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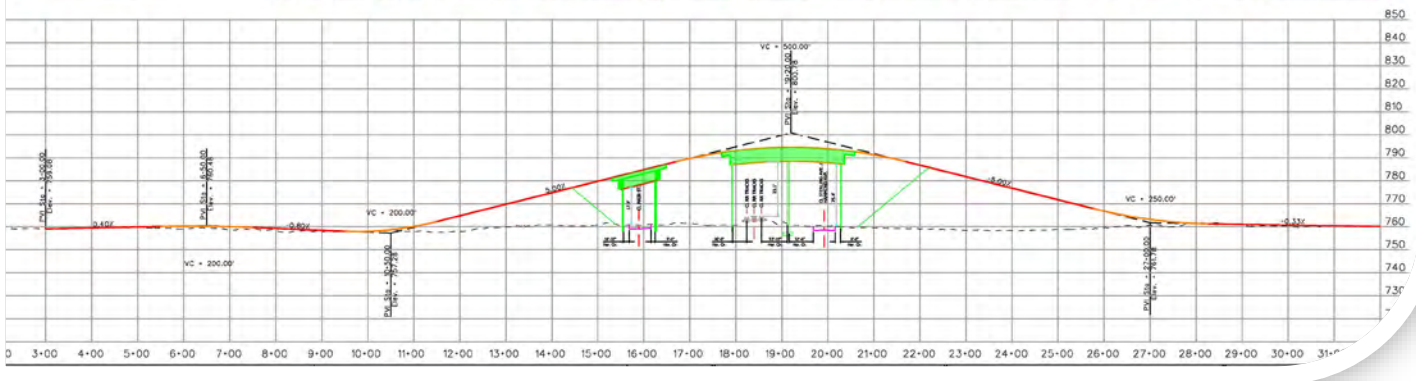
Phase II ESA Report

Phase II Environmental Site Assessment Report

Hively Avenue Overpass Project

East Hively Avenue (SR 18) Over Main Street & Norfolk Southern Railroad

Elkhart County, Indiana



November 7, 2022

Phase II Environmental Site Report - Hively Avenue Overpass Project
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ATTACHMENTS *Attachments available upon request

- Attachment 1 Boring Logs
- Attachment 2 Laboratory Data Reports
- Attachment 3 Detailed Analytical Results and Comparison Tables

1.0 INTRODUCTION

At the request of the Indiana Department of Transportation (INDOT) and the City of Elkhart (Elkhart), Michael Baker International (Baker) conducted the following Phase II Environmental Site Assessment (Phase II ESA) in support of the proposed Hively Avenue Overpass Project, East Hively Avenue (SR 18) Over Main Street and Norfolk Southern Railroad (Project) in the City of Elkhart, Elkhart County Indiana (Figure 1-1).

The Phase II ESA was performed for the confirmation/refutation of potential sources of contamination at thirteen (13) sites identified in the "*Modified Phase I ESA Report "Hively Avenue Overpass Project, DES #1801933"*" (Phase I ESA; January 28, 2022). The Phase II ESA was conducted on parcels which cannot be avoided per Stage 1 plans with either current use RECs or historic use HRECs and pose a concern to impact worker safety and/or proper handling/disposal of waste (i.e., soil and/or water) generated as part of Project construction excavation activities.

The Phase II ESA was conducted in accordance with "*Phase II Environmental Site Assessment Investigation Scope of Work Proposal*" (Phase II SOW; August 4, 2022) developed in consultation with INDOT Site Assessment & Management (SAM) and the "*Site Assessment & Management Manual*" (October 2021).

1.1 Project Description

The Hively Avenue Overpass Project, Des 1801933, will eliminate the existing Norfolk Southern Railroad at-grade-crossing (41.659462°N and -85.946735°W) at Hively Avenue by creating a new overpass (grade separation bridge) which will carry a realigned East Hively Avenue over South Main Street, the Norfolk Southern Railroad, and Sterling/Hammond Avenues (Figure 1-2).

- The proposed project is part of a Local TRAX rail overpass program grant with INDOT and the City of Elkhart; Local TRAX is a partnership with INDOT, local communities, businesses, industry, and railroads to improve the quality of life for residents through large scale rail related transportation projects.
- The Project is located on the southeast side of the City of Elkhart and Elkhart County, Indiana and spans approximately 0.64 mile of East Hively Avenue from Sanders Avenue to Clayton Avenue and 0.24-mile of Warren Street to the intersection with Hammond Avenue, in the City of Elkhart, Elkhart County Indiana. Pavement improvements will be added to the local streets, and drive approaches will be reconstructed.

Sidewalks will be added on the north and south sides of realigned East Hively Avenue between Burr Oak and Roosevelt Avenues; a multi-use path will be added on the north side of realigned East Hively Avenue between Roosevelt and Warren Avenues and connect with an existing path on the westside of Hammond Avenue. Project plans include INDOT best management practices (BMPs), utility relocations, and stormwater/drainage treatments; edge of pavement curb and gutters (EoP C&G), new access manhole/catch (M/C) basins, dry retention ditches, and upgraded connection/capacity to existing City of Elkhart stormwater infrastructure (typically reinforced concrete pipes; RCP).

Figure 1-1 Regional Map and Project Study Area

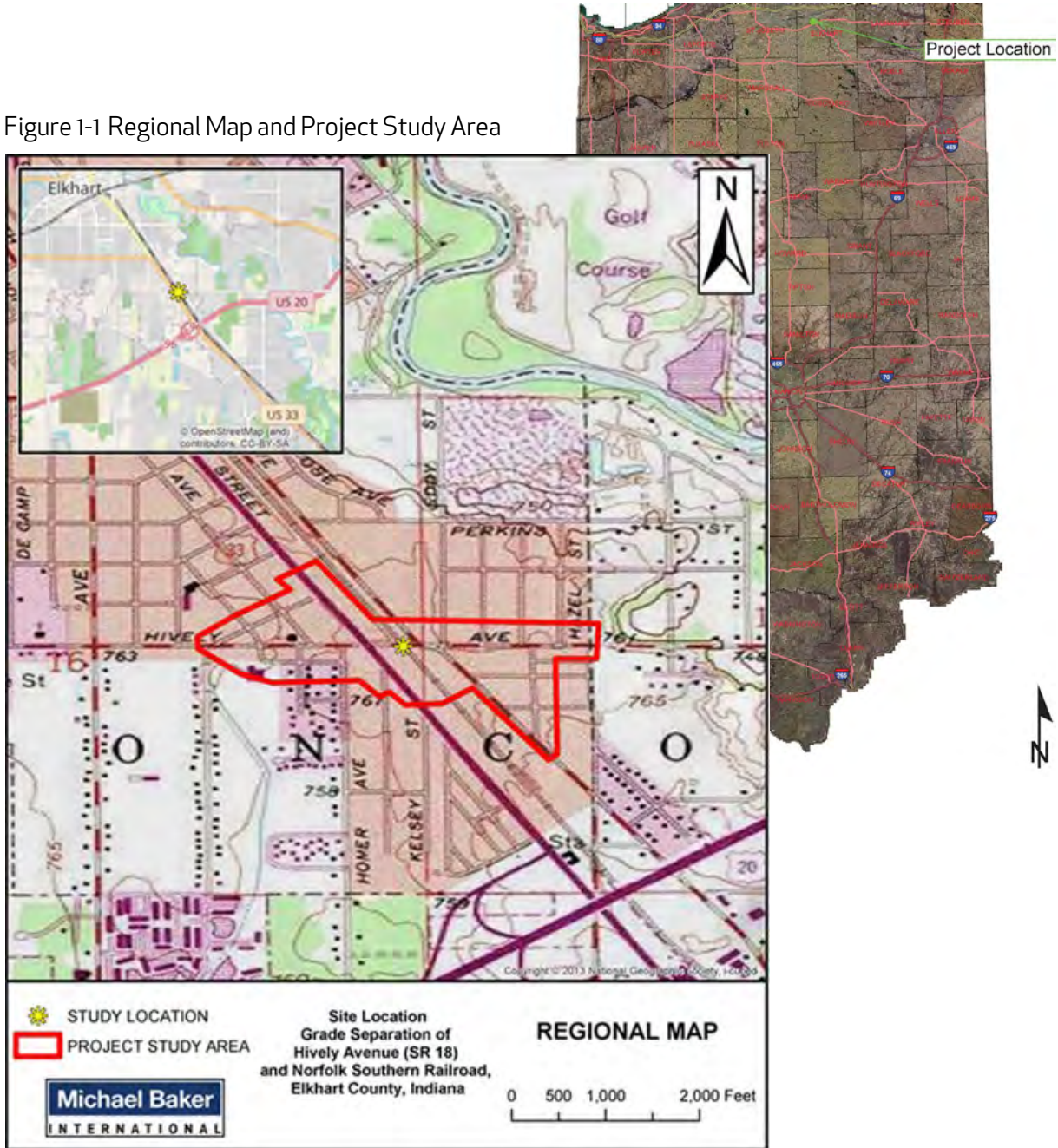


Figure 1-2 Alternate 3A Realign Hively to South (Connection Roadway to North) - Plan & Profile



2.0 PHASE II ESA - SCOPE OF WORK

The Phase II SOW consisted of advancing nineteen (19) direct-push soil borings (Figure 2-1) to a maximum depth of 10 feet below ground surface (ft. bgs), field screening, and collection of one to two (1-2) soil samples for analysis of one or more site-specific parameters including: volatile organic compounds (VOCs; USEPA SW-846 Method 5035a), semi-volatile organic compounds (SVOCs; 8270e), polychlorinated biphenyls (PCBs; 8082), lead (total & Toxicity Characteristic Leaching Procedure [TCLP]; 6010/d), Resource Conservation and Recovery Act metals (RCRA: arsenic^{As}, barium, cadmium, chromium^{Cr}, lead, mercury, selenium, silver; 6010/7471).

Environmental sampling at "Acquire Entire Property" sites (21, 25, and 64) in support of potential land acquisition and/or reuse evaluations of Phase I ESA identified historic recognized environmental conditions (RECs) are addressed independently from the project construction worker and material handling sampling detailed on Table 2-1.

As – Representative local background arsenic locations (+As) for evaluation of RCRA metal results.

Cr – Low level hexavalent Chromium was analyzed separately for comparison to IDEM RISC migration to groundwater (MTG) by ENVision Laboratories, Inc.

Figure 2-1 Phase II Sampling Locations

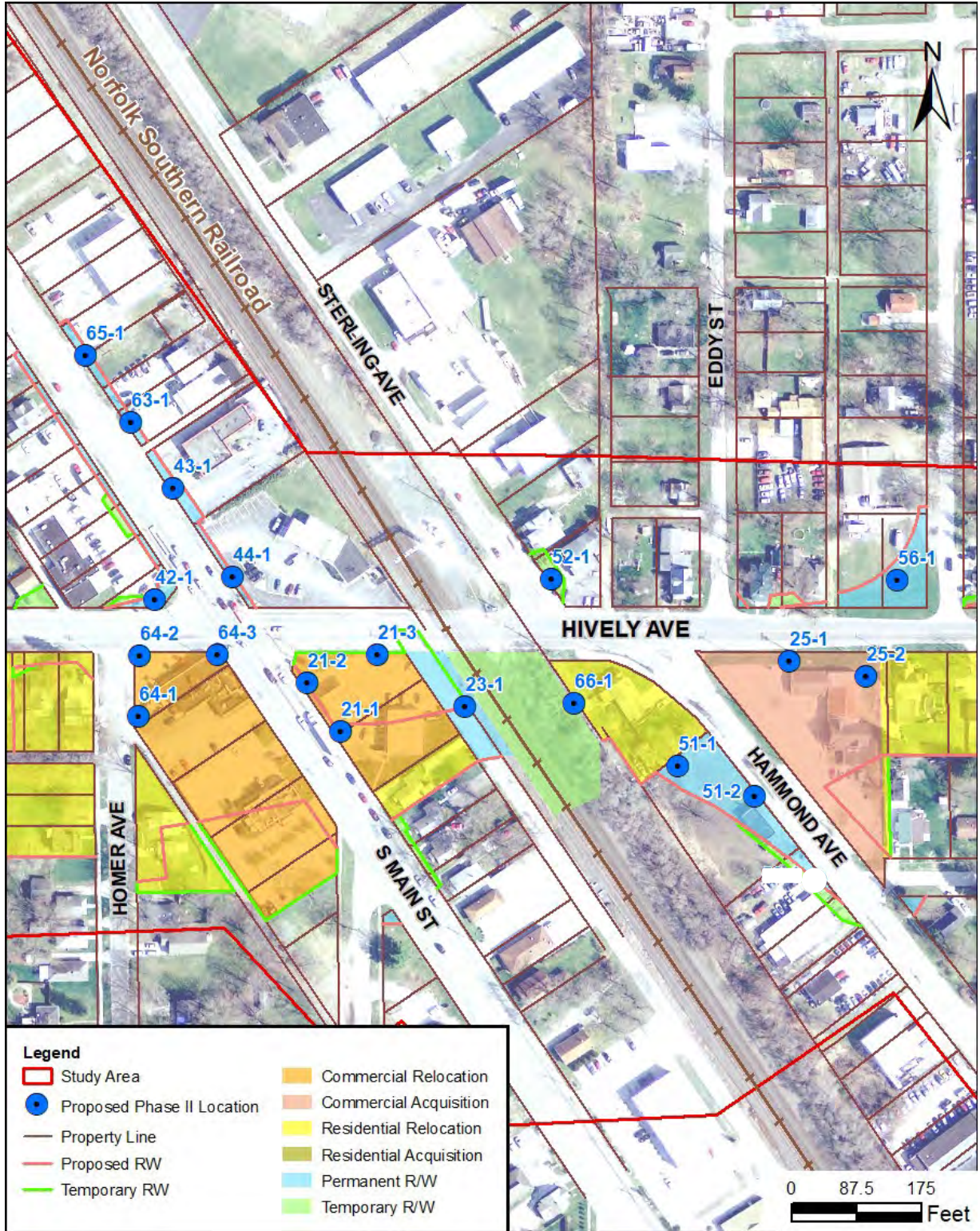


Table 2-1 Phase II ESA Site, Boring, Sample, and Investigation Rationale Summary

Boring	Sample	Analytes	Rationale
7-Eleven & Mobile Gas Station/former gas stn. 2700 South Main Street Acquire Entire Property *			
21-1	S-1 S-2	VOCs, SVOCs, Lead (+TCLP Pb)	Potential releases/residual petroleum (former/current USTs, used oil), solvents (former garage) located within/adjacent to ROW, excavation (0-2, 0-2+, 0-10 ft. bgs); Stormwater - BMPs, EoP C&G, M/C basins, and drainage to existing S. Main St./E. Hively Ave. RCPs (≤10-ft. bgs)
21-2	S-1	VOCs, SVOCs, Lead	
21-3	S-1	VOCs, SVOCs, Lead	
IN MI Power Co. & Norfolk Southern R/R South Main Street Partial/Linear Acquisition			
23-1	S-1 S-2	VOCs, SVOCs, PCBs, RCRA metals (+Cr ^{VI})	Potential releases/residual waste petroleum, PCBs and metals (R/R operations and stained soils) located within/adjacent to ROW excavation (0-2, 0-8 ft. bgs); Stormwater - BMPs, EoP C&G, M/C basins, and drainage to existing E. Hively Ave. RCP (≤10-ft. bgs)
Former Pine De Rosa Furniture Manufacturing 2700 Hammond Avenue Acquire Entire Property *			
25-1	S-1 S-2	VOCs, Lead (+As)	Potential releases/residual waste petroleum solvents and LBP (former lacquer, sealers, stains, dip-tank) located within/adjacent to ROW excavation (0-2, 0-10 ft. bgs); Stormwater - BMPs, EoP C&G, manhole/catch basins, above ground dry detention ditch (Warren St. to Hammond Ave.), M/C basins, and drainage to existing Hammond/E. Hively Aves. RCPs (≤11-ft. bgs) and trunkline along Eddy St. (≤12-ft. bgs)
25-2	S-1 S-2	VOCs, Lead	
El Rosal Market/former Palmer Hdw. & gas stn. 2693 South Main Street Partial/Linear Acquisition			
42-1	S-1 S-2	VOCs, SVOCs, Lead	Potential releases/residual petroleum (former USTs, used oil), solvents (former garage) located within/adjacent to ROW excavation (0-2, 0-10 ft. bgs); Stormwater - BMPs, EoP C&G, M/C basins, and drainage to existing Main St./E. Hively Ave. RCPs (≤10-ft. bgs)
Carwash Station/former Strom Brass Foundry 2680 South Main Street Partial/Linear Acquisition			
43-1	S-1 S-2	VOCs, SVOCs, PCBs, RCRA metals (+Cr ^{VI})	Potential releases/residual waste petroleum tar/creosote, coal/coke, and metals (former foundry) located within/adjacent to ROW excavation (0-2, 0-10 ft. bgs); Stormwater - BMPs, EoP C&G, M/C basins, and drainage to existing E. Hively Ave./S. Main St. RCPs (<10-ft. bgs)
Midas/former Strom Brass Foundry 2692 South Main Street Partial/Linear Acquisition			
44-1	S-1 S-2	VOCs, SVOCs, PCBs, RCRA metals (+Cr ^{VI})	Potential releases/residual waste petroleum tar/creosote, coal/coke, and metals (former foundry) located within/adjacent to ROW excavation (0-2, 0-10 ft. bgs); Stormwater - BMPs, EoP C&G, M/C basins, and drainage to existing Main St. RCP (<10-ft. bgs)
New commercial bld./former coal/salvage yards 2729 Hammond Avenue Partial/Linear Acquisition			
51-1	S-1 S-2	VOCs, SVOCs, RCRA metals (+Cr ^{VI})	Potential releases and residual petroleum (former/current USTs, used oil), solvents (former garage) located within/adjacent to ROW excavation (0-2, 0-10 ft. bgs); Stormwater - BMPs, EoP C&G, M/C basins, and drainage to existing Hammond Ave. RCP (≤11-ft. bgs)
51-2	S-1 S-2		

Boring	Sample	Analytes	Rationale
Marcos Auto Sales/former Weist/Wade's Service			Partial/Linear Acquisition
2644 Sterling Avenue			
52-1	S-1 S-2	VOCs, SVOCs, Lead	Potential releases/residual petroleum and lead (former USTs) solvents (former garage) located within/adjacent to ROW excavation (0-2, 0-10 ft. bgs); Stormwater – BMPs, EoP C&G, M/C basins, and drainage to existing Sterling Ave. RCP (≤10-ft. bgs)
Residential Lots/former auto repair			Partial/Linear Acquisition
2625 Lowell Avenue			
56-1	S-1 S-2	VOCs, SVOCs, Lead (+As)	Potential releases and residual petroleum (former/current USTs, used oil), solvents (former garage) located within/adjacent to ROW and excavation (0-2, 0-10 ft. bgs); Stormwater - BMPs, EoP C&G, M/C basins, and drainage to existing E. Hively Ave. RCPs (≤11-ft. bgs)
Eulloquis Kustom /former Superior Foundry			Partial/Linear Acquisition
2676 South Main Street			
63-1	S-1 S-2	VOCs, SVOCs, PCBs, RCRA metals (+Cr ^{VI} +TCLP Pb)	Potential releases/residual waste petroleum tar/creosote, coal/coke, and metals (former foundry) located within/adjacent to ROW and excavation (0-2, 0-10 ft. bgs); Stormwater - BMPs, EoP C&G, M/C basins, and drainage to existing S. Main St. RCP (<10-ft. bgs)
Elkhart Speedwash/former dry cleaner			Acquire Entire Property *
2701 South Main Street			
64-1	S-1 S-2	VOCs (+As)	Potential releases/residual waste petroleum tar/creosote, coal/coke, and metals (former foundry) located within/adjacent to ROW and excavation (0-2, 0-10 ft. bgs); Stormwater - BMPs, EoP C&G, M/C basins, and drainage to existing E. Main St./E. Hively Ave. RCPs (≤10-ft. bgs)
64-2	S-1 S-2	VOCs	
64-3	S-1 S-2		
Advanced Auto/former S&R Brass Foundries			Partial/Linear Acquisition
2676 South Main Street			
65-1	S-1 S-2	VOCs, SVOCs, PCBs, RCRA metals (+Cr ^{VI})	Potential releases/residual waste petroleum tar/creosote, coal/coke, metals (former foundry) located within/adjacent to ROW and excavation (0-2, 0-10 ft. bgs); Stormwater - BMPs, EoP C&G, M/C basins, and drainage to existing S. Main St. RCP (<10-ft. bgs)
Norfolk Southern Railroad			Partial/Linear Acquisition
Hammond Avenue			
66-1	S-1 S-2	VOCs, SVOCs, PCBs, RCRA metals (+Cr ^{VI})	Potential releases/residual waste petroleum, PCBs and metals (R/R operations and stained soils) located within/adjacent to ROW and excavation (0-2, 0-10 ft. bgs); Stormwater - BMPs, EoP C&G, M/C basins, and drainage to existing E. Hively/Hammond Aves. RCP (≤10-ft. bgs)

NOTES: VOC – Volatile Organic Compound; SVOC – Semi-volatile Organic Compound; PCB – Polychlorinated Biphenyl; As – Arsenic; Pb – Lead; LBP – Lead-Based Paint; BMPs – INDOT Best Management Practices, EoP C&G - Edge of Pavement Curb and Gutter treatments, M/C basins - access Manhole or Catch basins, RCP – Reinforced Concrete Pipe, (+As) – representative local background arsenic, (+Cr^{VI}) - low level hexavalent chromium was analyzed separately by ENVision Laboratories, Inc. for comparison to IDEM RISC migration to groundwater (MTG), effective beginning March 1, 2022): <https://www.in.gov/idem/cleanups/resources/technical-guidance-for-cleanups/idem-screening-and-closure-level-tables/> and (+TCLP) – Toxicity Characteristic Leach Procedure.

* Environmental sampling at “Acquire Entire Property” sites in support of potential land acquisition and/or reuse evaluations are addressed independently from the project construction worker and material handling sampling.

3.0 PHASE II ESA - INVESTIGATION SUMMARY

The Phase II ESA investigation was conducted on September 12 and 13, 2022; field observations and analytical results are summarized on Table 3-1 and shown in detail on Figures 3-1 to 3-7.

Table 3-1 Phase II ESA Sample Results Summary

Boring	Sample	Analytes	Sample Result Comparisons to IDEM RCGs* and Findings
7-Eleven & Mobile Gas Station/former gas station <i>2700 South Main Street</i> Acquire Entire Property †			
21-1	S-1 3-4' S-2 8-9'	VOCs, SVOCs, Lead (+TCLP Pb)	- Fill to 3' and slight petroleum odor/PID reading at 7 ft bgs (21-1) - VOCs, SVOCs, and lead analytes < IDEM RCGs Lead >20x RCRA waste level (21-1 S-1); TCLP Pb < RCRA waste level
21-2	S-1 2-3'	VOCs, SVOCs, Lead	- No worker safety - No excavation soil handling/disposal requirements
21-3	S-1 1-2'		
IN MI Power Co. & Norfolk Southern R/R <i>East of South Main Street</i> Partial/Linear Acquisition			
23-1	S-1 2-3' S-2 7-8'	VOCs, SVOCs, PCBs, RCRA metals (+Cr ^{VI})	- No field indications - VOCs, SVOCs, PCBs, RCRA metal analytes < IDEM RCGs except for: Arsenic > bkgd., IDEM RCGs (Res., Soil MTG; 23-1 S-1); slag - No worker safety - Excavation soil handling/disposal per IDEM Uncontaminated Soil Policy
Former Pine De Rosa Furniture Manufacturing <i>2700 Hammond Avenue</i> Acquire Entire Property †			
25-1	S-1 1-2' S-2 9-10'	VOCs, Lead (+As)	- No field indications - VOCs, lead < IDEM Screening & Closure Levels except for: Benzene > IDEM Soil MTG Level 51 (25-2 S-2)
25-2	S-1 2-3' S-2 7-8'	VOCs, Lead	- No worker safety - Excavation soil handling/disposal per IDEM Uncontaminated Soil Policy and dewatering requirements as needed
El Rosal Market/former Palmer Hdw. & gas stn. <i>2693 South Main Street</i> Partial/Linear Acquisition			
42-1	S-1 2-3' S-2 9-10'	VOCs, SVOCs, Lead	- No field indications - VOCs, SVOCs, and lead analytes < IDEM RCGs - No worker safety - No excavation soil handling/disposal requirements
Carwash Station/former Strom Brass Foundry <i>2680 South Main Street</i> Partial/Linear Acquisition			
43-1	S-1 2-3' S-2 6-7'	VOCs, SVOCs, PCBs, RCRA metals (+Cr ^{VI})	- No field indications - VOCs, SVOCs, PCBs, and RCRA metal analytes < IDEM RCGs - No worker safety - No excavation soil handling/disposal requirements
Midas/former Strom Brass Foundry <i>2692 South Main Street</i> Partial/Linear Acquisition			
44-1	S-1 3-4' S-2 7-8'	VOCs, SVOCs, PCBs, RCRA metals (+Cr ^{VI})	- Pavement and asphalt fragment fill to 3'; No field indications - VOCs, SVOCs, PCBs, and RCRA metal analytes < IDEM RCGs - No worker safety - No excavation soil handling/disposal requirements
New commercial bld./former coal/salvage yards <i>2729 Hammond Avenue</i> Partial/Linear Acquisition			
51-1	S-1 1-2' S-2 5-6'	VOCs, SVOCs, RCRA metals	- Coal fragments and oxidation to 2'; coal fragments at 6' - VOCs, SVOCs, and RCRA metal analytes < IDEM RCGs except for:

Boring	Sample	Analytes	Sample Result Comparisons to IDEM RCGs* and Findings
51-2	S-1 4-5' S-2 6-7'	(+Cr ^{VI})	Arsenic > bkgd., IDEM RCGs (Res., Com./Ind., Soil MTG; 51-1 S-1) Arsenic > bkgd., IDEM RCGs (Soil MTG; 51-2 S-1), coal fines - No worker safety - Excavation soil handling/disposal per IDEM Uncontaminated Soil Policy
Marcos Auto Sales/former Weist/Wade's Service 2644 Sterling Avenue			Partial/Linear Acquisition
52-1	S-1 2-3' S-2 9-10'	VOCs, SVOCs, Lead	- Staining to 3' - VOCs, SVOCs, and lead analytes < IDEM RCGs - No worker safety - No excavation soil handling/disposal requirements
Residential Lots/former auto repair 2625 Lowell Avenue			Partial/Linear Acquisition
56-1	S-1 2-3' S-2 7-8'	VOCs, SVOCs, Lead (+As)	- No field indications - VOCs, SVOCs, arsenic, and lead analytes < IDEM RCGs - No worker safety - No excavation soil handling/disposal requirements
Eulloquis Kustom /former Superior Foundry 2676 South Main Street			Partial/Linear Acquisition
63-1	S-1 2-3' S-2 7-8'	VOCs, SVOCs, PCBs, RCRA metals (+Cr ^{VI} +TCLP Pb)	- Slag fragment fill to 2' - VOCs, SVOCs, PCBs, and RCRA metal analytes < IDEM RCGs Lead > 20x RCRA waste level (63-1 S-1); TCLP Pb = ND - No worker safety - No excavation soil handling/disposal requirements
Elkhart Speedwash/former dry cleaner 2701 South Main Street			Acquire Entire Property †
64-1	S-1 1-2' S-2 9-10'	VOCs (+As)	- Odor to 2' (64-1); no field indications (64-2); perch seam at 4.5' (64-3- VOCs and SVOCs analytes < IDEM RCGs Arsenic > IDEM RCGs (Soil MTG; 64-1 S-1) - No worker safety - No excavation soil handling/disposal requirements
64-2	S-1 2-3' S-2 9-10'	VOCs	
64-3	S-1 4-5' S-2 9-10'	VOCs	
Advanced Auto/former S&R Brass Foundries 2676 South Main Street			Partial/Linear Acquisition
65-1	S-1 3-4' S-2 9-10'	VOCs, SVOCs, PCBs, RCRA Metals (+Cr ^{VI})	- Staining to 4', organics at 9-10' - VOCs, SVOCs, PCBs, and RCRA metal analytes < IDEM RCGs except: Naphthalene > IDEM Soil MTG Level 79 (65-1 S-1) Arsenic > IDEM Soil MTG Level 5.9 (65-1 S-1) Lead > 20x RCRA waste level (65-1 S-1); TCLP Pb = ND - No worker safety - Excavation soil handling/disposal per IDEM Uncontaminated Soil Policy
Norfolk Southern Railroad West of Hammond Avenue			Partial/Linear Acquisition
66-1	S-1 4-5' S-2 8-9'	VOCs, SVOCs, PCBs, RCRA Metals (+Cr ^{VI})	- Staining to 5' - VOCs, SVOCs, PCBs, and RCRA metal analytes < IDEM RCGs - No worker safety - No excavation soil handling/disposal requirements

NOTES: ND – Not detected; VOC – Volatile Organic Compound; SVOC – Semi-volatile Organic Compound; PCB – Polychlorinated Biphenyl; As – Arsenic; Pb – Lead; LBP – Lead-Based Paint; BMPs – INDOT Best Management Practices, EoP C&G - Edge of Pavement Curb and Gutter treatments, M/C basins - access Manhole or Catch basins, RCP – Reinforced Concrete Pipe, (+As) – representative local background arsenic, (+Cr^{VI}) - low level hexavalent chromium was analyzed separately by ENVision Laboratories, Inc. for comparison to IDEM RISC migration to groundwater (MTG), effective beginning March 1, 2022): <https://www.in.gov/idem/cleanups/resources/technical-guidance-for-cleanups/idem-screening-and-closure-level-tables/> and (+TCLP) – Toxicity Characteristic Leach Procedure.

* Environmental sampling at "Acquire Entire Property" sites in support of potential land acquisition and/or reuse evaluations are addressed independently from the project construction worker and material handling sampling.

3.1 Field Observations

3.1.1 *Shallow (S-1) soils*

Asphalt and/or concrete pavement and coarse sand and gravel fill extended to 2 to 4-ft. bgs at twelve (12) of the boring locations. Coal fragments were observed within the fill material in two (2) borings (51-2 S-1 and 51-2 S-1), slag in one (1) boring (63-1 S-1), petroleum odor at two (2) borings (21-2 S-1 and 64-1 S-1), and staining at three (3) borings (52-1 S-1, 65-1 S-1, and 66-1 S-1). The remaining seven (7) borings (21-2, 25-1, 25-2, 51-1, 56-1, 65-1, and 66-1) were covered by vegetation (grass) and a silty sand topsoil with organics/roots from about 0-2-ft. bgs.

3.1.2 *Sub-Surface (S-2) soils*

Subsurface soils consisted of a fine to medium grained sand extending from the overlying pavement, fill, and/or topsoil to the boring terminus at 10-ft. bgs. However, four (4) locations included small lenses of a fine-grained sand (21-1, 43-1, 44-1 and 63-1) from about 3-7-ft. bgs.

3.1.3 *Representative Local Background Arsenic Locations*

Samples from three (3) representative local background arsenic locations (25-2, 56-1, and 64-1) were collected in support of RCRA metal evaluations at eight (8) locations (23-1, 43-1, 44-1, 51-1, 51-2, 63-1, 65-1, and 66-1).

3.1.4 *Groundwater*

Groundwater was not encountered above the 10-ft bgs terminus depth of Phase II borings.

Existing City of Elkhart RCP inverts in the vicinity of the 13 sites range from <10-ft. bgs (753 to 751-feet NAV 88) along S. Main Street, ≤11-ft. bgs (748-feet) along E. Hively, to a maximum of ≤12-ft. bgs (746.5-feet) at the main truckline north along Eddy Street. Upon review of project geotechnical boring logs, unsaturated topsoil, fill, and medium grained sands (A-3) were indicated above 10-ft bgs with "*Free ground water was generally encountered on the drilling tools at depths ranging from about 9.5 ft to 12.0 ft below the existing ground surface*"

^A. There also appears to be a correlation between the reported borehole water depth measurements following the borehole advancing into an underlying coarse to very coarse sand layer (A-1-b) at roughly 12-ft bgs (or 748-feet NAV 88).

3.2 Analytical Results

The following Phase II ESA analytical result summaries (Table 3-1 and Figure 3-1) for each of the thirteen (13) sites (Figures 3-2 to 3-7) are provided in detailed (Table 6) at the end of this report.

^A "Geotechnical Engineering Investigation - Hively Avenue Reconstruction Burr Oak Avenue to Hazel Street INDOT Des. Nos. 1801933, 2001662, & 190082 - Elkhart County, Indiana" Atlas Technical Consultants LLC. dated July 22, 2022.

3.2.1 VOCs

Thirty (30) of the thirty-six (36) soil samples were non-detect for VOCs; the remaining three (3) shallow (S-1) and three (3) sub-surface (S-2) soil samples ranged from one to six compounds:

S-1: 21-2 (benzene, toluene), 65-1 (toluene), and 64-1 (PCE)

S-2: 25-2 (BETX, two plasticizers), 42-1 (PCE) and 64-2 (PCE)

3.2.2 SVOCs

Twelve (12) of the 26 samples were non-detect for SVOCs; the remaining ten (10) shallow and four (4) subsurface soil samples ranged from one to twenty (20) compounds:

S-1: 21-1 (12), 21-2 (11), 21-3 (13), 23-1 (8), 43-1 (19), 51-2 (9), 52-1 (6), 56-1 (1), 65-1 (20), 66-1 (12)

S-2: 42-1 (7), 51-1 (3), 52-1 (8), and 63-1 (2)

3.2.3 PCBs

All twelve (12) soil samples were non-detect for PCBs.

3.2.4 RCRA Metals

All sixteen (16) soil samples were non-detect for low-level hexavalent chromium^{Cr}. RCRA metals ranged from six (6) for shallow (S-1) soils and four to five (5) for sub-surface (S-2) soils. Two (2) shallow (S-1) soil samples were greater than 20 times the regulatory concentration but were non-detect for TCLP lead:

S-1: 23-1 (6), 43-1 (6), 44-1 (6), 51-1 (6), 51-2 (7), 63-1 (7+TCLP), 65-1 (6+TCLP), and 66-1 (6)

S-2: 23-1 (5), 43-1 (4), 44-1 (5), 51-1 (4), 51-2 (5), 63-1 (4), 65-1 (4), and 66-1 (4)

3.2.5 Lead

Lead was detected in all eight (8) shallow (S-1) and eight (8) subsurface soil samples; one (1) shallow (S-1) soil samples was greater than 20 times the regulatory concentration but was non-detect for TCLP lead:

S-1: 21-1 (+TCLP), 21-2, 21-3, 25-1, 25-2, 42-1, 52-1, and 56-1

S-2: 21-1, 21-2, 21-3, 25-1, 25-2, 42-1, 52-1, and 56-1

3.2.6 Representative Local Background Arsenic Locations

Three locations (23-1, 51-1, 65-1) with reported historic coal, foundry, or railroad operations had higher levels of arsenic than surrounding locally representative shallow soil locations.

Cr – Low level hexavalent Chromium was analyzed separately for comparison to IDEM RISC migration to groundwater (MTG) by ENVision Laboratories, Inc.

Figure 3-1 Phase II ESA Sample Result Locations > IDEM RCGs Overview

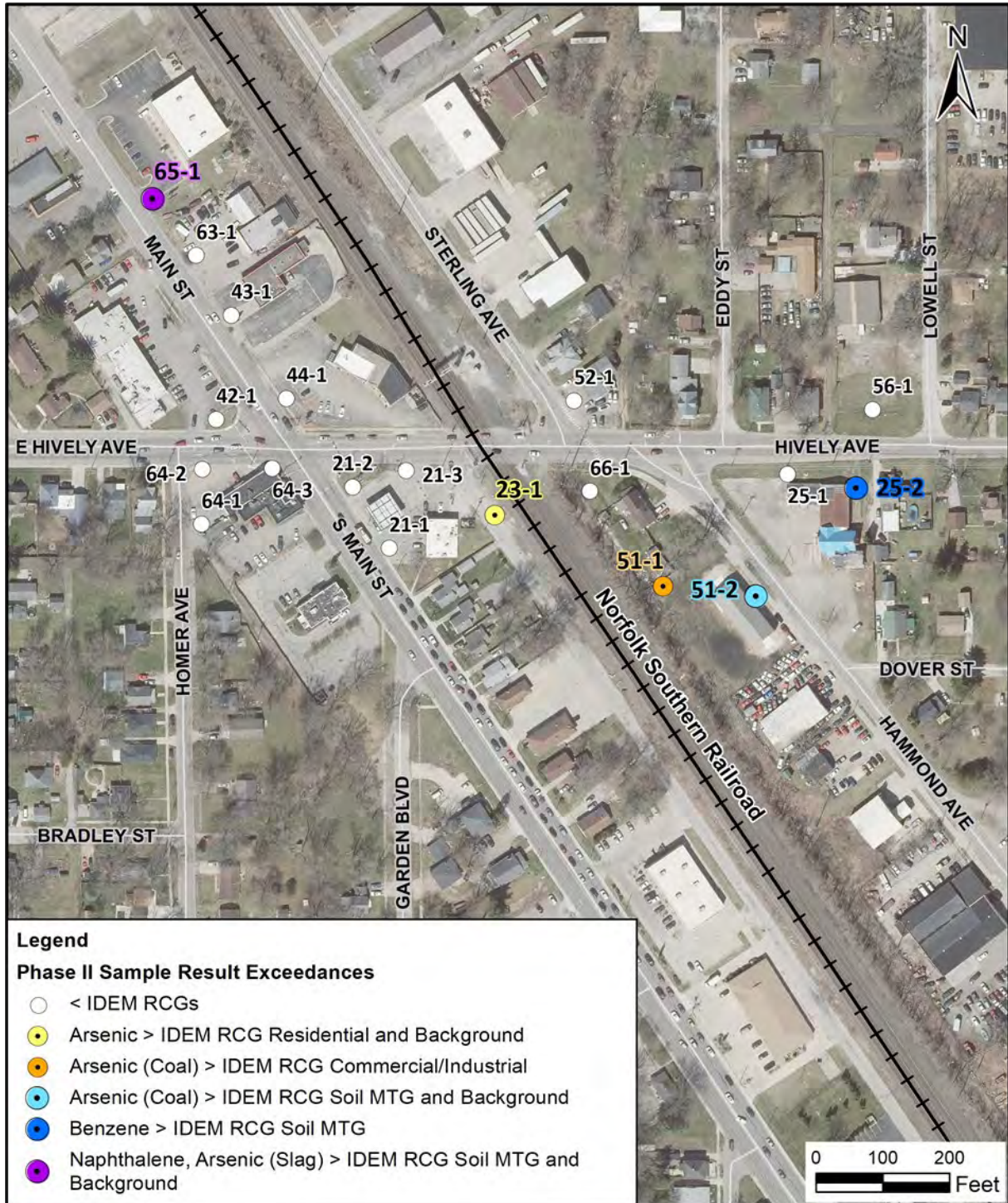


Figure 3-2 Phase II ESA Sample Results – Sites 21 and 23

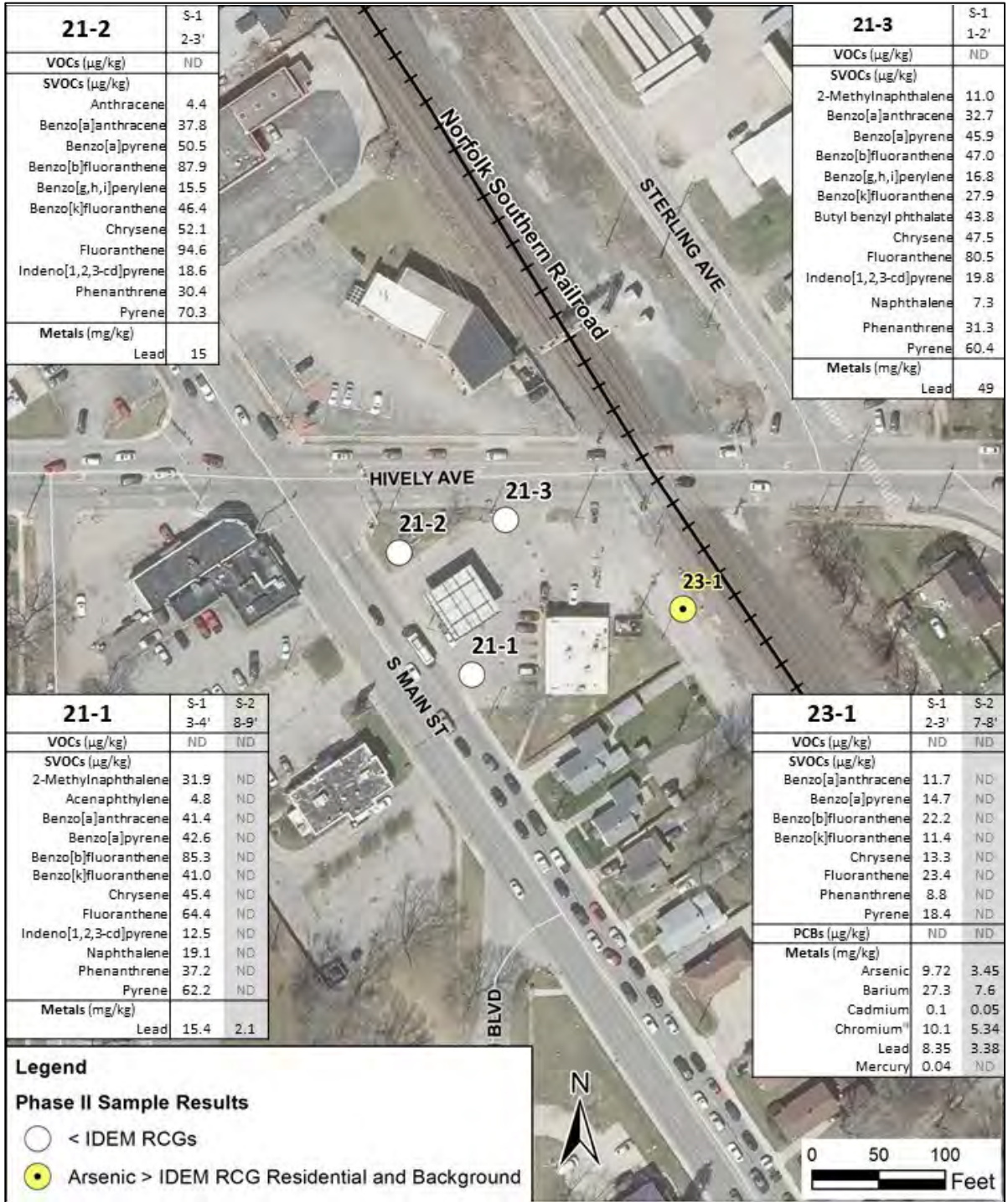


Figure 3-3 Phase II ESA Sample Results – Sites 25 and 56



Figure 3-4 Phase II ESA Sample Results – Sites 42, 43, and 44

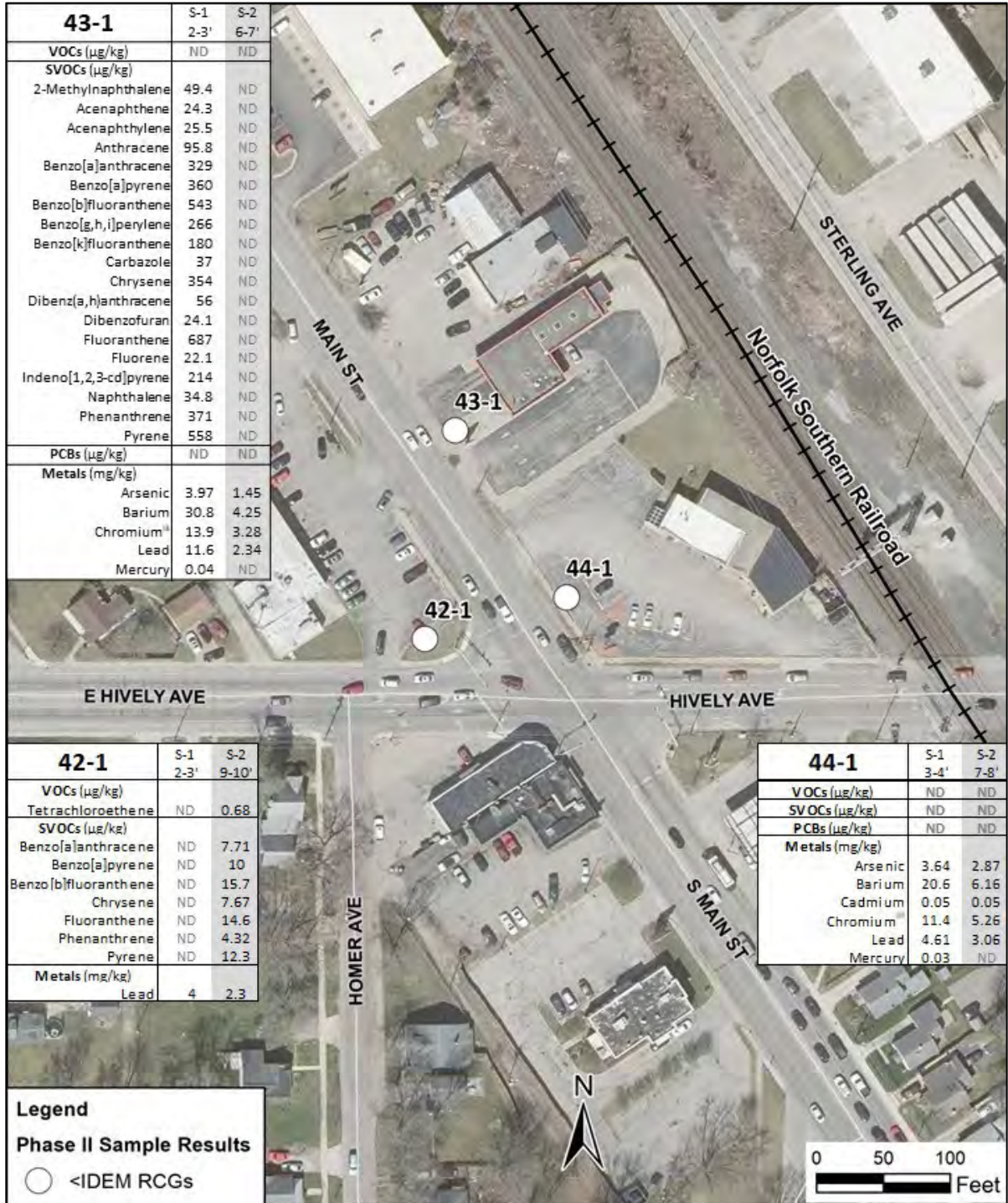


Figure 3-5 Phase II ESA Sample Results – Site 51



Figure 3-6 Phase II ESA Sample Results – Sites 52 and 66

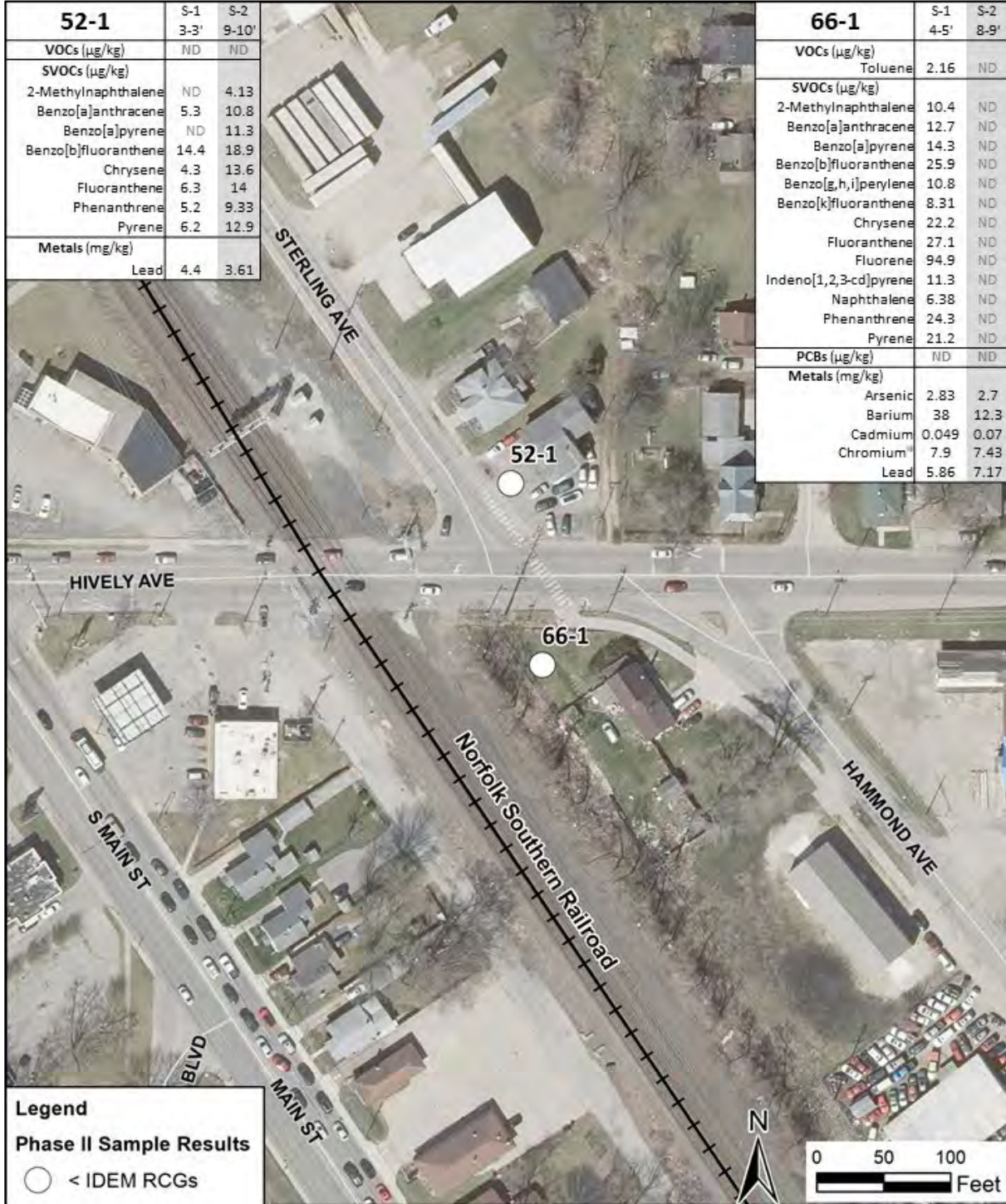


Figure 3-7 Phase II ESA Sample Results – Sites 63 and 65

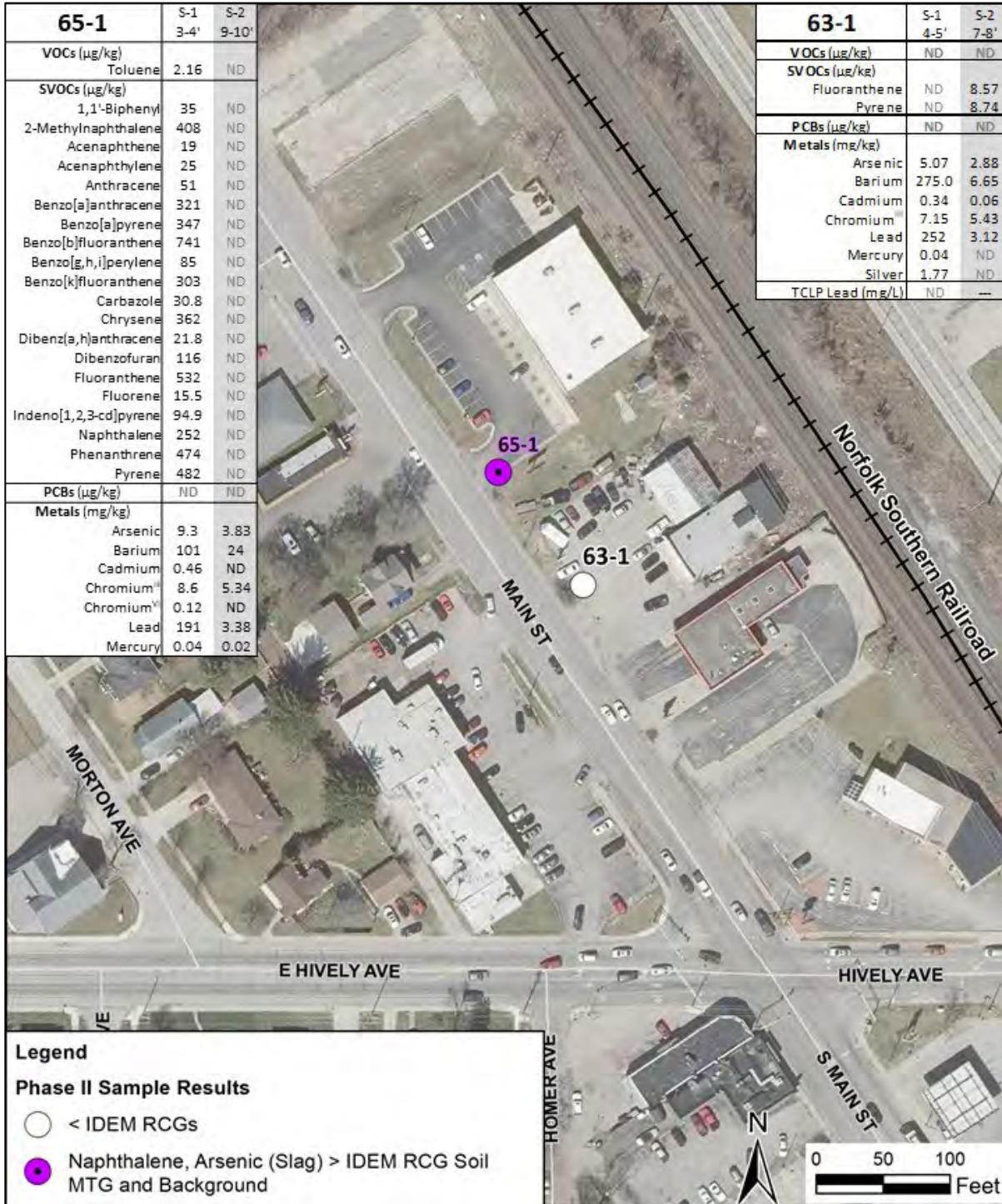


Figure 3-8 Phase II ESA Sample Results – Site 64



4.0 CONCLUSIONS AND RECOMMENDATIONS

Phase II ESA investigation conclusions and recommendations (Table 4-1 and Figure 4-1) are based upon applicable INDOT SAM guidance, IDEM RCGs, RCRA waste (TCPL) and background arsenic. Most of the Phase II sample results were non-detect or less than applicable IDEM RCGs with the exception of six (6) sample locations where shallow soil (2-4 ft. bgs) that cannot be re-used on-site and would need to be disposed as a non-hazardous waste landfill due to one or more analytes above the Soil Migration to Groundwater (MTG) RCG: one VOC (benzene; 51-2 S-2), one SVOC (naphthalene; 65-1 S-1), and four locations (23-1, 51-1, 51-2, and 65-1) with reported historic coal, foundry, or railroad operations were observed to have residual coal fines and/or slag fill and corresponding arsenic results >IDEM RCGs and local shallow soils.

In addition, the Project is expected to have minimal potential to impact the St. Joseph Sole-Source Aquifer based upon Phase II ESA field observations and sample results and the following factors:

- Anticipated excavation depths at or above static water levels in the uppermost water bearing unit (roughly 12-ft. bgs or 748-foot elevation) followed by 50 to 80-feet of less permeable silty clays and silty loams and the top of the lower aquifer screen intervals (roughly 100-ft. bgs or 760-foot elevation) as indicated on geotechnical boring logs and IN DNR well logs near the Project study area.
- The Project will replace existing at-grade roadways with adjacent raised roadway structures over a regional railroad corridor that will improve safety and mobility by eliminating vehicle backups and congestion due to frequent train traffic. There have not been any accidents at this grade crossing, but the number of trains per day creates dangerous queuing into nearby intersections.
- The Recommended Alternative provides the least amount of impact to existing property owners both in the impacts of properties requiring acquisition and the duration of construction. The drainage design incorporates inlets along the curb lines to collect roadway drainage in an enclosed storm sewer system that will be tied into the existing City of Elkhart drainage system. The first action item will be the installation of proposed stormwater and waterline crossings across Hively Avenue, Eddy Street, Lowell Avenue, and Warren Avenue for use during the remainder of construction.
- Due to settlement concerns found during the final geotechnical design, the Preferred alternate was modified to have only a continuous bridge instead of two separate bridges with a retaining wall soil mass between them. This was done to limit the settlement and eliminate the need for weep drainage which could affect the lower aquifer.

Table 4-1 Phase II ESA Findings and Recommendations

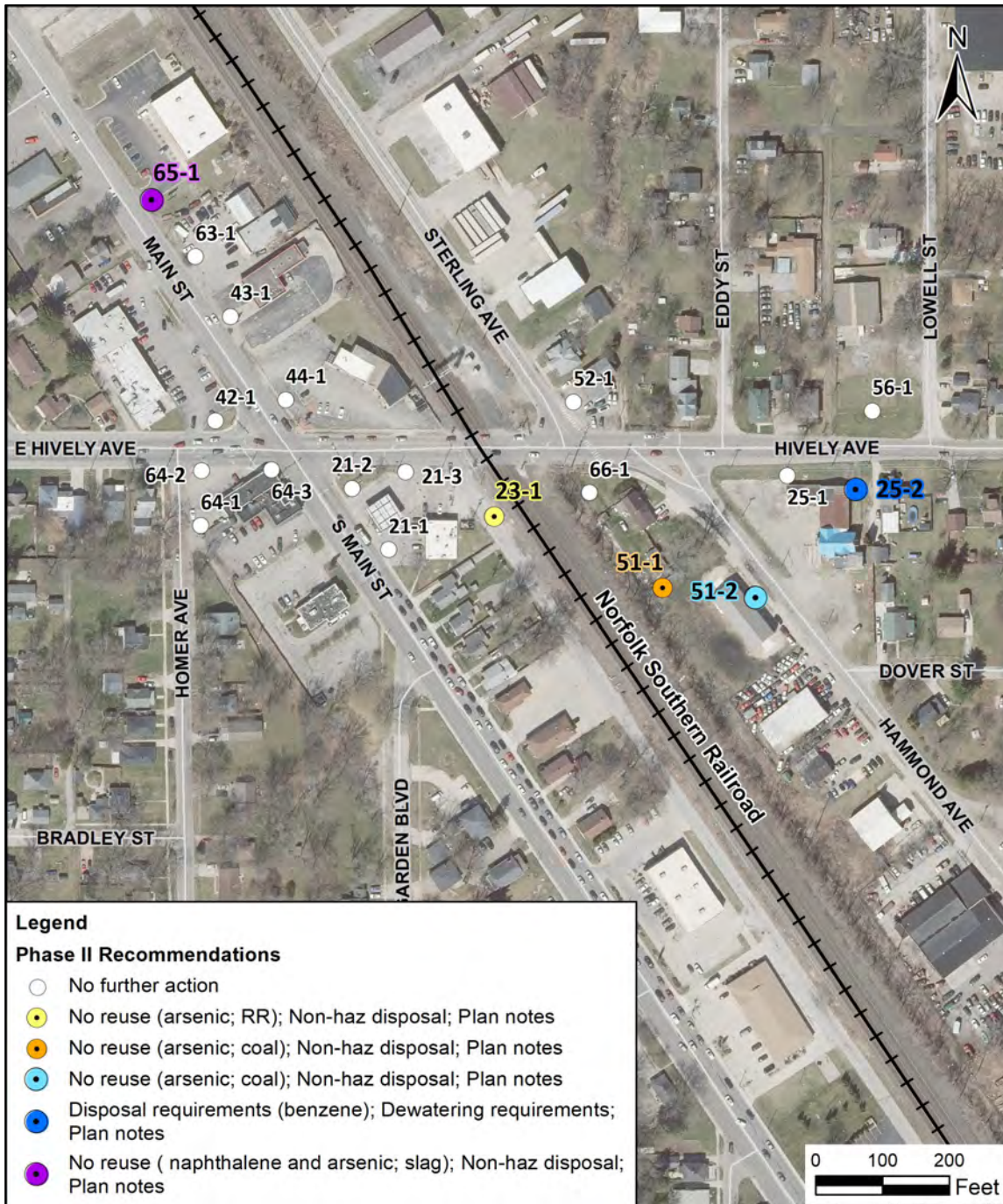
Boring	Sample	Analytes	Sample Result Comparisons to IDEM RCGs* and Findings
7-Eleven & Mobile Gas Station/former gas station <i>2700 South Main Street</i> Acquire Entire Property †			
21-1	S-1 3-4' S-2 8-9'	VOCs, SVOCs, Lead (+TCLP Pb)	- VOCs, SVOCs, and lead analytes < IDEM RCGs Lead >20x RCRA waste level (21-1 S-1); TCLP Pb < RCRA waste level
21-2	S-1 2-3'	VOCs, SVOCs,	- No worker safety; No excavation soil handling/disposal requirements
21-3	S-1 1-2'	Lead	- Recommendations: No further action; standard BMPs
IN MI Power Co. & Norfolk Southern R/R <i>East of South Main Street</i> Partial/Linear Acquisition			
23-1	S-1 2-3' S-2 7-8'	VOCs, SVOCs, PCBs, RCRA metals (+Cr ^{VI})	- VOCs, SVOCs, PCBs, RCRA metal analytes < IDEM RCGs except for: Arsenic > bkgd., IDEM RCGs (Res., Soil MTG; 23-1 S-1); slag - No worker safety; - Excavation soil handling/disposal per IDEM Uncontaminated Soil Policy - Recommendations: No further action; No reuse of excavated material (0-4-ft. bgs) and handling, removal, and disposal offsite disposal at approved non-hazardous waste landfill; plan notes
Former Pine De Rosa Furniture Manufacturing <i>2700 Hammond Avenue</i> Acquire Entire Property †			
25-1	S-1 1-2' S-2 9-10'	VOCs, Lead (+As)	- VOCs, lead < IDEM Screening & Closure Levels except for: Benzene > IDEM Soil MTG Level 51 (25-2 S-2) - No worker safety - Excavation soil handling/disposal per IDEM Uncontaminated Soil Policy and dewatering requirements as needed
25-2	S-1 2-3' S-2 7-8'	VOCs, Lead	- Recommendations: No further action; No reuse of excavated material (>4-ft. bgs) and handling, removal, and disposal offsite disposal at approved non-hazardous waste landfill, potential dewatering sampling, handling, removal, and disposal; plan notes
El Rosal Market/former Palmer Hdw. & gas stn. <i>2693 South Main Street</i> Partial/Linear Acquisition			
42-1	S-1 2-3' S-2 9-10'	VOCs, SVOCs, Lead	- VOCs, SVOCs, and lead analytes < IDEM RCGs - No worker safety; No excavation soil handling/disposal requirements - Recommendations: No further action; standard BMPs
Carwash Station/former Strom Brass Foundry <i>2680 South Main Street</i> Partial/Linear Acquisition			
43-1	S-1 2-3' S-2 6-7'	VOCs, SVOCs, PCBs, RCRA metals (+Cr ^{VI})	- VOCs, SVOCs, PCBs, and RCRA metal analytes < IDEM RCGs - No worker safety; No excavation soil handling/disposal requirements - Recommendations: No further action; standard BMPs
Midas/former Strom Brass Foundry <i>2692 South Main Street</i> Partial/Linear Acquisition			
44-1	S-1 3-4' S-2 7-8'	VOCs, SVOCs, PCBs, RCRA metals (+Cr ^{VI})	- VOCs, SVOCs, PCBs, and RCRA metal analytes < IDEM RCGs - No worker safety; No excavation soil handling/disposal requirements - Recommendations: No further action; standard BMPs
New commercial bld./former coal/salvage yards <i>2729 Hammond Avenue</i> Partial/Linear Acquisition			
51-1	S-1 1-2' S-2 5-6'	VOCs, SVOCs, RCRA metals (+Cr ^{VI})	- VOCs, SVOCs, and RCRA metal analytes < IDEM RCGs except for: Arsenic > bkgd., IDEM RCGs (Res., Com./Ind., Soil MTG; 51-1 S-1) Arsenic > bkgd., IDEM RCGs (Soil MTG; 51-2 S-1), coal fines

Boring	Sample	Analytes	Sample Result Comparisons to IDEM RCGs* and Findings
51-2	S-1 4-5' S-2 6-7'	VOCs, SVOCs, RCRA metals (+Cr ^{VI})	- No worker safety, - Excavation soil handling/disposal per IDEM Uncontaminated Soil Policy - Recommendations: No further action; No reuse of excavated material (0-5-ft. bgs) and handling, removal, and disposal offsite disposal at approved non-hazardous waste landfill; plan notes
Marcos Auto Sales/former Weist/Wade's Service 2644 Sterling Avenue			Partial/Linear Acquisition
52-1	S-1 2-3' S-2 9-10'	VOCs, SVOCs, Lead	- VOCs, SVOCs, and lead analytes < IDEM RCGs - No worker safety; No excavation soil handling/disposal requirements - Recommendations: No further action; standard BMPs
Residential Lots/former auto repair 2625 Lowell Avenue			Partial/Linear Acquisition
56-1	S-1 2-3' S-2 7-8'	VOCs, SVOCs, Lead (+As)	- VOCs, SVOCs, arsenic, and lead analytes < IDEM RCGs - No worker safety; No excavation soil handling/disposal requirements - Recommendations: No further action; standard BMPs
Eulloquis Kustom /former Superior Foundry 2676 South Main Street			Partial/Linear Acquisition
63-1	S-1 2-3' S-2 7-8'	VOCs, SVOCs, PCBs, RCRA metals (+Cr ^{VI} +TCLP Pb)	- VOCs, SVOCs, PCBs, and RCRA metal analytes < IDEM RCGs Lead > 20x RCRA waste level (63-1 S-1); TCLP Pb = ND - No worker safety; No excavation soil handling/disposal requirements - Recommendations: No further action; standard BMPs
Elkhart Speedwash/former dry cleaner 2701 South Main Street			Acquire Entire Property †
64-1	S-1 1-2' S-2 9-10'	VOCs (+As)	- VOCs and SVOCs analytes < IDEM RCGs Arsenic > IDEM RCGs (Soil MTG; 64-1 S-1) - No worker safety; No excavation soil handling/disposal requirements - Recommendations: No further action; standard BMPs
64-2	S-1 2-3' S-2 9-10'	VOCs	
64-3	S-1 4-5' S-2 9-10'	VOCs	
Advanced Auto/former S&R Brass Foundries 2676 South Main Street			Partial/Linear Acquisition
65-1	S-1 3-4' S-2 9-10'	VOCs, SVOCs, PCBs, RCRA Metals (+Cr ^{VI})	- VOCs, SVOCs, PCBs, and RCRA metal analytes < IDEM RCGs except: Naphthalene > IDEM Soil MTG Level 79 (65-1 S-1) Arsenic > IDEM Soil MTG Level 5.9 (65-1 S-1) Lead > 20x RCRA waste level (65-1 S-1); TCLP Pb = ND - No worker safety, - Excavation soil handling/disposal per IDEM Uncontaminated Soil Policy - Recommendations: No further action; No reuse of excavated shallow material (0-4-ft. bgs) and handling, removal, and disposal offsite disposal at approved non-hazardous waste landfill; plan notes
Norfolk Southern Railroad West of Hammond Avenue			Partial/Linear Acquisition
66-1	S-1 4-5' S-2 8-9'	VOCs, SVOCs, PCBs, RCRA Metals (+Cr ^{VI})	- VOCs, SVOCs, PCBs, and RCRA metal analytes < IDEM RCGs - No worker safety; No excavation soil handling/disposal requirements - Recommendations: No further action; standard BMPs

NOTES: ND – Not detected; VOC – Volatile Organic Compound; SVOC – Semi-volatile Organic Compound; PCB – Polychlorinated Biphenyl; bkgd. As – representative local background arsenic location; +TCLP – Toxicity Characteristic Leach Procedure; Soil MTG – Soil Migration to Groundwater. *IDEM RCGs - 2022 IDEM Remediation Closure Guide (RCG) Screening Level Table for Soil Exposure (Residential [Res.], Commercial/Industrial [Com/Ind], Excavation [Exc]) and Soil Migration to Groundwater (MTG; effective beginning March 1, 2022): <https://www.in.gov/idem/cleanups/resources/technical-guidance-for-cleanups/idem-screening-and-closure-level-tables/>

†-Environmental sampling at "Acquire Entire Property" sites in support of potential land acquisition and/or reuse evaluations are addressed independently from the project construction worker and material handling sampling.

Figure 4-1 Phase II ESA Findings and Recommendation Locations



From: Washburn, Peter <PWashburn1@indot.IN.gov>
Sent: Thursday, November 10, 2022 8:20 AM
To: Jack, Laura <Laura.Jack@mbakerintl.com>; Peyton, James <JPeyton@mbakerintl.com>; Foheybreting, Nicole K <nfoheybreting@indot.in.gov>
Cc: Boltz, Charles <Charles.Boltz@mbakerintl.com>; Holder, Jason <JHolder@indot.IN.gov>
Subject: EXTERNAL: RE: Phase II ESA Report_Des1801933_E Hively Ave Overpass_

Good Morning Laura,

Thank you for making the requested edits and updates. INDOT SAM concurs with the Phase II ESA report for Des No. 1801933. Please find the PW link below:

[Phase II ESA Report_Des1801933_E Hively Ave Overpass_concur pww 11-10-22.pdf](#)

Let me know if you have any questions or concerns. Thanks, and have a great day!

Peter Washburn

Site Assessment & Management (SAM) Team
Senior Environment Manager
100 North Senate Avenue N758-ES
Indianapolis, Indiana 46204

Office: (317) 982-0912

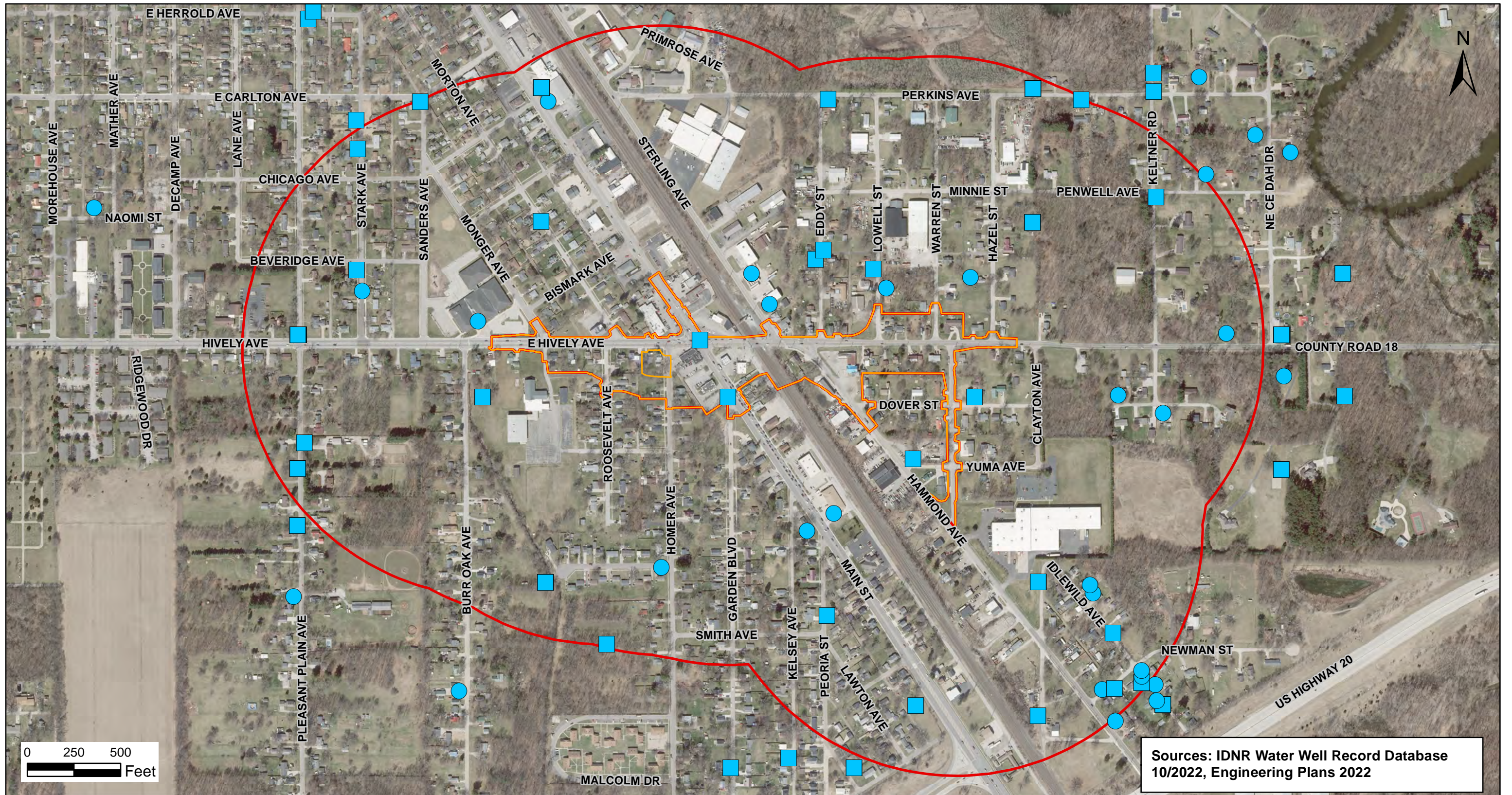
Email: PWashburn1@indot.in.gov

Office Hours: 830 to 430 PM



Attachment G:

Water Wells



Legend

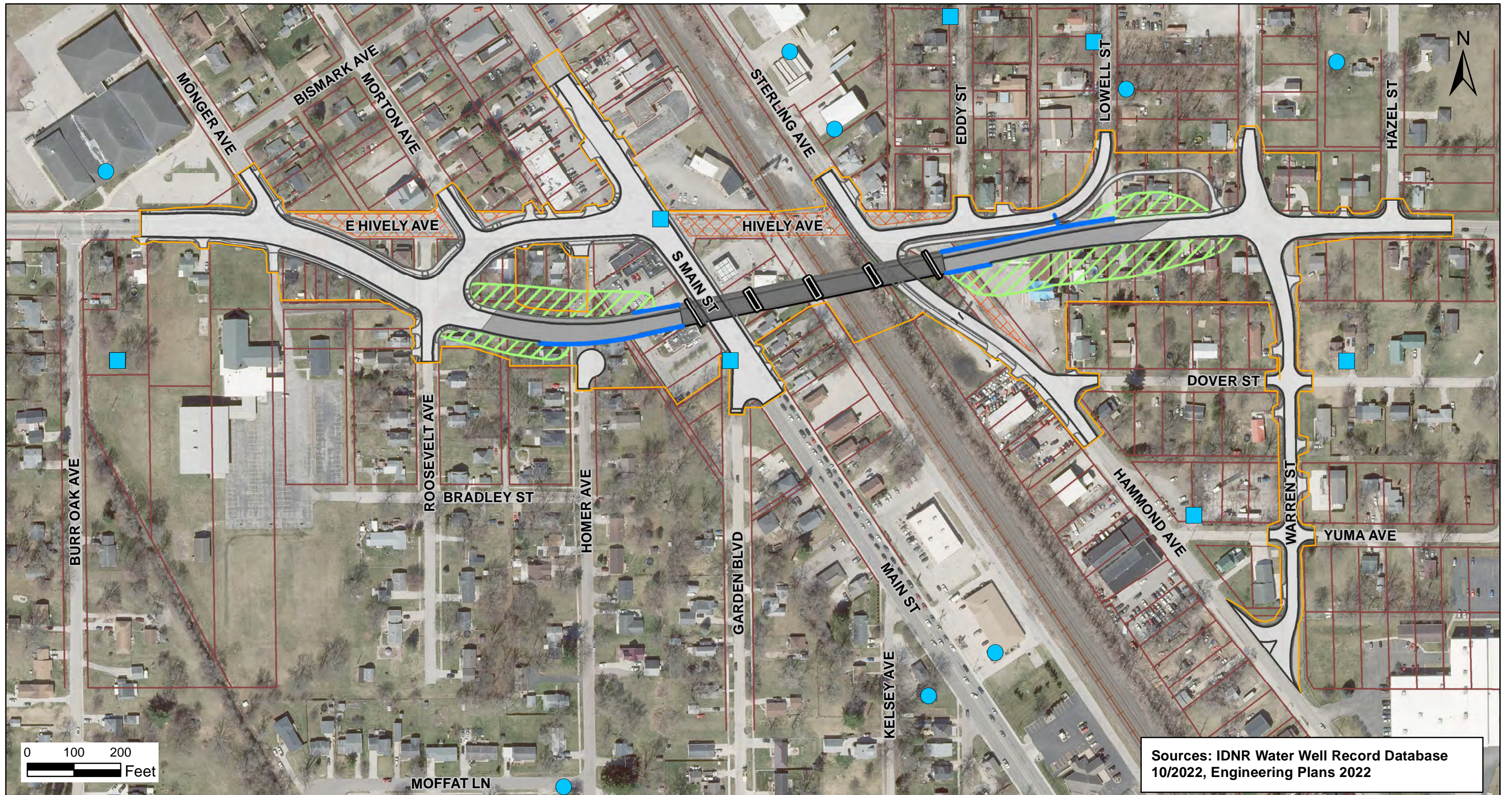
Preferred Alternative

- Construction Limits
- 0.25 Miles Outside Construction Limit

IDNR Water Well

- Field Located
- Estimated Location

**Hively Avenue Overpass Project
 Des No. 1801983
 Elkhart, Indiana
 IDNR Water Well Locations
 0.25 miles outside Construction Limits**



Sources: IDNR Water Well Record Database 10/2022, Engineering Plans 2022

Legend

- | | | | |
|------------------------------|-----------------------|--------------------|------------------------|
| Preferred Alternative | — Construction Limits | ▨ Side Slope | IDNR Water Well |
| ■ Bridge | — MSE Wall | ▨ Pavement Removal | ● Field Located |
| ■ Elevated Roadway | — Piling Location | | ■ Estimated Location |
| ■ Pavement Limits | | | |

**Hively Avenue Overpass Project
Des No. 1801983
Elkhart, Indiana
IDNR Water Well Locations
Preferred Alternative**

Attachment H: Vibration Susceptibility



Hively Avenue Overpass Project Vibration Susceptibility Memo

August 31, 2022

Prepared for:

City of Elkhart

&

Indiana Department of Transportation

Table of Contents

Construction Overview2

Potential Vibration Susceptibility6

Conclusion and Recommendations9

Construction Overview

Construction of the Hively Avenue overpass is estimated to begin in 2023 and will be divided into phases, keeping Hively Avenue and the at-grade crossings open as long as possible. Total construction time is anticipated to be 30 months. During the construction phase of the project there will be temporary increases in noise and vibration associated with equipment and activities related to construction. These activities include building demolitions and site clearance, earth moving activities including grading and soil tamping, pile driving for bridge foundations, and general roadway, drainage, sidewalk, and multiple use path construction and reconstruction that requires compaction and pavement rollers. Typical construction equipment is shown in Figure 1.

Figure 1: Construction Equipment



Table 1 and Figures 2-5 describe the construction activities during each phase and associated vibration that may occur.

Table 1: Construction Phasing

Phase	Construction Activities	Possible Vibration Activities	Estimated Duration
1	<ul style="list-style-type: none"> Utility relocation and demolition 	Demolition	6 Months
2	<ul style="list-style-type: none"> Reconstruction of Warren Street and realignment of Hammond Avenue with staggered construction phases Begin construction of new roadway on the west end from western limit to Roosevelt 	Pavement removal, subgrade compacting, and HMA overlay	8 Months
3A	<ul style="list-style-type: none"> Construction of main approach roadway Construct MSE walls and slope embankment Begin bridge construction with bridge abutments and piers 	Tamping, subgrade compacting, HMA overlay, pile driving	10 Months
3B	<ul style="list-style-type: none"> Complete new roadway construction Connect new roadway to existing Hively Ave Construct bridge deck Realign Lowell and Eddy Streets Reconstruction of intersections at Monger and Hively, Roosevelt and Hively, Warren and Hively, and Hazel Street and Hively 	Pavement removal, subgrade compacting, and HMA overlay	4 Months
4	<ul style="list-style-type: none"> Construct new Roosevelt Ave connection to Main Street Final modifications to Morton Ave, Garden Blvd, and Sterling/Hammond Ave 	Pavement removal, subgrade compacting, and HMA overlay	4 Months

Figure 2: Phase 1 Construction

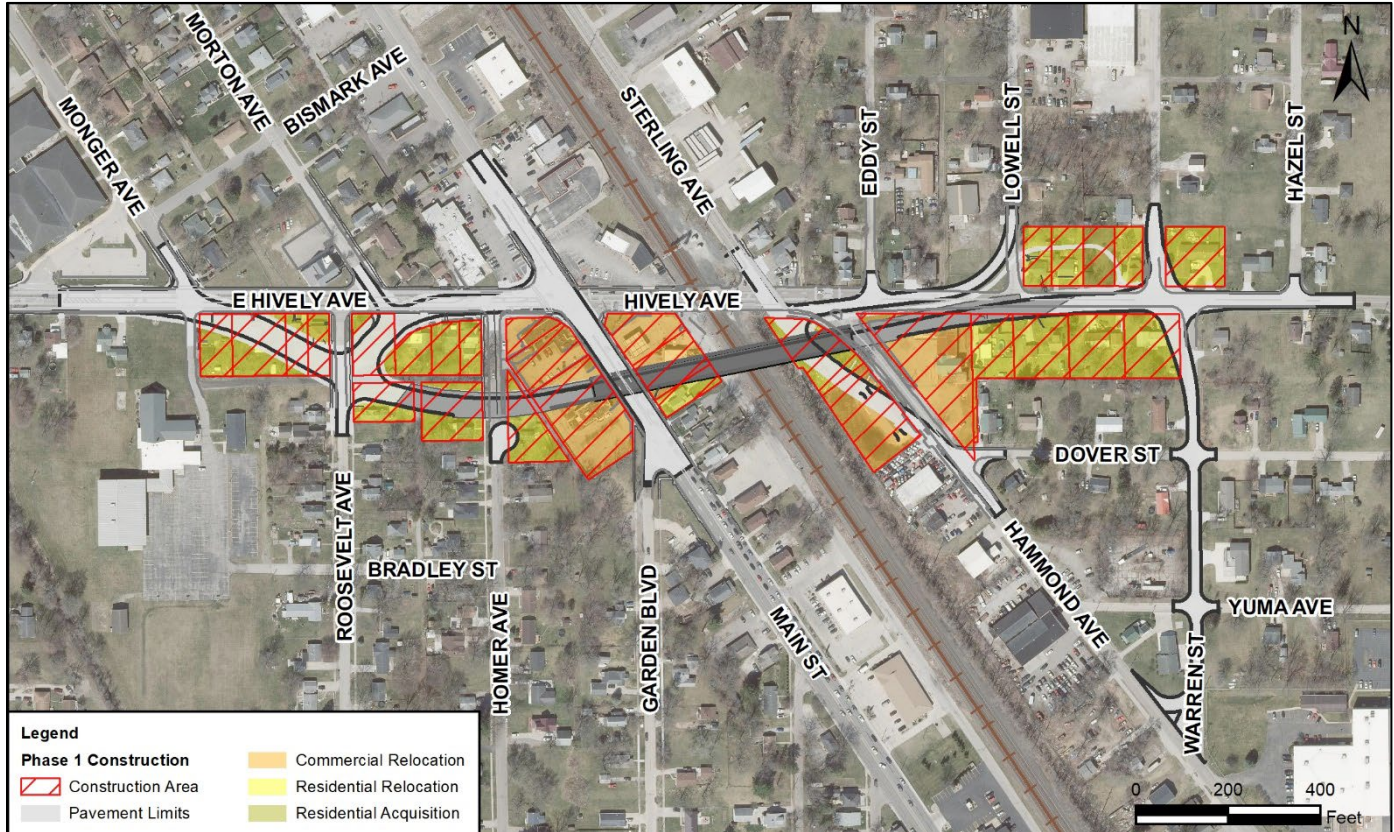


Figure 3: Phase 2 Construction

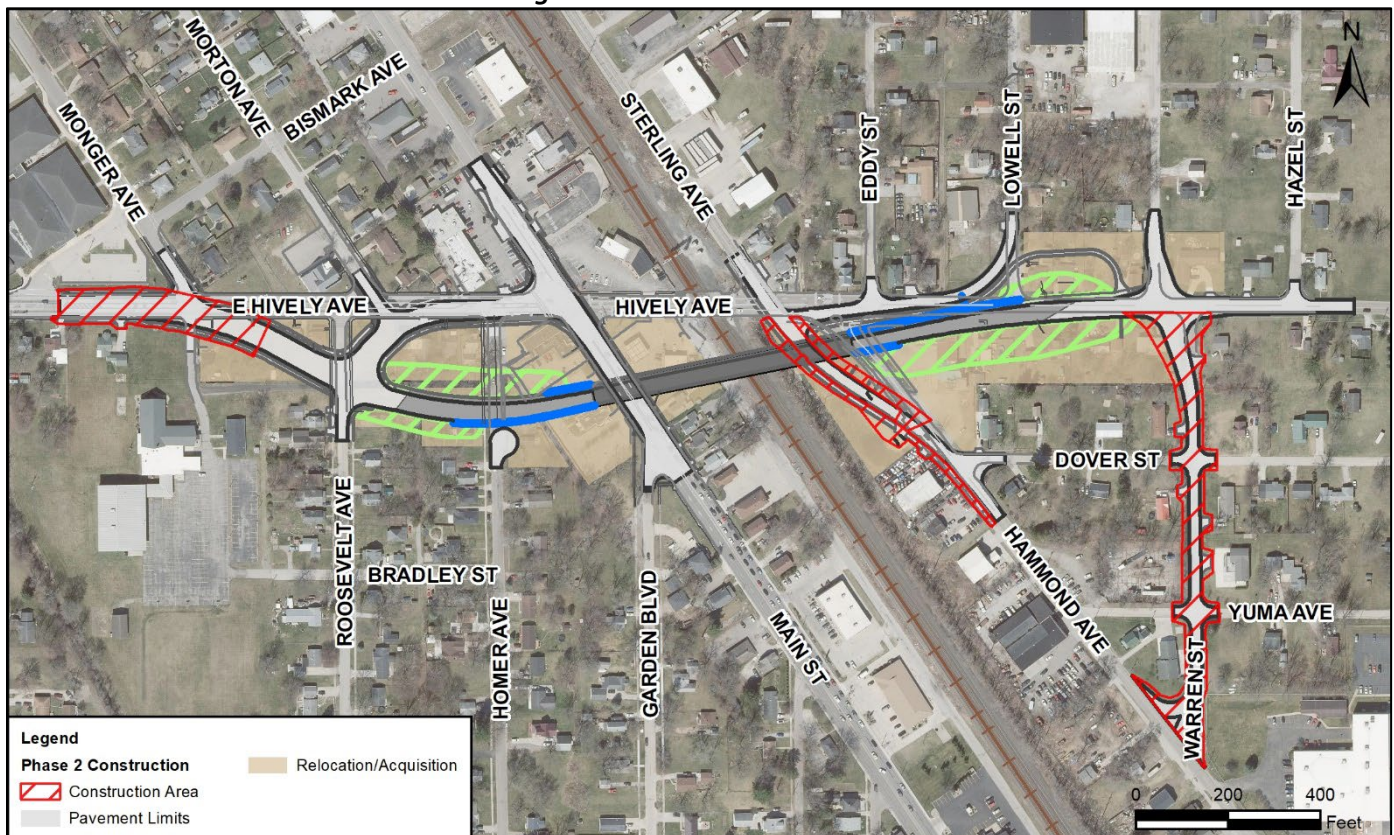


Figure 4: Phase 3A Construction

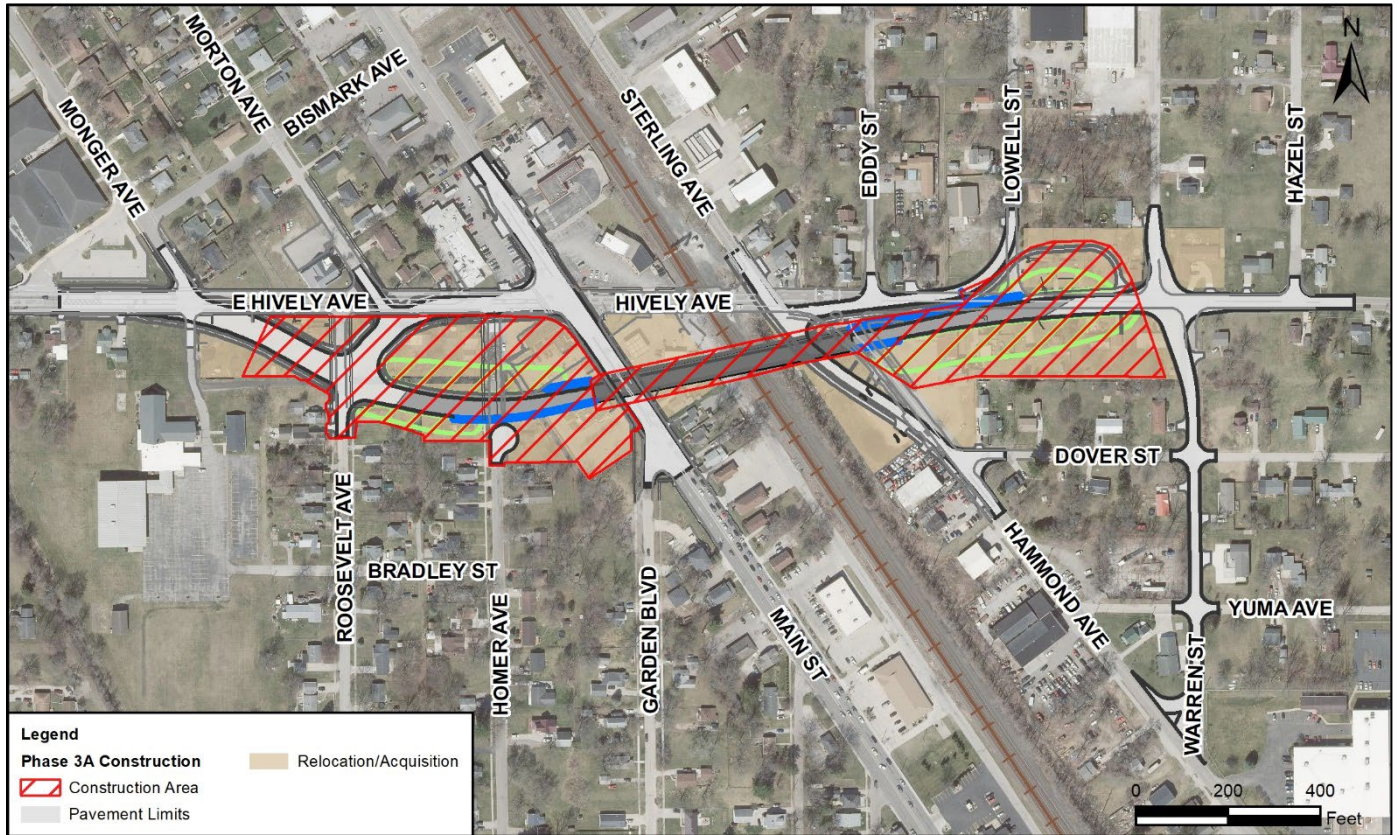


Figure 5: Phase 3B Construction

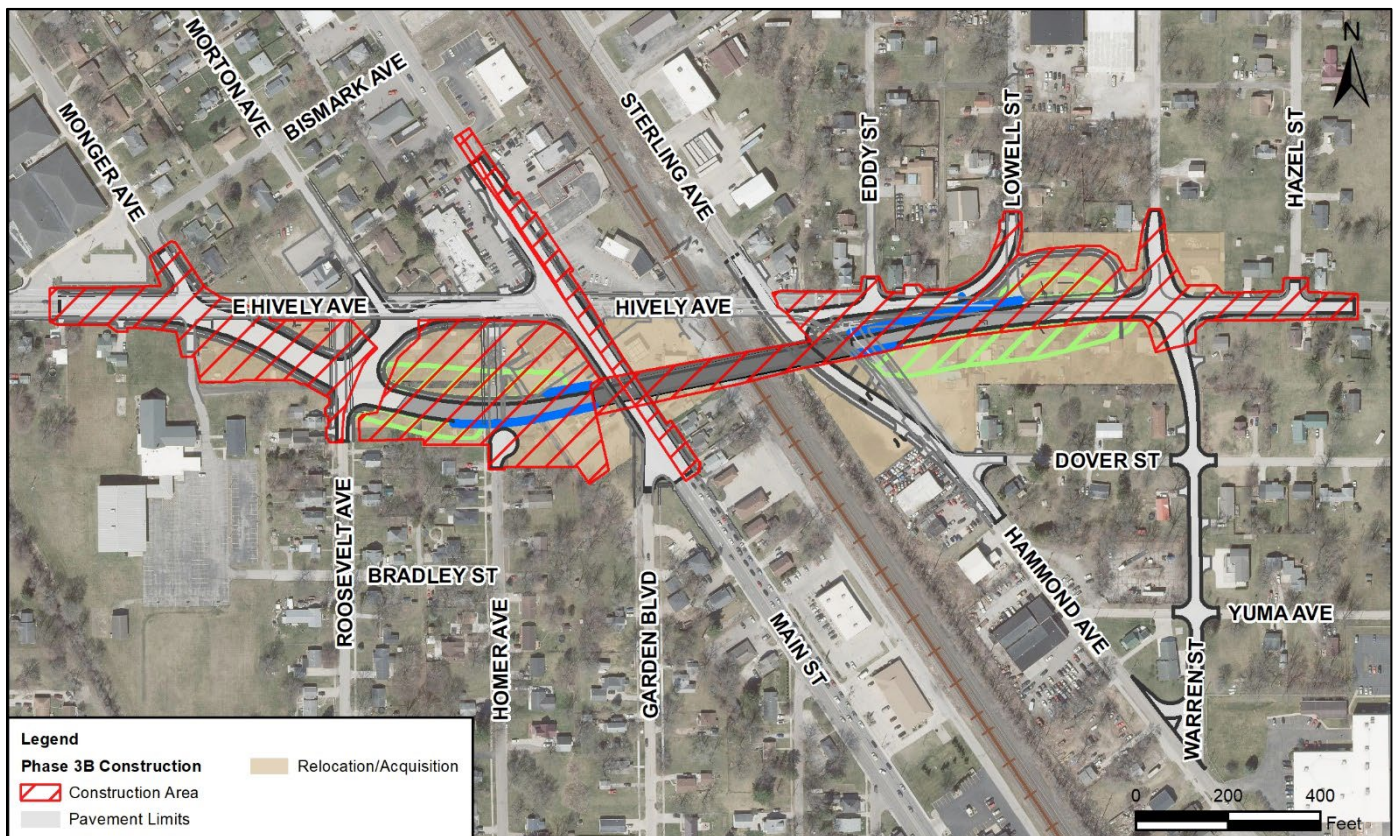
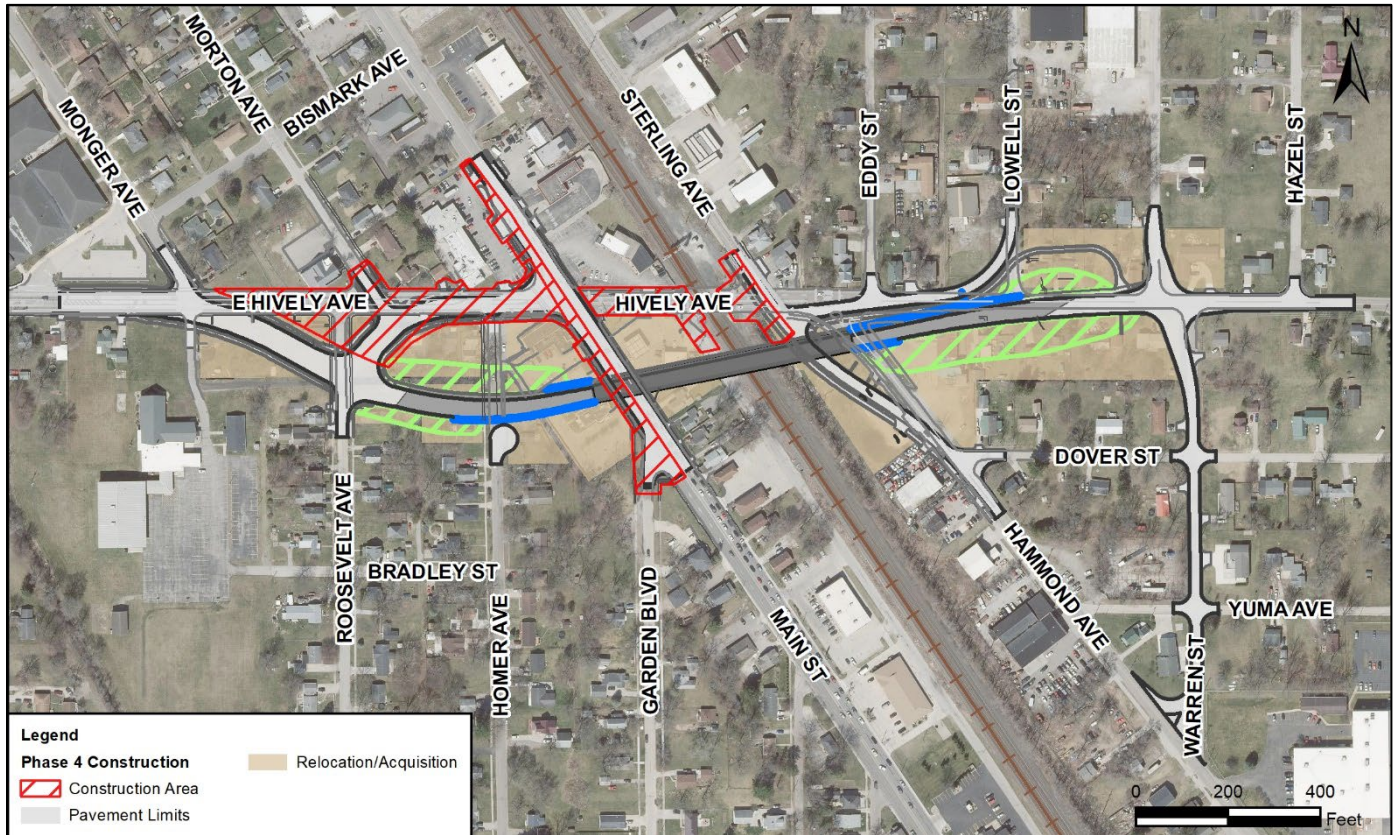


Figure 6: Phase 4 Construction



Potential Vibration Susceptibility

Construction activities often create temporary noise, dust, vibration, traffic detours, and other inconveniences. While these activities mostly pose a nuisance and are generally temporary in nature, there are situations in which vibration impacts can result in property damage to existing structures. There are many factors to consider including the duration and intensity of the activities based on the type of equipment used during construction, the proximity, age, and condition of structures located near the construction area, soils, etc. Vibration sensitivity concerns are often associated with historic properties or, on a rare occasion, with business services such as hospital or medical imaging or sensitive laser equipment. Vibration studies can help to assess vibration sensitivity and susceptibility and to determine whether vibration monitoring during construction is warranted.

INDOT's standard operating procedures for construction to address temporary noise and vibration associated with construction activities is to ensure compliance with local jurisdiction policies and procedures. Each project is assessed on a case-by-case basis and individual plans and processes are established to address the specific needs of each project and is the responsibility of the construction contractor. Vibration monitoring is often done by construction contractors as a proactive way to mitigate potential vibration damage claims. Potentially susceptible structures are inspected prior to construction and after construction and monitored during construction.

Concern about residential property damage resulting from vibration was received during the public hearing for the Environmental Assessment (EA). Based on the nature of the comment received, the context of the project study area, and the length and type of construction activities, the project study team has assessed potential vibration susceptibility. Best professional judgement was used to identify the extent of vibration caused by the various construction activities. The project team considered other DOT practices including Florida and Minnesota, as well as geotechnical information, and overall construction activities. The construction activities causing most of the vibration are associated with driving the bridge piles into the ground at each end of the bridge and in three pier locations in the center of the bridge. It is estimated that vibration could be felt up to 200 feet from each pile location as shown on Figure 7. The other construction activity causing vibration is the use of vibration rollers to compact the soil for the new roadway, embankments, and slope area. It is estimated that vibration could be felt up to 75 feet from the slope areas and roadway pavement edge as shown on Figure 7. Sixty (60) residential and community properties within the potential vibration areas are identified in Table 2.

Figure 7: Potential Construction Vibration Areas

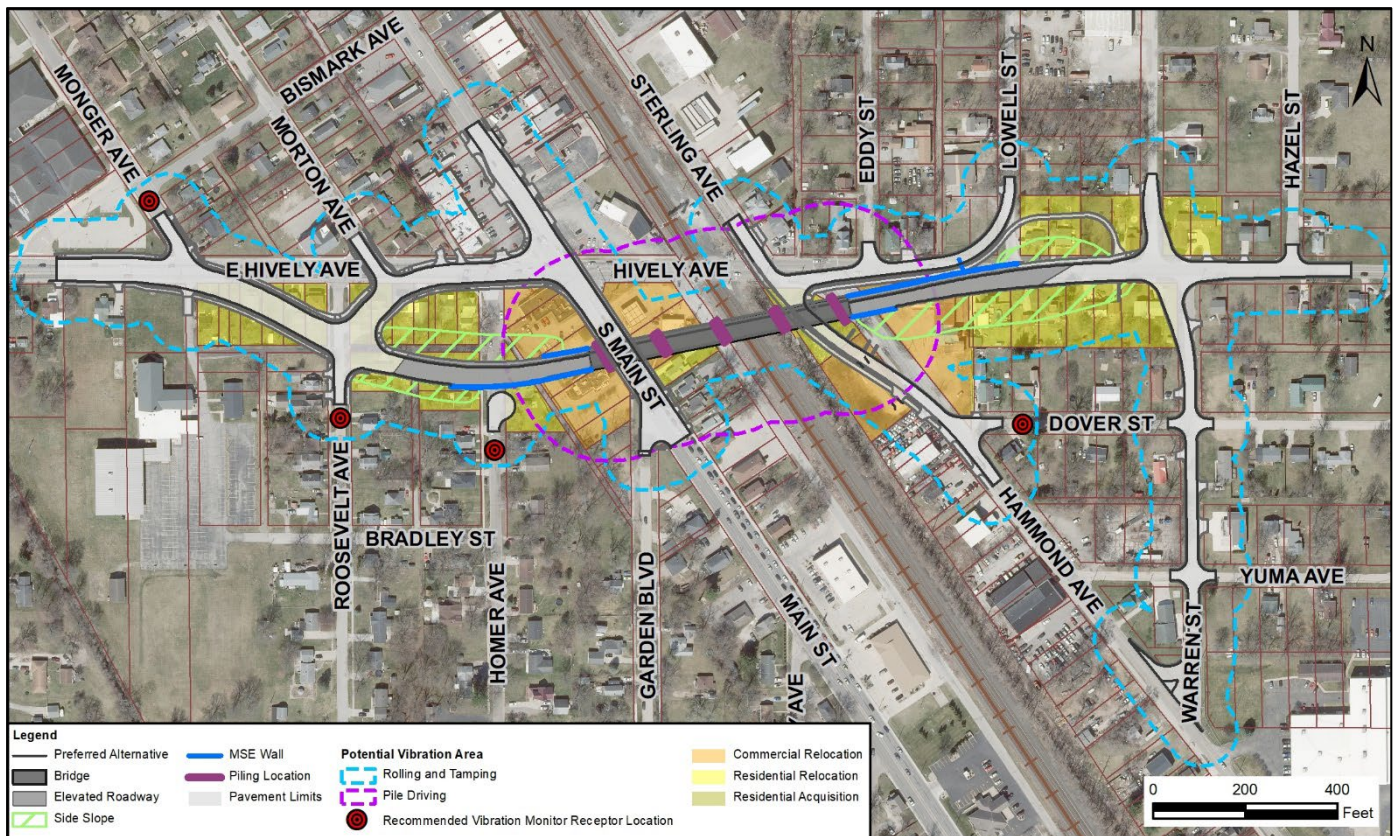


Table 2: Residential and Community-related Properties within Potential Vibration Area

Property Address	Parcel ID	Property Type
1100 E HIVELY	20-06-16-260-032.000-012	School
1101 E HIVELY	20-06-16-402-020.000-012	Residential
1107 E HIVELY	20-06-16-402-024.000-012	Residential
1111 E HIVELY	20-06-16-402-018.000-012	Church
1135 E HIVELY	20-06-16-402-015.000-012 20-06-16-426-023.000-012	Church
1702 E HIVELY	20-06-15-156-011.000-012 20-06-15-156-012.000-012	Residential
1704 E HIVELY	20-06-15-157-021.000-012	Residential
1706 E HIVELY	20-06-15-157-022.000-012	Residential
1905 E HIVELY	20-06-15-305-001.000-012	Residential
1916 E HIVELY	20-06-15-159-023.000-012	Residential
1919 E HIVELY	20-06-15-305-003.000-012 20-06-15-305-004.000-012	Residential
1922 E HIVELY	20-06-15-160-012.000-012	Residential
2007 E HIVELY	20-06-15-305-015.000-012	Residential
1808 DOVER	20-06-15-301-010.000-012 20-06-15-301-011.000-012	Residential
1902 DOVER	20-06-15-305-008.000-012 20-06-15-305-009.000-012	Residential
2800 HAMMOND AVE	20-06-15-302-001.000-012	Residential
2801 HAMMOND AVE	20-06-15-303-005.000-012 20-06-15-303-006.000-012 20-06-15-303-007.000-012	Residential
2815 HAMMOND AVE	20-06-15-303-008.000-012 20-06-15-303-009.000-012	Residential
2904 HAMMOND AVE	20-06-15-304-001.000-012 20-06-15-304-002.000-012	Residential
2911 HAMMOND AVE	20-06-15-303-015.000-012	Residential
2912 HAMMOND AVE	20-06-15-303-016.000-012	Residential
2913 HAMMOND AVE	20-06-15-303-017.000-012	Residential
2927 HAMMOND AVE	20-06-15-303-018.000-012	Residential
3003 HAMMOND AVE	20-06-15-355-001.000-012	Residential
3007 HAMMOND AVE	20-06-15-355-002.000-012	Residential
2719 HOMER	20-06-16-427-021.000-012	Residential
2720 HOMER	20-06-16-432-010.000-012	Residential
2733 HOMER	20-06-16-427-022.000-012	Residential
2734 HOMER	20-06-16-432-011.000-012	Residential
2618 LOWELL	20-06-15-158-008.000-012	Residential
2625 LOWELL	20-06-15-157-019.000-012 20-06-15-157-020.000-012 20-06-15-157-023.000-012 20-06-15-157-024.000-012	Residential

Property Address	Parcel ID	Property Type
2644 MONGER AVE	20-06-16-278-001.000-012	Residential
2650 MONGER AVE	20-06-16-278-004.000-012	Residential
2649 MORTON AVE	20-06-16-278-010.000-012	Church
2664 MORTON AVE	20-06-16-279-006.000-012	Residential
2670 MORTON AVE	20-06-16-279-008.000-012	Residential
2676 MORTON AVE	20-06-16-279-009.000-012	Residential
2677 MORTON AVE	20-06-16-279-010.000-012	Residential
2713 ROOSEVELT	20-06-16-426-014.000-012	Residential
2715 ROOSEVELT	20-06-16-426-024.000-012	Residential
2716 ROOSEVELT	20-06-16-427-009.000-012	Residential
	20-06-16-427-010.000-012	
2716 ROOSEVELT	20-06-16-427-010.000-012	Residential
2719 ROOSEVELT	20-06-16-426-017.000-012	Residential
2720 ROOSEVELT	20-06-16-427-027.000-012	Residential
2665 S MAIN ST	20-06-16-279-015.000-012	Residential
2726 S MAIN ST	20-06-16-428-006.000-012	Residential
2730 S MAIN ST	20-06-16-428-007.000-012	Residential
2734 S MAIN ST	20-06-16-428-008.000-012	Residential
2805 S MAIN ST	20-06-16-433-002.000-012	Residential
2806 S MAIN ST	20-06-16-428-009.000-012	Residential
2807 S MAIN ST	20-06-16-428-010.000-012	Residential
2630 STERLING AVE	20-06-16-280-010.000-012	Residential
2636 STERLING AVE	20-06-16-280-009.000-012	Residential
2618 WARREN	20-06-15-159-009.000-012	Residential
2625 WARREN	20-06-15-158-019.000-012	Residential
2717 WARREN	20-06-15-301-015.000-012	Residential
2800 WARREN	20-06-15-306-017.000-012	Residential
2801 WARREN	20-06-15-302-011.000-012	Residential
1901 YUMA	20-06-15-307-001.000-012	Residential
1902 YUMA	20-06-15-307-002.000-012	Residential

Conclusion and Recommendations

As a response to public concern regarding the potential for vibrational impacts on residential properties during construction, the project study team has initially identified 60 residential and/or community-related properties immediately adjacent to the project's construction activities that may have the potential for vibration susceptibility. Heavy commercial and industrial properties were not recommended for vibration susceptibility consideration due to their long-standing proximity to the railroad, construction, and site related activities. The team also assessed potential vibration monitoring locations and recommends the following four (4) locations (Figure 7):

- Monger Avenue Area
- Roosevelt Avenue Area
- Dover Street Area
- Homer Avenue Area

Under the auspice of community impact, the project study recommends that INDOT consider adding an environmental commitment or technical provision to require the construction contractor to develop and implement a Vibration Monitoring and Control Plan (VMCP). The VMCP should include anticipated vibration-producing activities, potentially impacted receptors and establishing vibration limits as a proactive means to mitigate vibration damage claims. Nearby buildings would be inspected prior to and after construction and monitored during construction. Pre-construction and post-construction condition assessments are recommended for residential and community-related properties immediately adjacent to the most intense construction activities. The pre-construction survey should document the condition of the structure and all existing cracks to determine whether any new cracks appeared during construction. With active monitoring of vibration on the construction site the work can be ceased until the excessive vibration is mitigated by the contractor using different construction techniques.

Attachment I:

Project Commitments

Firm Commitments

1. If the scope of work or permanent or temporary right-of-way amounts change, the INDOT Environmental Services Division (ESD) and the INDOT District Environmental Section will be contacted immediately. (INDOT ESD)
2. It is the responsibility of the project sponsor to notify school corporations and emergency services at least two weeks prior to any construction that would block or limit access. (INDOT ESD)
3. Continued coordination will occur with the City of Elkhart for the Interurban Trolley Red Line bus route and flag stops. (INDOT ESD)
4. Flag bus stop, Stop 43, will be relocated with ADA compliant sidewalk connection and accessibility. (INDOT ESD)
5. A Phase II Environmental Site Assessment will need to be completed prior to Ready for Contracts. (INDOT SAM)
6. Continued coordination with the USEPA regarding project progress and USEPA review of the Phase II Environmental Site Assessment must be completed prior to Ready for Contracts. (INDOT ESD)
7. The tree removal will not occur in forested areas and these areas are demarcated on plans as areas to avoid. (INDOT ESD)
8. All trees to be removed are within 100 feet from an existing roadway and will be clearly marked and will be removed during the inactive bat season. (INDOT ESD)
9. Eight (8) feet sidewalk will be provided adjacent to Monger Elementary School. (INDOT ESD)
10. Continued coordination will occur with Monger Elementary School about MOT and construction activities. (INDOT ESD)
11. New signage will be added by the City of Elkhart for the Environmental Center based on continued coordination. (City of Elkhart)
12. Restripe and reconfigure parking lot based on continued coordination with El Rosal (Hispanic supermarket). (City of Elkhart)
13. Green space (pocket park) will be added to project in between Roosevelt Avenue and Hively Avenue and green space between newly created sidewalk and Hively Avenue on the eastside as identified in the Environmental Document. (INDOT ESD)
14. The duration of temporary occupancy of MapleHeart Trail must be less than the time needed for construction of the project. There will be no change in ownership of the land, no permanent adverse physical impacts, and will be restored to a condition which is at least as good as that which existed prior. Scope of the work must be minor, i.e., both the nature and the magnitude of the changes to the Section 4(f) property are minimal. There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis. There must be documented

agreement of the official(s) with jurisdiction over the Section 4(f) resource regarding the above conditions. (INDOT ESD)

15. New sidewalk will connect to the MapleHeart Trail. (INDOT ESD)
16. The acquisition and relocation program will be conducted in accordance with 49 CFR 24 of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended (Uniform Act). Relocation resources are available to all residents and businesses to be relocated by the project without discrimination. No person displaced by this project will be required to move from a displaced dwelling unless comparable replacement housing is available to that person. (INDOT ESD)
17. FHWA's Temporary Waiver for Alternate Replacement Housing Payment (RHP) procedures will be implemented for this project. (INDOT ESD)
18. All offers will be made in compliance with Indiana Code Title 32, Article 24 Eminent Domain. (INDOT ESD)
19. The INDOT Administrative Settlement process will be followed, and the Condemnation process will be followed if a mutual agreement cannot be met. Through the Administrative Settlement and Condemnation process, an owner may receive more than fair market value. (INDOT ESD)
20. When comparable replacement housing cannot be obtained based on fair market value, "Housing of Last Resort" provisions will be utilized by INDOT to secure a replacement dwelling that is decent, safe, and sanitary. Housing of last resort provisions are in place to provide additional and alternative assistance when comparable replacement dwellings are not identified and available within the monetary limits of property owners or tenants. (INDOT ESD)
21. Percentage Points, Increased Interest Rates, and Closing Cost are provided within the Uniform Act and will be paid in accordance with 49 CFR 24. (INDOT ESD)
22. A Spanish and Ukrainian translator will be provided, if requested, at meetings for one homeowner and one business owner as identified in the CSRS. (INDOT ESD)
23. One Section 8 tenant will be issued a notice of intent to acquire so that the tenant may use their relocation benefits as soon as possible. (INDOT ESD)
24. Four tenants have expressed interest in becoming homeowners. These tenants will receive assistance in using their relocation benefits as a down payment on a home. (INDOT ESD)
25. General AMM1: Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable AMMs. (USFWS)
26. Tree Removal AMM1: Modify all phases/aspects of the project (e.g., temporary work areas, alignments) to avoid tree removal. (USFWS)
27. Tree Removal AMM2: Apply time of year restrictions April 1st through September 30th for tree removal when bats are not likely to be present, or limit tree removal to 10 or fewer trees per project at any time of year within 100 feet of existing road/rail surface and outside of documented roosting/foraging habitat or travel corridors; visual emergence survey must be conducted with no bats observed. (USFWS and IDNR-DFW)

28. Tree Removal AMM3: Ensure tree removal is limited to that specified in project plans and ensure that contractors understand clearing limits and how they are marked in the field (e.g., install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits). (USFWS)
29. Tree Removal AMM4: Do not remove documented Indiana bat or NLEB roosts that are still suitable for roosting, or trees within 0.25 mile of roosts, or documented foraging habitat any time of year. (USFWS)
30. Lighting AMM1: Direct temporary lighting away from suitable habitat during the active season. (USFWS)
31. Lighting AMM2: When installing new or replacing existing permanent lights, use downward-facing, full cut-off lens lights (with same intensity or less for replacement lighting); or for those transportation agencies using the BUG system developed by the Illuminating Engineering Society, be as close to 0 for all three ratings with a priority of “uplight” of 0 and “backlight” as low as practicable. (USFWS)
32. A Bat Structure Assessment by a qualified individual must be completed prior to demolition of any structure. Inspection of the structure should check for the presence of bats or birds. If signs of bats or birds are documented during this inspection, the INDOT District Environmental Manager must be contacted immediately. (INDOT ESD)
33. MOT will be provided for the trail utilizing local side streets. The MOT for the trail detour will be provided in the Stage 3 plans. (INDOT ESD)
34. A reevaluation of the noise analysis will occur during final design. If during final design it has been determined that conditions have changed and noise impacts are identified, noise abatement will be evaluated at that time as to whether it is feasible and reasonable. (INDOT ESD)
35. Pile driving schedules will be coordinated with Monger Elementary School and will be prohibited during state required tests which happen twice a year. (INDOT ESD)
36. The City of Elkhart will monitor/adjust the new traffic signal to ensure queuing at the intersection is efficient for both the traveling public and the neighborhood. (INDOT ESD)
37. The turn radius will be evaluated at Warren, Sterling, and Yuma to ensure 105 feet trucks are accommodated. (INDOT ESD)
38. The construction contractor will develop and implement a Vibration Monitoring and Control Plan (VMCP). The VMCP should include anticipated vibration-producing activities, potentially impacted receptors and establish vibration limits as a proactive means to mitigate vibration damage claims. Residential and community-related properties that have the potential for vibration susceptibility, as identified in the VMCP, should be inspected prior to and after construction and monitored during construction. The pre-construction survey should document the condition of the structure and all existing cracks to determine whether any new cracks appeared during construction. With active monitoring of vibration on the construction site the work can be ceased until the excessive vibration is mitigated by the contractor using different construction techniques. (INDOT ESD)

39. Risk to foundation damage should be minimized. Contractors should choose staging areas based on what is identified in the VMCP. (INDOT ESD)
40. In accordance with the IDEM Uncontaminated Soil Policy, no reuse of excavated material and appropriate handling, removal, and disposal at approved non-hazardous waste landfill (or treatment facility) is required for excavated material of shallow soils (0-4 ft. bgs) at Phase II sites 23, 51, and 65 (SB 23-1, 51-1, 51-2, and 65-1), and subsurface soils (>4 ft. bgs) at site 51 (SB 51-2) (Phase II Figure 4-1). (INDOT SAM)
41. Any associated storm/groundwater or dewatering at Phase II sites 23, 51, and 65 should be implemented as shown on project plans and provisions. (EPA)
42. Contractors working on excavation should be made aware of the location of all hazardous material sites in case foul odors or oil sheens are encountered during construction. Contingency plans should be created to handle such situations should they be encountered (EPA)
43. Any excavation taking place at Phase II sites 23, 51, and 65 (SB 23-1, 51-1, 51-2, and 65-1) areas will have the soil removed and properly disposed of and the soil will be replaced with clean fill material. (EPA)
44. Any excavation requiring to be filled is to be done so with clean fill per all applicable local and state requirements. This is especially true for areas identified to have contamination present (i.e. Arsenic). (EPA)
45. Contractors and engineers should be made aware that the area where work is to be performed overlies a federally recognized Sole Source Aquifer. Pile installation should be designed to limit potential for introduction (during installation) or migration (via preferential pathway if not adequately sealed around the piles) of any contaminants. (EPA)
46. Prevent creating new preferential pathways down to the aquifer, particularly where probable or known soil/groundwater contamination exists. (EPA)
47. Provide any relevant public inquiry regarding the environmental or aquifer impacts of this project to the EPA; note that review of additional Citizen Concerns would not necessarily "re-open" SSA review unless additional project information is presented which significantly changes EPA's understanding of the project on which our recommendations/review were based. (EPA)
48. Contingency plans should be in place so that the project engineer and all relevant officials are made aware if contact with groundwater is made and take the proper dewatering steps that may be needed. Precautions should be taken when dewatering is conducted (e.g. to control any contaminants in the storm/groundwater prior to discharge). (EPA)
49. Pile installation should be designed to limit potential for introduction (during installation) or migration (via preferential pathway if not adequately sealed around the piles) of any contaminants. (EPA)

50. INDOT Geotechnical Services Division should be made aware of the Sole Source Aquifer Status of the area before approval of the pile construction plans/methods. (EPA)
51. It is important to incorporate the routine inspection of storm water management systems. (EPA)
52. Although this is not in a Well Head Protection of Source Water Protection Area, there are Private Wells present per this site ([Water Well Viewer \(arcgis.com\)](#)). Water wells from Water Well Viewer as of 10/05/2022 will be identified on the project plans. However, it will be the contractor's responsibility to perform field checks to identify any known/unknown water well locations within the project boundary so that trucks/equipment don't damage the wells and so that contractors are aware of the potential conduits for contamination to the aquifer. The purpose is also to inspect wells both inside of and near the project boundary (within 0.25 miles) before, during, and after demolition to be sure that no unintended disturbance was caused. (EPA)
53. Any wells in close proximity to the project will be either properly abandoned or protected to avoid disturbance or contamination. It is anticipated that three to six wells will be abandoned, based on the current proposed relocations. The exact number will be determined during the right-of-way acquisition phase of the project. (EPA)
54. Wetland areas should be avoided when staging for construction and should not be used for the temporary storage of any chemicals or fuels during the construction period. (EPA)
55. The contractor must avoid placing fueling, staging and wash-out areas within the eastern residential area whenever possible. (EPA)
56. Town officials and long-term maintenance contractors and engineers (City of Elkhart) should be made aware that conservative salting practice recommendations were a part of the projects SSA Review process. (EPA)
57. Demolition and/or construction waste is to be removed from the site in compliance with relevant federal, state, and local law (i.e. legal disposal). (EPA)
58. Adherence to the Material Handling and Spill Prevention Control, SPCC Plan under IDEM's Rule 5 Permit, and BMPs including secondary containment and routine inspections will be required. (EPA)
59. The SSA Review of this project is based on the given scope of work. Should amendments to scope of work be made that change the interpretation and recommendations made in the SSA review, please bring this to EPA's attention so that the review can be amended as needed. (EPA)

For Consideration

60. Do not clear trees or understory vegetation outside the construction zone boundaries. (USFWS)
61. Revegetate all bare and disturbed areas with a mixture of grasses (excluding all varieties of tall fescue) and legumes as soon as possible upon completion; low endophyte tall fescue may be used in the ditch bottom and side slopes only. (IDNR-DFW)

62. Minimize and contain within the project limits all tree and brush clearing. (IDNR-DFW)
63. Plant five trees, at least 2 inches in diameter-at-breast height, for each tree which is removed that is ten inches or greater in diameter-at-breast height. (IDNR-DFW)
64. The City of Elkhart in conjunction with INDOT must be prepared to adapt their policies to allow home buyers to secure new homes. It has been typical for relocation claims to take 45-60 days to be paid, but this slow turnaround will close prospective buyers out of the market. The agency must be willing to adapt their process to make funds available sooner and make acquisition and relocation payments more quickly. Also, purchase comparables and prospective replacement homes are selling so quickly and home prices increasing so rapidly that the agency must consider allowing agents to increase relocation payments by performing new comparables searches and recalculating relocation benefits to make new homes affordable. (INDOT ESD)
65. If the Samples family finds a suitable replacement before the offer is made, an exception may be made to offer their relocation benefits early. (INDOT ESD)
66. The City of Elkhart and INDOT must be prepared to adapt their policies to allow tenants to rent or purchase homes quickly. They must be willing to make relocation payments as quickly as possible rather than the usual 45-60 days. Also, rental comparable and prospective properties rent so quickly that the agency must consider allowing agents to “re-comp” and increase relocation payments to make new rentals affordable. (INDOT ESD)