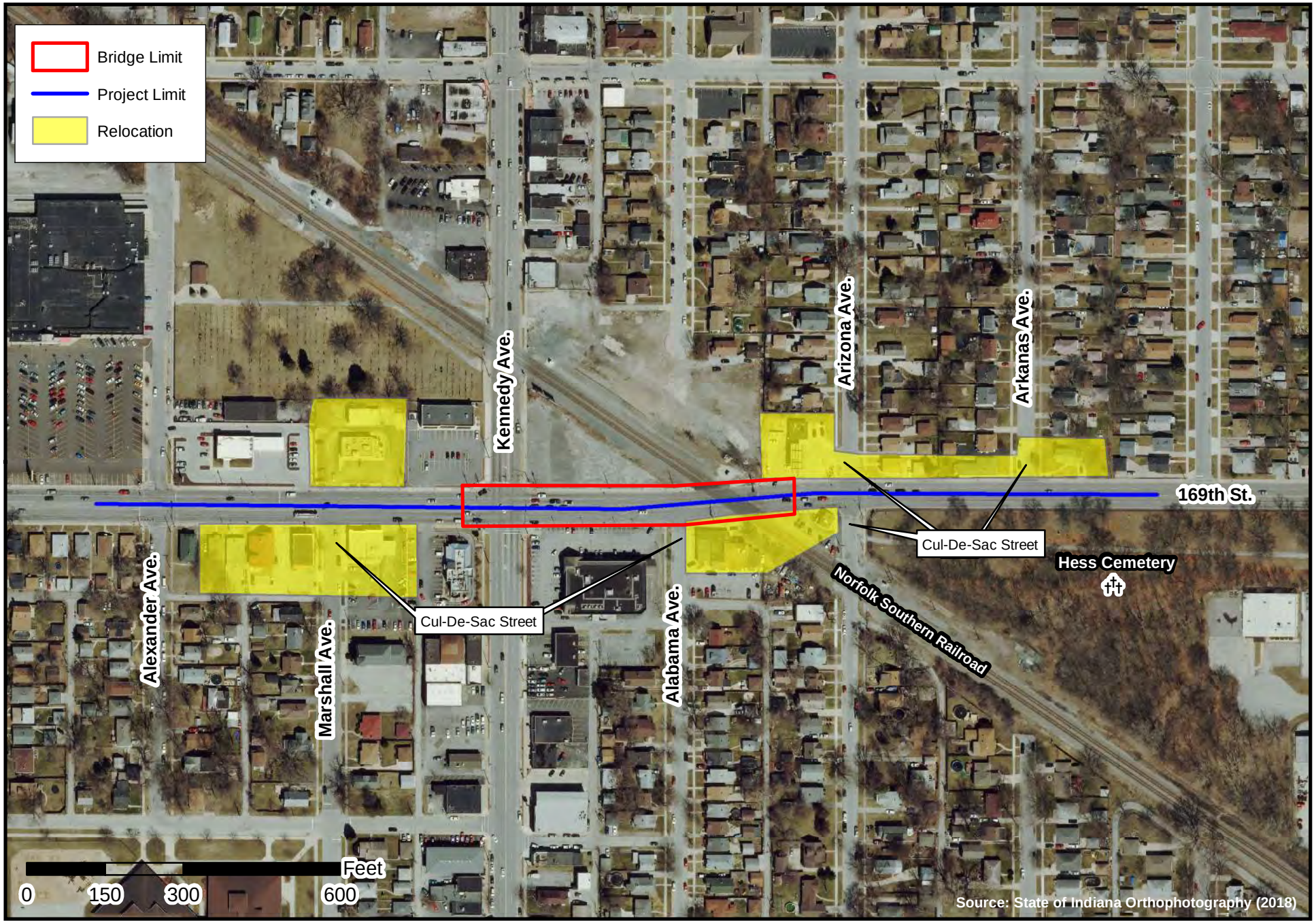
The alternatives along 173rd Street and Grand Avenue are the lowest construction costs and would likely have the most direct benefit to the schools. The number of relocations may be under-estimated though, as potentially serious access issues are created by reducing the entrances into the Greenbriar Apartments and Orchard Park residential neighborhood. These alternatives also pose negative impacts to the residences and apartments that would remain, being so close to an elevated roadway on MSE walls.

The two alternatives for Parrish Avenue are similar in terms of construction costs, impacts to the traveling public, and proximity to the schools. The realigned version has much less impacts to existing residences. The realigned version would have a high impact of tree loss and introduces a curvy roadway into an area more prone to a gridded street pattern.

All seven options considered satisfy the purpose and need of the project. The realigned version of Parrish Avenue is the preferred alternative for the following reasons:

- Least amount of residential and commercial relocations
- Least amount of indirect impacts to residences and business that are remaining

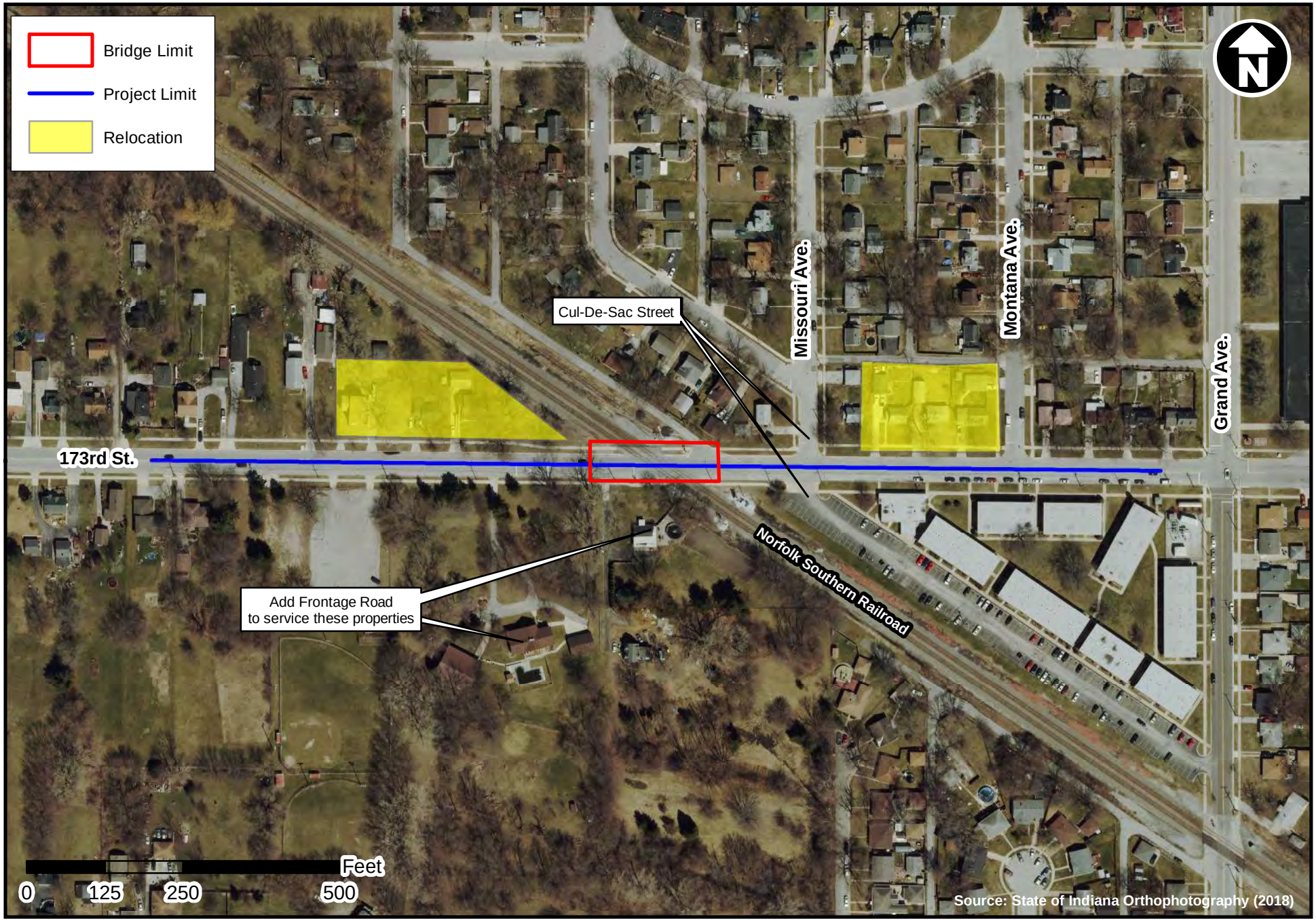
- Reasonably close proximity to the schools along Grand Avenue
- Competitive construction cost estimate compared to the others



169th Street Bridge over Norfolk Southern Railroad

Project Limits and Relocations

Crawford, Murphy & Tilly



173rd Street Bridge over Norfolk Southern Railroad

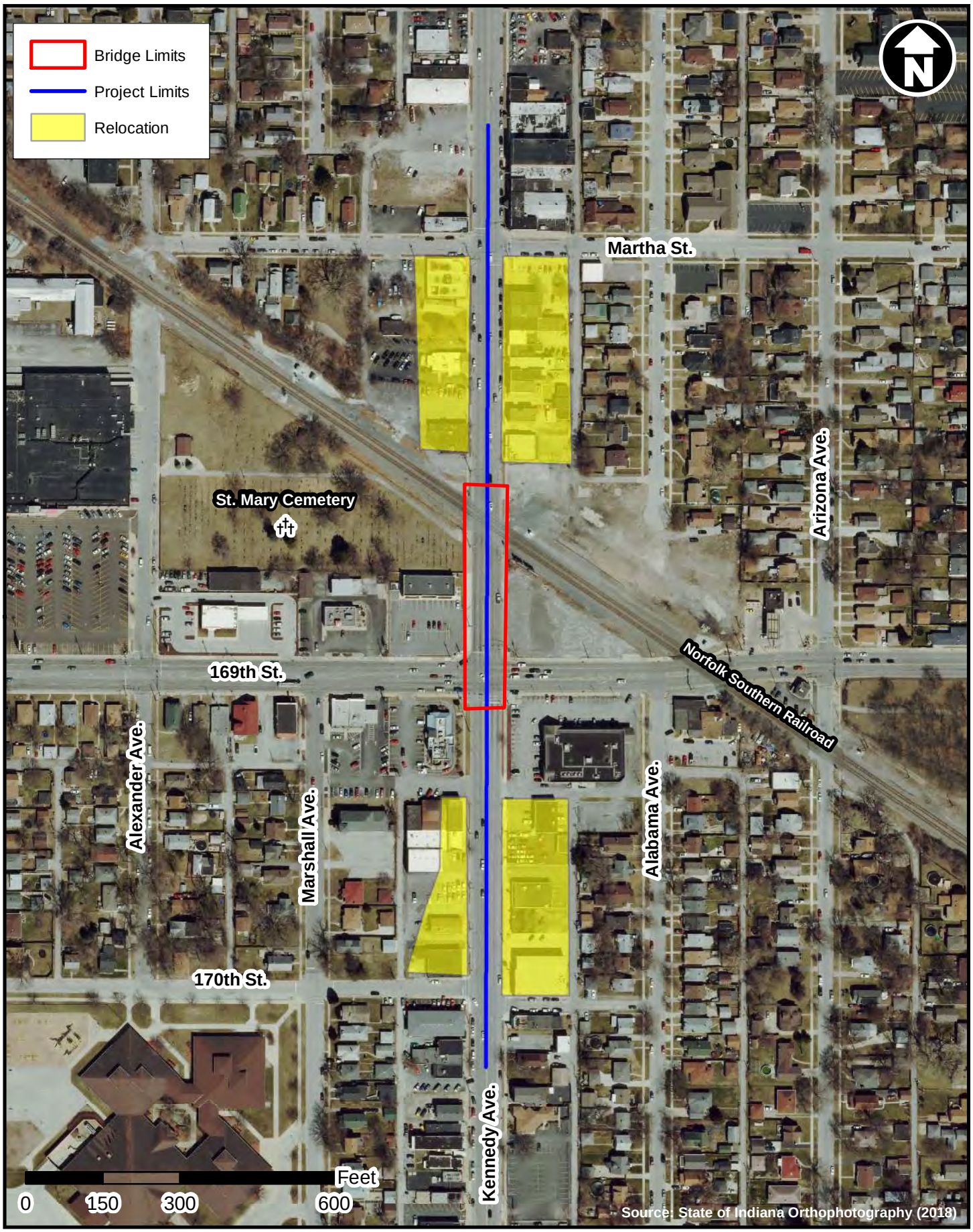
Project Limits and Relocations

Crawford, Murphy & Tilly

Grand Avenue Bridge over Norfolk Southern Railroad

Project Limits and Relocations

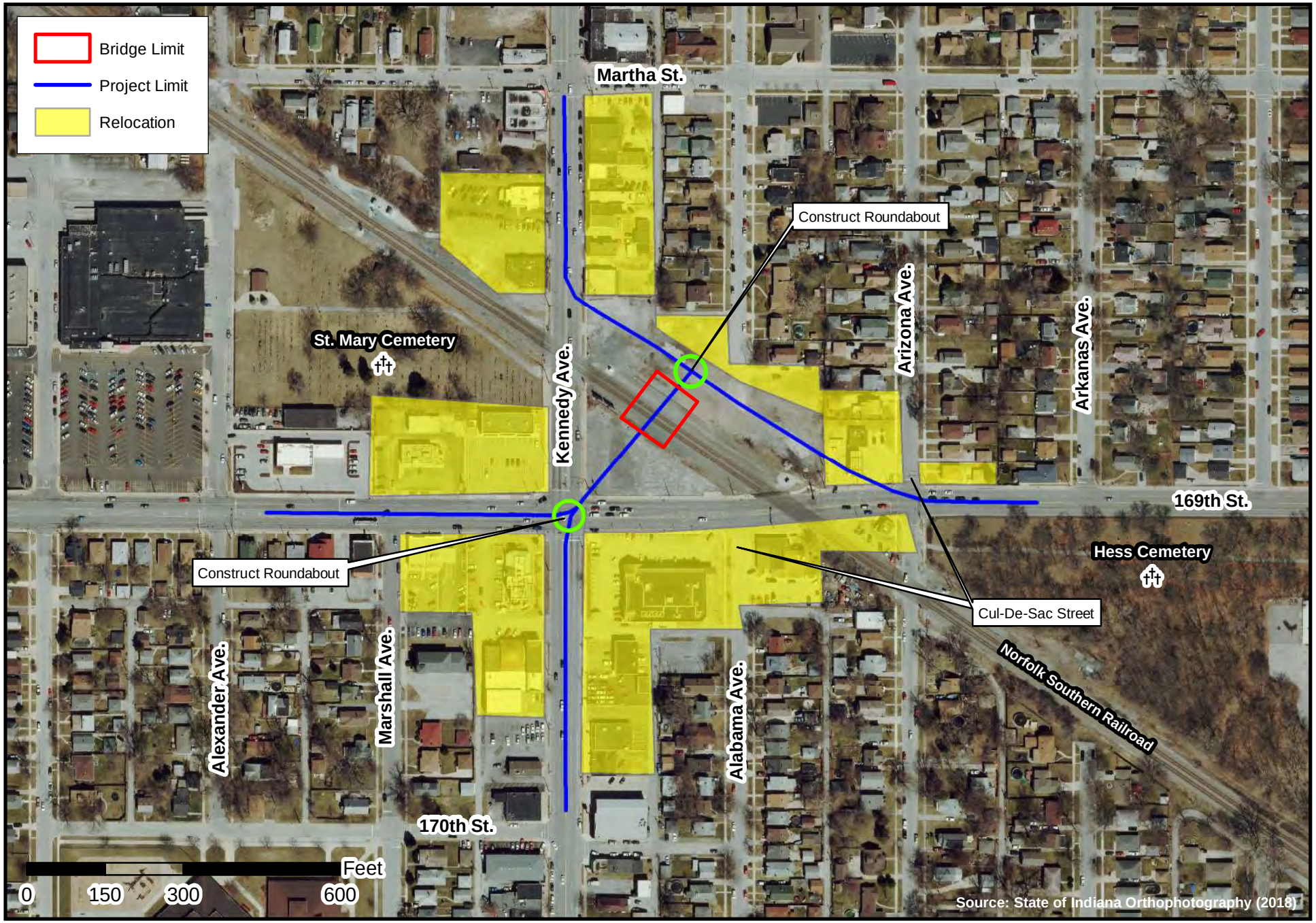
Crawford, Murphy & Tilly



Kennedy Avenue Bridge over Norfolk Southern Railroad

Project Limits and Relocations

CMT
Crawford, Murphy & Tilly



Roundabouts and Bridge over Norfolk Southern Railroad

Project Limits and Relocations

CMT
Crawford, Murphy & Tilly

HAMMOND FIRE DEPARTMENT

FIRE DEPARTMENT STUDY

Prepared for:
City of Hammond, Indiana + Hammond Fire Department

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

Table of **CONTENTS**


La Salle
HAMMOND

Acknowledgments

Shive-Hattery would like to express gratitude to everyone who played a role in making this study possible. We would like to specifically thank the City of Hammond, Hammond Board of Public Works and Safety, and the Hammond Fire Department (Mayor Thomas McDermott, Jr., Dean Button, and Chief Jeffery Smith), the City of Hammond's Planning and Development Department (Becky McKinley) and the Hammond Regional Dispatch Center. Our team appreciates the information and input through every stage of this analysis.

About Shive-Hattery

Shive-Hattery, Inc. is a Midwest-based, 426-person, planning, architecture, engineering, and interiors firm with roots going back to 1895. We are licensed in 45 states, with professionally registered architects and engineers in each state.

Our collaborative approach to programming, planning, and design results in imaginative solutions, based on each client's unique vision and goals. By creating spaces that reinforce their existing culture, process, and brand, we can translate objectives and aspirations into sustainable environments for working, learning, healing, and playing—and are catalysts for desired change.

We believe unparalleled service has given us the opportunity to practice our passion for creative design. We combine our creativity with an absolute commitment to deliver on our promises. We have a reputation for collaboration, availability, and responsiveness with owners, program managers and contractors based on delivering the best value to the owner. We also have a reputation for thorough, well-detailed construction documents, minimizing costly changes.

Introduction

Goals of Study

The Hammond Fire Department initiated this plan to determine and evaluate the efficiencies and deficiencies of their current fire department. With anticipated growth and changes occurring throughout the Fire Department, this study's purpose is to develop an overall understanding of the current coverage of the department and areas of opportunity for future growth.

The fire department's goal is to strive toward the National Fire Protection Agency's (NFPA) guideline for travel time of 4 minutes or less for 90 percent of fire and medical emergency incidents. This is defined as the time between when fire/medical units start in route to an incident and when they arrive at the scene.

It should be noted that one of the study's goal was to determine the optimal locations for future stations before substantial investments are made. The report illustrates the current proposed future locations and will be used as a starting point when evaluating alternate sites. Any recommendations on moving stations would only occur after further analysis, community dialogue and engagement, as well as the identification of specific, receiving sites.

- Uphold the Hammond Fire Department's mission to protect the lives and property of the citizens of Hammond by delivering excellent fire and rescue services
- Evaluating the Fire Department's compliance with NFPA 1710 standards
- Provide effective fire and rescue services to all parts of the City of Hammond and position the city to continue the same or greater level of service in the future

Method of Analysis

This report utilizes Geographic Information System (GIS) provided by the City of Hammond Planning and Development Department, run records provided by the Hammond Regional Dispatch Center, and public GIS data provided by the Environmental Systems Research Institute (ESRI).

To process and analyze the notable amount of GIS data of Hammond, the team has used ArcMap and ArcGIS Online – two GIS analysis programs that allow the team to visualize and analyze the GIS data.

In addition to tangible data provided by the city, the team also had conversations with representatives of the city for a qualitative perspective. Conversations occurred with drivers of the Hammond Fire Department to gain a better understanding of the intangible components of Fire Department travel conditions.

Fire Emergency Services Summary

NFPA Standards

An essential part of analyzing a fire department's fire station performance is comparing its response experience and protocols against established national response standards. There are several ways to make such comparisons to identify a fire department's strengths and weaknesses.

For evaluating service performance, a fire department may use the National Fire Protection Association's Standard 1710, Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments. NFPA 1710 clearly defines the standard level of resources required and time frames for initial and full responses for successful mitigation of emergencies, including fires, emergency medical calls, and other emergencies. For establishing response readiness and safety, a fire chief may use NFPA 1500, Standard on Fire Department Occupational Safety and Health Program. This standard identifies the minimum requirements for training, equipment, apparatus, physical fitness, and other factors that are required to ensure that firefighters can safely respond and mitigate emergencies. NFPA establishes and periodically revises consensus standards of all aspects of fire department operations. In addition to these two, there are standards on fire prevention, fire protection systems, personal protective equipment (PPE), apparatus training, building construction, and others. NFPA sets out criteria for effective response to all types of emergencies. Response time is defined as the sum of:

1. **Call processing time**, the time needed for a 911 call to be received and the information [processed and dispatched to the nearest available fire companies. Sixty seconds are allowed for processing.

2. **Turnout Time**, the time required by the firefighters to receive the call information, get on the truck, and start to move. Eighty seconds are allowed for standard turnout time.

3. **Travel Time**, the time required to respond form the fire station to the emergency location. Four minutes are allowed for travel time.

In summary, the first responding fire company is allowed up to six minutes to respond to an emergency, regardless of the type of call. Many emergencies require only one fire company for mitigation; most medical emergencies fall into this category. However, structure fires and other emergencies require responses of more than one fire company. These emergencies require response from an effecting fighting forces (EFF).

NFPA 1710 defines an effective fighting force as the number of firefighters and fire apparatus with equipment required to mitigate a fire or another emergency within a survivable time frame. Flashover is the point where a fire engulfs a room and generally occurs six to eight minutes after ignition. After flashover, survivability drops steeply. Therefore, NFPA 1710 requires that the effective fighting force be assembled within eight minutes after receipt of the alarm.

An effective fighting force consists of fifteen to seventeen firefighters and officers, plus their equipment. If an aerial is needed, seventeen firefighters are required, otherwise, fifteen. Years of experience has shown that these numbers are needed to accomplish the tasks required for successful fire suppression in a survivable time frame. If the fire companies are staffed at four (one officer and three firefighters), there engines, a ladder, and a command officer comprise the effective fighting force. If the fire companies are staffed at four (one officer and three firefighters), three engines, a ladder, and a command officer comprise the effective fighting force. If The fire companies are staffed at three (one officer and two firefighters), the EFF will be comprised of four engines, a ladder, and a command officer.

Fire Emergency Services Summary

ISO Public Protection Classification

The Public Protection Classification (PPC) program summary administered by the Insurance Services Office (ISO) is the oldest and perhaps the most familiar to city managers and administrators. Using the PPC measures, ISO evaluates a community's public fire capability and assigns a protection class rating from 1 to 10. Class 1 represents exemplary fire protection; a Class 10 rating indicates that a community's fire suppression program does not meet the ISO minimum criteria. ISO evaluates all resources required for fire suppression to establish a rating, including available water supply, call taking and dispatching resources and protocols, response unit staffing, firefighter training, response capacity and coverage, and other factors. A key element of coverage evaluation is the location of engine and ladder apparatus in relation to the development within the jurisdiction. The PPC was developed by the insurance industry and is used to set fire insurance premiums. It does not evaluate MS capabilities or other emergency services a modern fire department routinely provides.

For full credit in the PPC program, a fire department must provide an engine within 1.5 miles and a ladder within 2.5 miles of each property in the jurisdiction. Staffing for this level of service delivery is prohibitively expensive and, outside dense urban cores of large cities, probably unnecessary. And astute fire chief will not base performance standards on ISO alone but will use more direct methods of community risks and resources. ISO re-evaluates every 10 years or so.

Fire departments are evaluated on about 75 different areas that fall into three general categories, weighted accordingly; fire department (50%), water supply (40%), and emergency communications (10%). The fire department includes things such as the number of stations, number, type, and age of apparatus, staffing levels, training, hose and equipment, vehicle maintenance, etc. Water supply evaluates water flow, hydrant locations and condition, operation and maintenance of the water systems. The final category, emergency communications, evaluates the department's dispatchers and dispatch center operations. One additional category (considered "extra points") is Community Risk Reduction, which encompasses prevention programs such as code enforcement, plan review, business inspections, and public education programs.

The Commission on Fire Accreditation International (CFAI) provides a self-assessment and evaluation model that enables a fire department to evaluate past, current, and potential future service levels and performance and compare them to fire industry best practices so that a department may:

1. Determine community risk and safety needs and develop community-specific standards of cover

2. Evaluate the performance of the department in relation to the standard of cover

3. Establish a methodology for achieving continuous organizational improvement in relation to the standard of cover.

CFAI provides the tools for a fire department to assess its performance against national standards or locally adopted performance goals. The program is voluntary and does not set standards. A successful process leads to accreditation; compliance reports must be made annually and the assessment process is repeated every five years.

A progressive fire department will be familiar with these and use them to establish response goals and performance measures appropriate for the community and the fire department in a standards of cover document.

Insurance Services Office (ISO) | PPC Criteria

To help insurance companies determine appropriate fire insurance premiums, the ISO provides a Public Protection Classification (PPC) program. ISO collects information from municipalities to understand their fire protection efforts – the ISO utilizes a "Fire Suppression Rating Schedule (FSRS)" to assign a rating to a municipality based on certain criteria. The following information is directly from the Insurance Services Office (isomitigation.com):

Emergency Communications (10 points):

How well the fire department receives and dispatches fire alarms

- Emergency reporting system
- Communications center, including number of telecommunicators
- Computer-Aided Dispatch (CAD) facilities
- Dispatch circuits and how the center notifies firefighters about location of emergency

Fire Department (50 points):

Distribution of Fire Companies, regular testing/maintenance of water pumps, and inventory of engine/ladder company's equipment according to NFPA 1901

- Type and extent of training provided to fire company personnel
- Number of people who participate in training
- Firefighter response to emergencies
- Maintenance and testing of the fire department's equipment

Water Supply (40 points):

Sufficient water supply for fire suppression beyond daily maximum consumption. ISO surveys all components of the water supply system, and reviews fire hydrant inspections and frequency of flow testing. ISO counts the number of fire hydrants that are no more than 1,000 feet from the representative locations.

Community Risk Reduction (5.5 points):

"Extra points" that allows recognition for communities that employ effective fire prevention practices to proactively reduce fire severity:

- Fire Prevention
- Fire Safety Education
- Fire Investigation

Mapping Analysis

The following section contains maps visualizing various layers of data, including:

- Existing Stations & Engine Areas
- 2020 Census Population Data (by block)
- 2018, 2019, 2020 Historical Dispatch Data
- ESRI Average Traffic Data

What is meant by "coverage"

NFPA 1710
4-minute travel time from station

ISO PPC Classification
1.5-mile drive radius - Engine Companies
2.5-mile drive radius - Ladder Companies

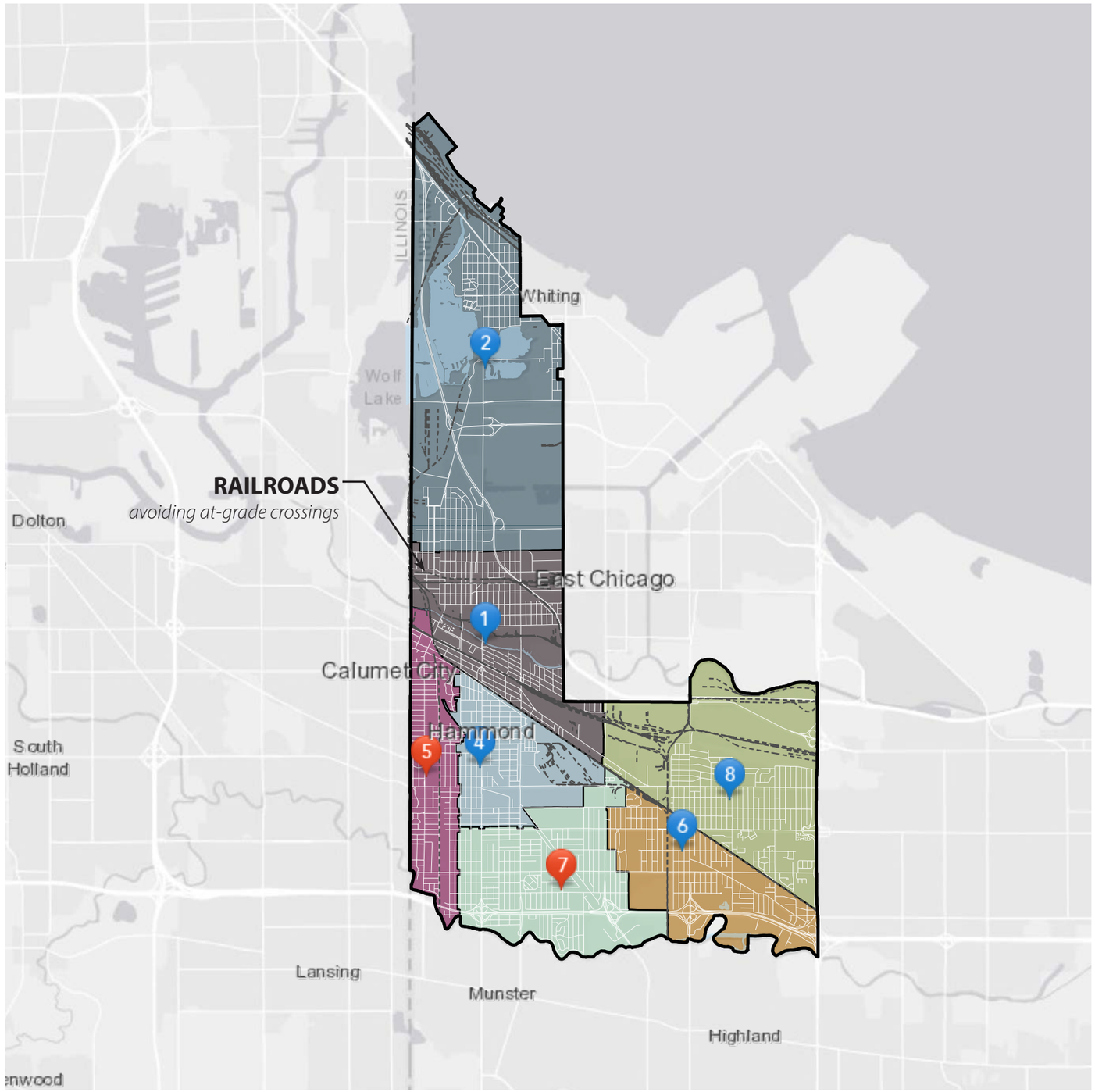
Existing Station Coverage Conditions

Station Locations & Engine Areas

LEGEND

Engine Area
- 1
- 2
- 4
- 5
- 6
- 7
- 8

5&7 to be combined in future



Summary:

Map depicts Engine Areas and existing Fire Station locations.

Existing Station Coverage Conditions

Dispatch Data, ALL CALLS (2018, 2019, 2020)

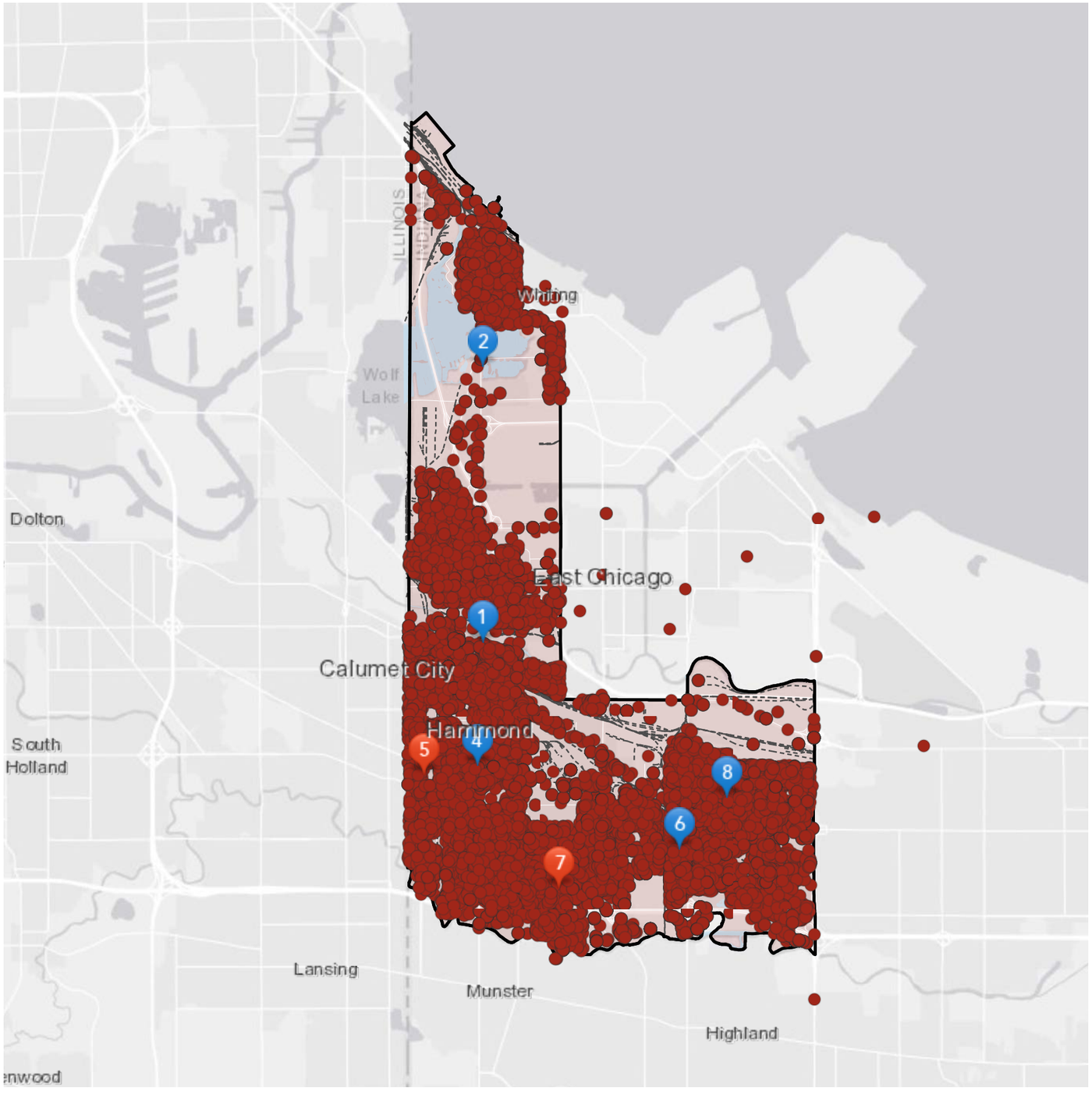
The notes to the right indicate all calls received by HAFD from 2018-2020.

Call Summary:

2018:	*12,561*
2019:	*12,657*
2020:	*12,921*
Total:	***38,139***

LEGEND

- Individual Call (Fire or EMS)



Summary:

Map depicts individual call data (Fire and EMS) for 2018-2020.

Existing Station Coverage Conditions

Dispatch Data, Hot Spots

The notes to the right indicate all calls received by HAFD from 2018-2020.

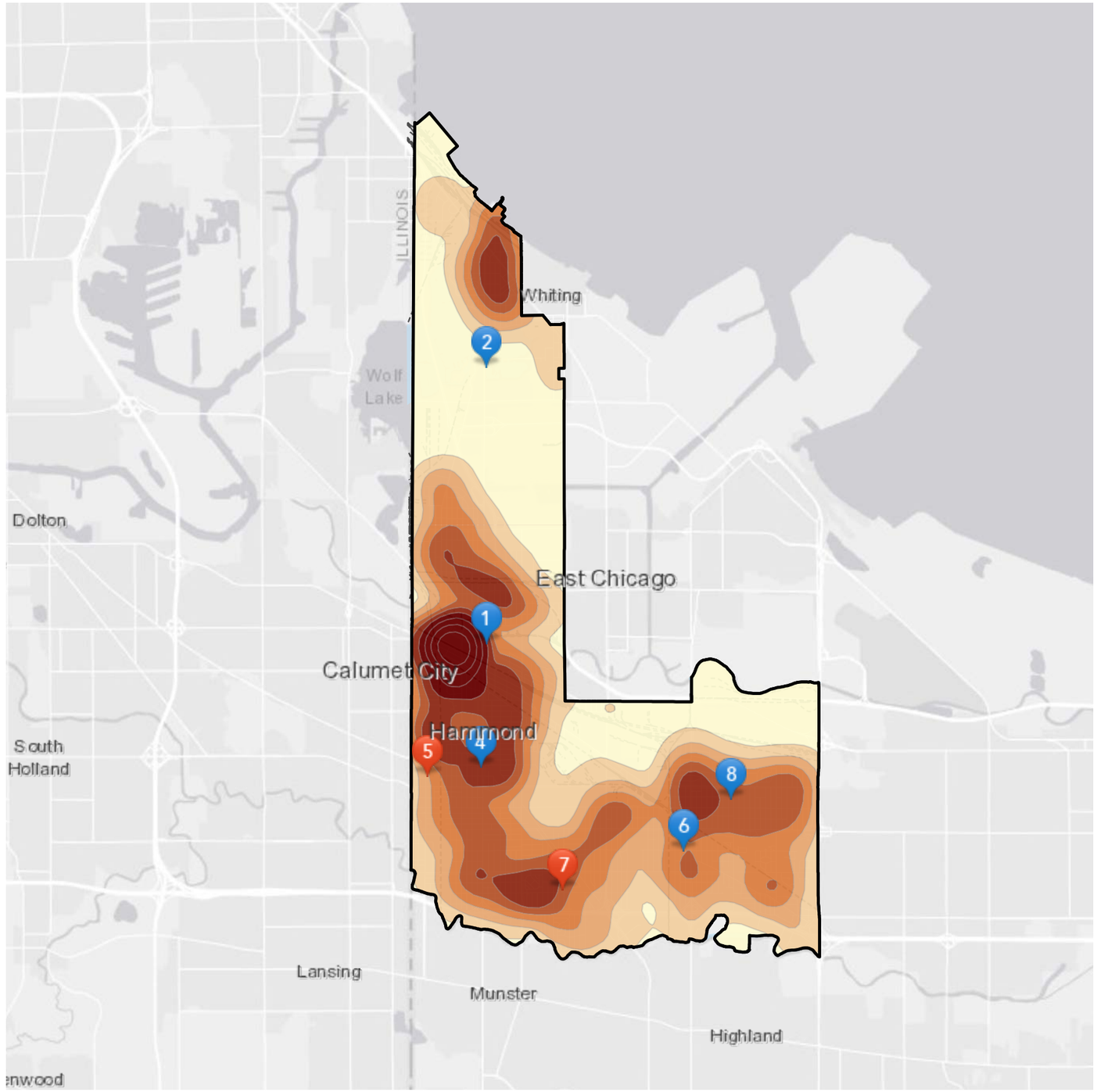
Call Summary:

2018:	*12,561*
2019:	*12,657*
2020:	*12,921*
Total:	***38,139***

LEGEND

Most Density Per Sq. Mi.

Least Density Per Sq. Mi.



Summary:

Map depicts general call density from 2018-2020 dispatch data. Darkest regions are highest density of calls, while lightest areas depict minimum call density.

Existing Station Coverage Conditions

Population Data

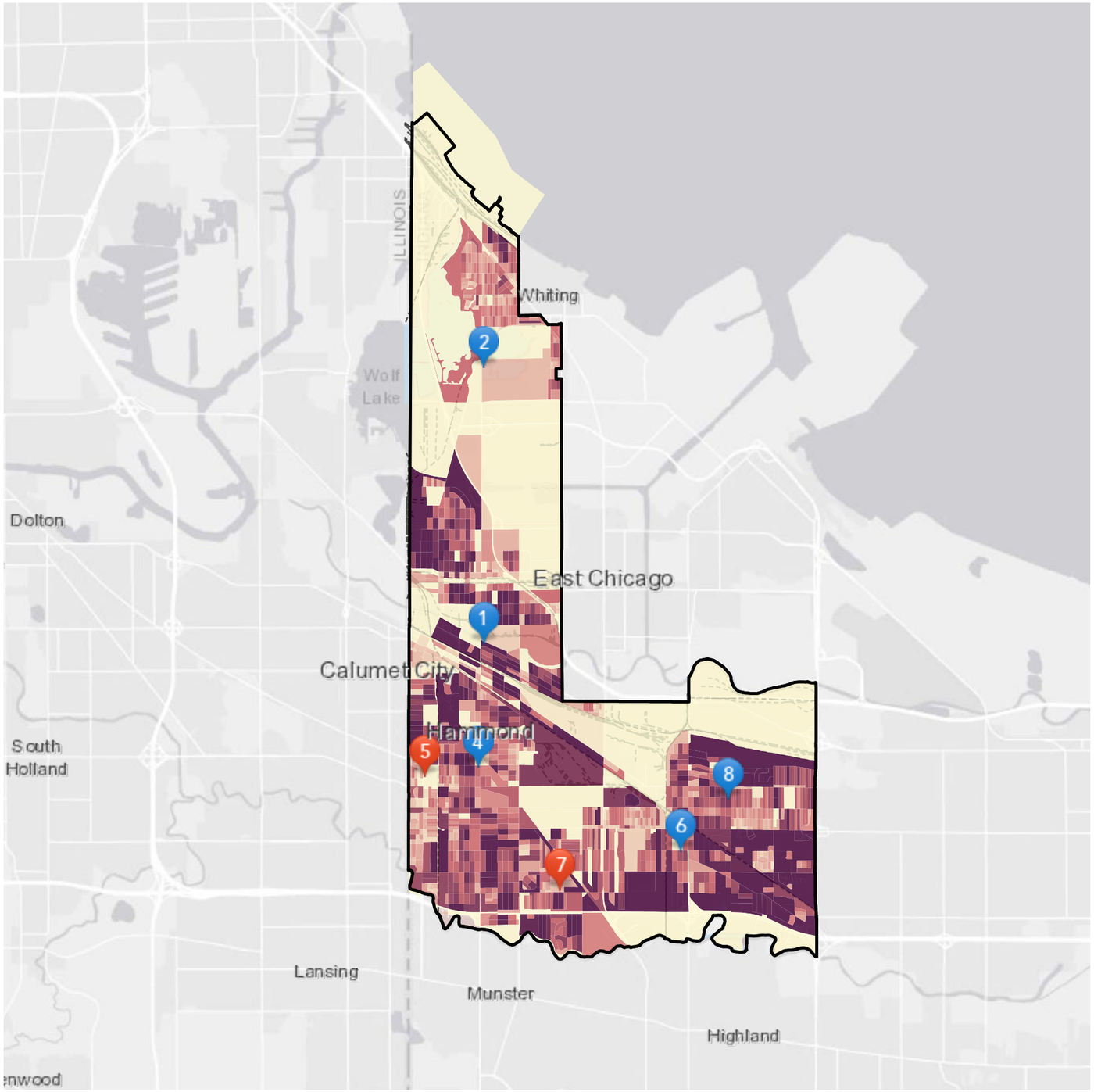
2020 US Census Bureau Data

Total Population: Hammond, IN: 77,838

LEGEND

>95 per block

0 per block



Summary:

Map depicts general population density per block, per the 2020 U.S. Census Bureau Data

Existing Station Coverage Conditions

Population Data

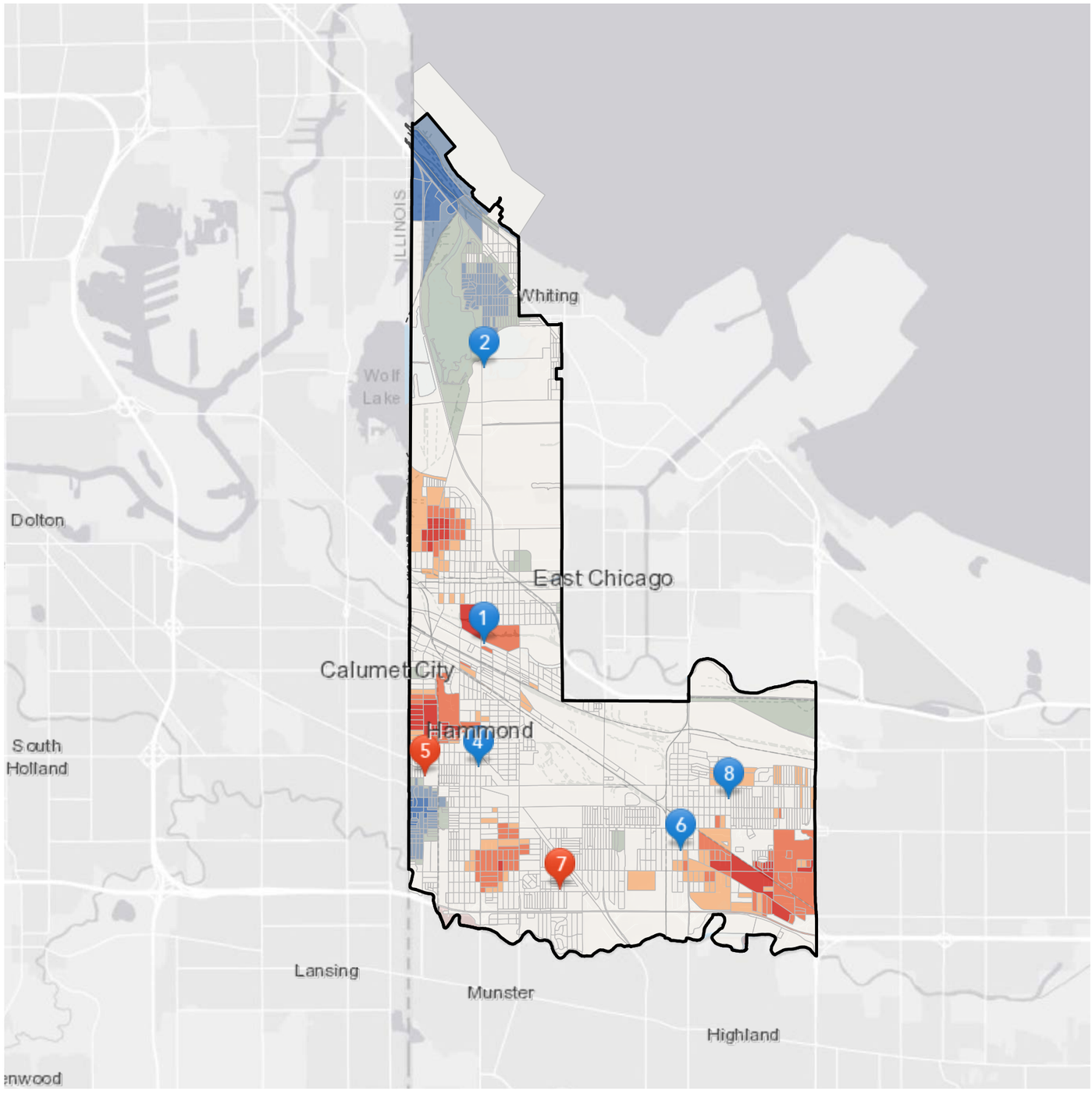
2020 US Census Bureau Data

Total Population: Hammond, IN: 77,838

LEGEND

Hot Spot
- Most Density
-
-
- Not Significant

Cold Spot
-
-
- Least Density



Summary:

Map depicts general hot and cold spots of population throughout Hammond.

Existing Station Coverage Conditions

Population Data - Hot Spot Analysis

Total Hammond Population: 77,838

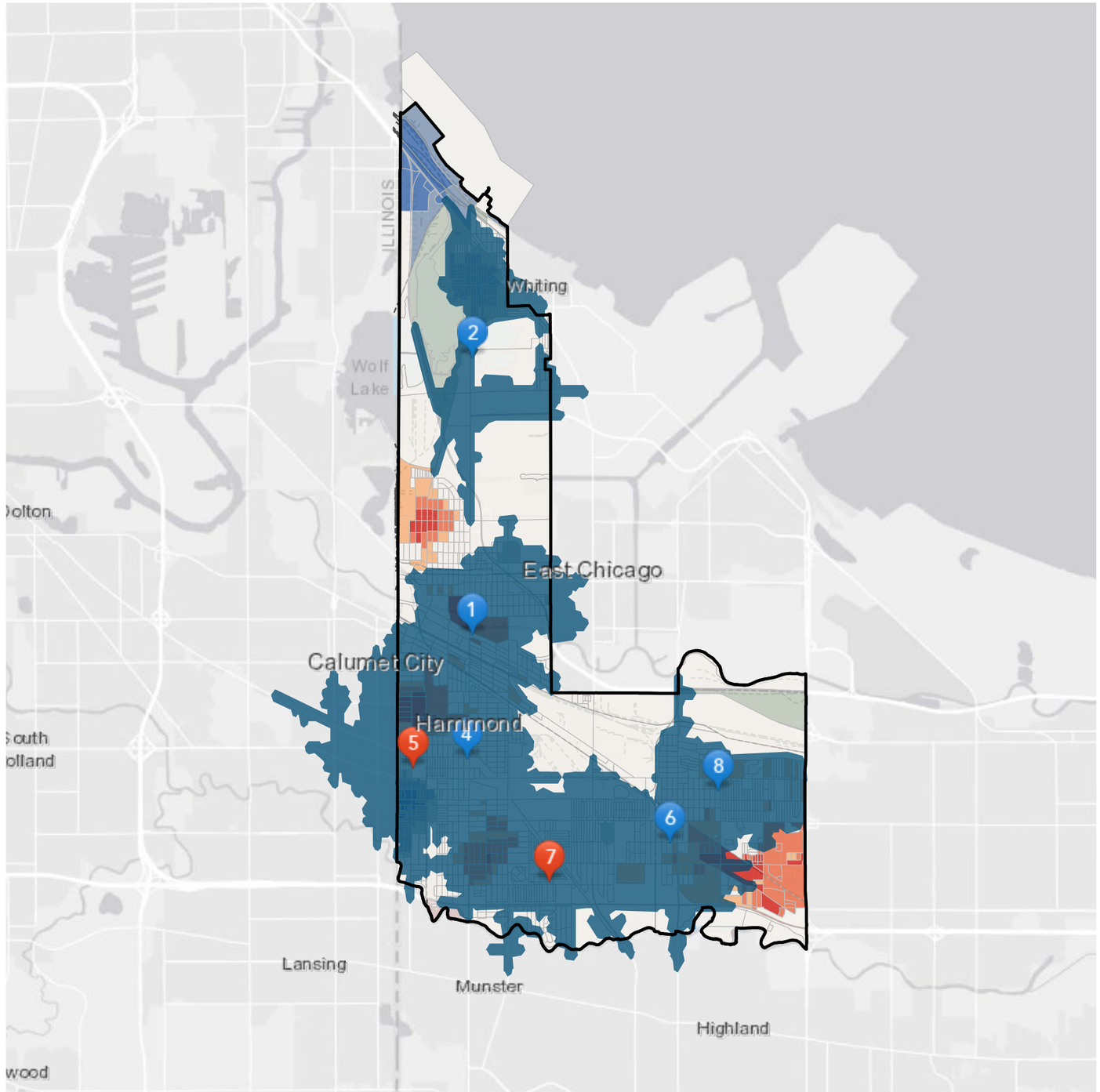
Population Outside of Recommended Radius: ***16,984 (21.8%)***

LEGEND

Hot Spot
- Most Density
- Not Significant

Cold Spot
- Least Density

4-minute drive radius*



Summary:

Map depicts general hot and cold spots of population throughout Hammond.

**Assuming standard traffic and driving conditions.*

Existing Station Coverage Conditions

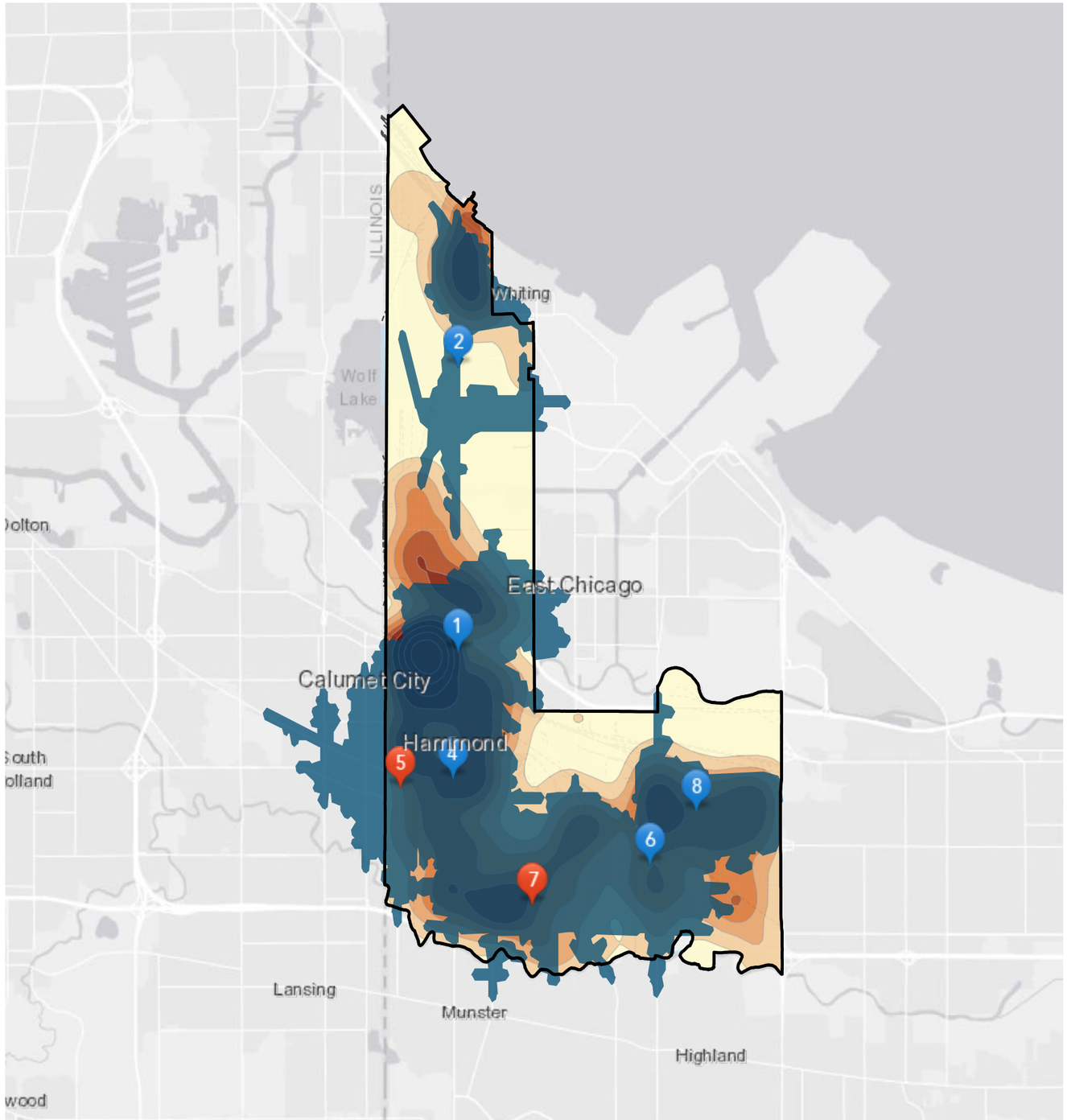
Dispatch Data - Hot Spot Analysis

Average Annual Calls (Fire & EMS): 12,789

Average Annual Calls Outside of Recommended Radius: ***1,915 (15%)***

LEGEND

- Most Density Per Sq. Mi.
- Least Density Per Sq. Mi.
- 4-minute drive radius



Summary:

Map depicts general call density from 2018-2020 dispatch data. Darkest regions are highest density of calls, while lightest areas depict minimum call density.

Dispatch Data

Average Response Times

FIRE STATION	Average Annual Calls Per Station	*In-Zone Travel*		*All-Zone Travel*
		Average Response Time for Calls in Same Engine Area	% of Travel Time > 4-min	Average Response Time for ALL Calls (including outside engine areas)
1	**2,430** *19% of total HAFD calls*	**3:15**	**37%**	**5:01**
2	**1,860** *15% of total HAFD calls*	**3:41**	**35%**	**5:05**
4	**1,503** *12% of total HAFD calls*	**2:48**	**14%**	**4:12**
5	**1,632** *13% of total HAFD calls*	**3:10**	**N/A**	**N/A**
6	**1,239** *10% of total HAFD calls*	**2:50**	**34%**	**3:01**
7	**2,118** *17% of total HAFD calls*	**2:57**	**17%**	**4:35**
8	**1,931** *15% of total HAFD calls*	**4:02**	**23%**	**4:17**

Summary:

"All-Zone" includes units from ALL engine areas. "In-Zone" only includes units within that Engine Area.

Existing Station Coverage Conditions

4-Minute Travel Time Coverage*

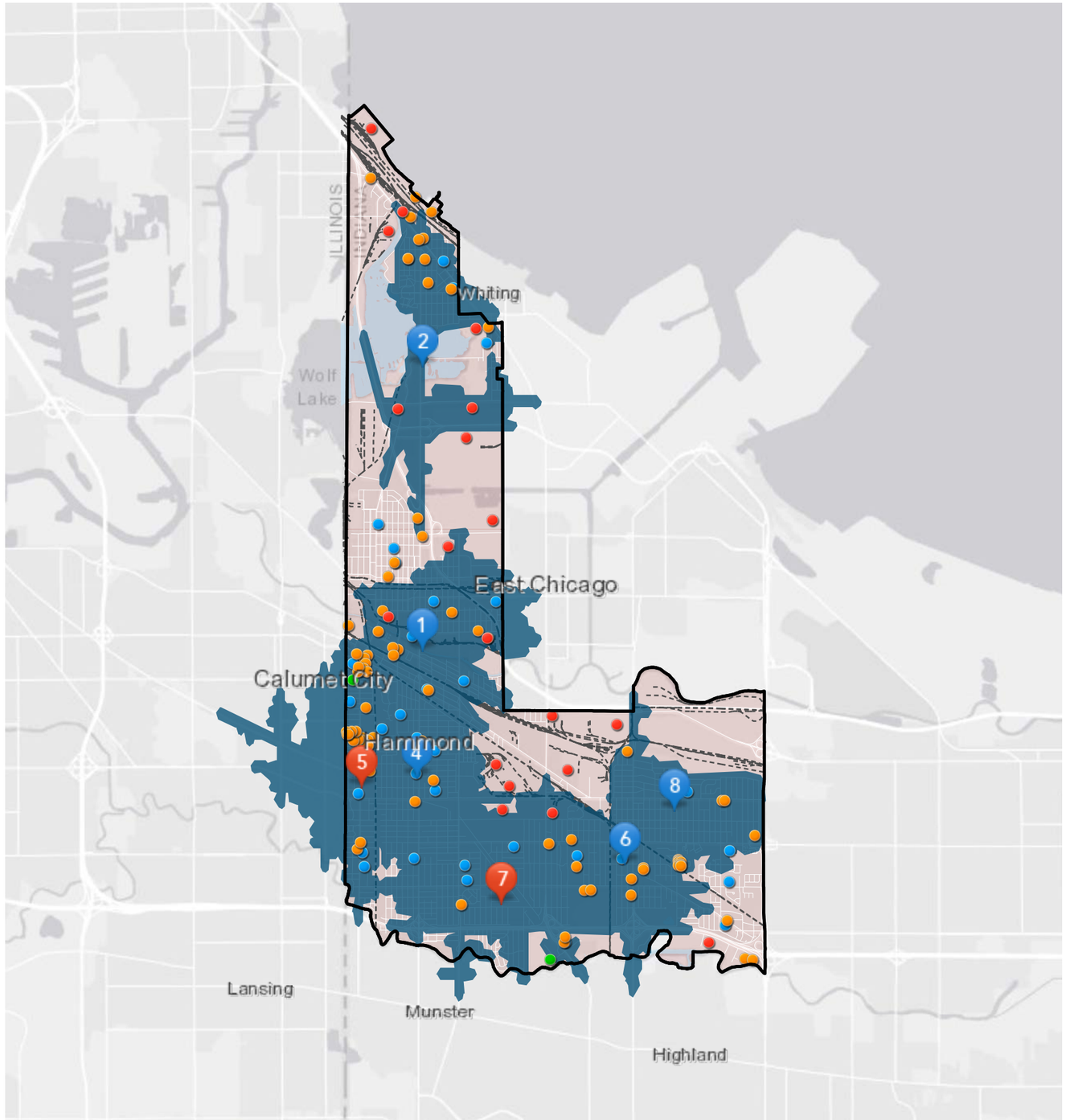
Hammond Size: *23.88 sq. mi*
Not covered: ***9.66 sq. mi. (40.5%)***

Population Outside of Recommended Radius: ***16,984 (21.8%)***

Average Annual Calls Outside of Recommended Radius: ***1,915 (15%)***

LEGEND

- 3-story building
  9 out of 84 not covered
  10.7%
- School
  6 out of 34 not covered
  17.6%
- Industrial
  13 out of 19 not covered
  68.4%
- Hospital
  100% covered
- 4-minute drive radius*
- Not covered in 4 - minute drive radius



Summary:

Several schools and majority of industrial properties are outside of recommended 4-minute travel radius.

**Assuming standard traffic and driving conditions.*

Future Station Analysis

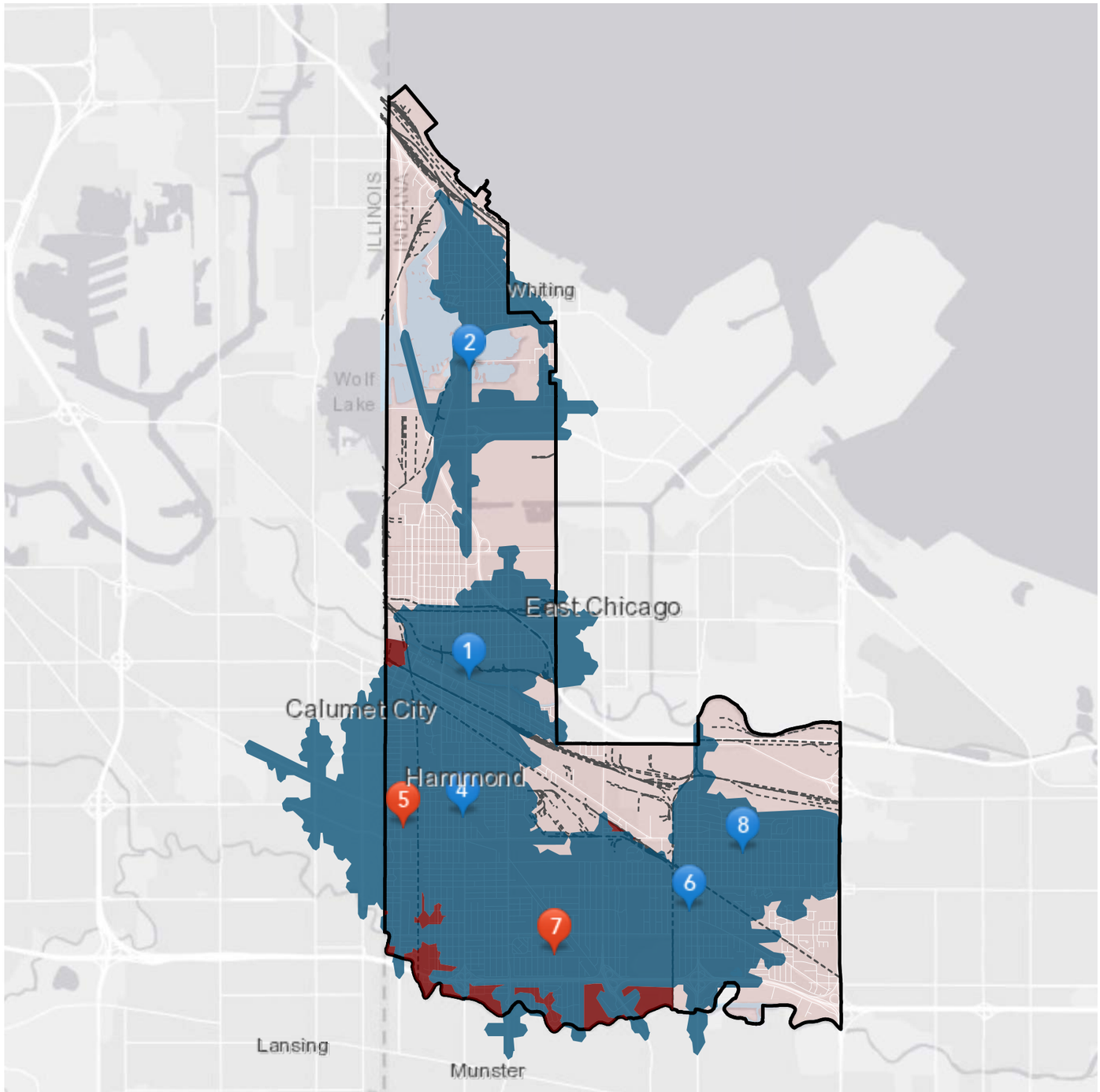
Combined Stations 5 & 7

Engine Area 5:
11.9% area not covered
0.21 sq. mi not covered
13.4% of population not covered
1,468 population not covered
4.2% annual calls not covered (average)
221 calls not covered

Engine Area 7:
11.6% area not covered
0.37 sq. mi not covered
14.5% of population not covered
2,368 population not covered
7.9% annual calls not covered (average)
504 calls not covered

LEGEND

- 5&7 to be combined in future
- 4-minute recommended drive radius*
- Engine Areas 5 & 7 - not currently covered



Summary:
Analyzing current coverage of Stations 5 & 7 to understand impacts of future station

**Assuming standard traffic and driving conditions.*