

Appendix A:

Purpose and Need Supporting Documentation

INTERNATIONAL

To: File

From: Tom Vandenberg, PE, PTOE, Traffic Engineer, Michael Baker International

Date: February 9, 2022

Subject: Hively Avenue Overpass Purpose and Need Traffic Data Support

Introduction

The following provides supporting traffic data for the purpose and need of the Hively Avenue Overpass Project. The railroad grade separation project is located on Hively Avenue at the Norfolk Southern Railroad between Sanders Avenue and Clayton Avenue. This memorandum documents grade separation criteria, the crash history at the nearby intersections due to the railroad at-grade crossing, and other traffic analysis.

FHWA Guidelines to Warrant Grade Separation

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

Table 1 - FHWA Warrants for Grade Separation

Category	Criteria	Hively Avenue & Norfolk Southern Railroad Crossing
Number of trains	An average of 75 or more trains per day	This location has an estimated 70-100 trains per day, with an average of 85 trains per day, at a maximum allowable train speed of 79 mph
Expected crash frequency	The expected crash frequency exceeds 2% per year	This location has an expected crash frequency of 5.22% per year
Vehicle delay	Vehicle delay exceeds 30 vehicle-hours per day	This location has an estimated 50 to 200 vehicle-hours of delay per day

Number of Trains and Expected Crash Frequency

The U.S. Department of Federal Railroad Administration (FRA) provides a Web Accident Prediction System to provide data on crash potential of at-grade railroad crossings along with estimates of trains per day and allowable speeds for trains through the crossing. There have not been any accidents at the Hively Avenue and Norfolk Southern Railroad crossing, however, the crash prediction value is over 5% per year as shown in the table below.

Table 2 - Expected Crash Frequency

At-Grade Crossing	Trains per Day*	Maximum Allowable Train Speed (mph)	Accident Prediction Value (shown as percent chance of collision per year)
Hively Avenue & Norfolk Southern Railroad	85	79	5.22%

*on average

Estimated Vehicle Delay

It's time-consuming to collect the daily vehicle delay data at an at-grade railroad crossing as you would need to physically be on-site all day in order to:

- Record all of the times throughout the day that the railroad crossing gate is down
- Then count the number of vehicles that are waiting during that time period

Also, on any given day, there may be more or less trains on that specific day than on average due to the variable change in train schedules. Vehicle traffic can fluctuate, too. Therefore, an estimate has been made for the daily vehicle delay at the Hively Avenue crossing based on readily available data. This includes the following:

- The number of trains on average per day: 85 trains per day
- The average annual daily traffic (AADT) along Hively at the crossing: 6,000 vehicles per day
- A typical gate down time for at-grade crossings: 5 minutes

From these values, an estimate can be made based on the following assumptions:

- Typical PM peak hour traffic volume is 10% of AADT: 600 vehicles per PM peak hour
- Number of trains per PM peak hour (85 trains / 24 hours): 4 trains per PM peak hour
- Typical gate time during PM peak hour: 5 minutes

This equates to an estimated vehicle delay of 200 vehicle-hours during just the PM peak hour. It would then stand to reason that even with this simple estimate, the vehicle delay most likely exceeds well over 30 vehicle-hours throughout the entire day. Even if there was just one (1) train during the PM peak hour, that would be an estimated 50 vehicle-hours of delay during just the PM peak hour alone. Or, if the gate down time was just three (3) minutes long and there was just one (1) train during the PM peak hour, this would be exactly 30 vehicle-hours of delay during just the PM peak hour. One (1) train crossing was observed from video collected at a nearby intersection which showed a gate down time of four (4) minutes. Therefore, it is extremely likely that the Hively Avenue at-grade railroad crossing creates over 30 vehicle-hours of delay per day.

It should also be noted that a gate down time of 3 minutes or more would be equivalent to a level-of-service "F" at an intersection, which would be an unacceptable capacity level-of-service for an intersection. Intersections with a vehicle delay of 1 minute or more result in a level-of-service "F".

Crash History Due to At-Grade Crossing

The crash history data was reviewed along Hively Avenue at the intersections adjacent to the at-grade railroad crossing. Crash history data was provided by the Michiana Area Council of Governments (MACOG). The purpose of the review was to determine the number of crashes that have occurred when the crossing gate is down and vehicles are waiting for a train. The following summarizes the crash history data review.

- Crash data date range: January 2015 to December 2019 (5-year history)
- Seven (7) crashes were due to the railroad crossing over the 5-year period. This averages to one (1) to two (2) crashes per year due solely to the at-grade railroad crossing.
- The crashes were typically vehicles being rear-ended or crashes due to vehicles attempting to back-up and make u-turns. One (1) crash involved the stop arm bar of the gate coming down on a vehicle. However, there were no vehicle-train collisions.

Based on the review of the crash history data, it is anticipated that providing grade separation of the railroad crossing will eliminate one (1) to two (2) crashes per year at the nearby intersections along Hively Avenue.

The following table lists the crash history data provided by MACAG for crashes at the nearby intersections that were due to the railroad crossing.

Table 3 - Summary of Crashes Due to Hively Avenue Railroad Crossing

Master Record Number	Number of Vehicles Involved	Crash Narrative
902877908	2	D1 stated he was traveling eastbound on Hively Ave approaching V2 which was stopped in traffic waiting for a train. D1 stated that V2 must have rolled backwards into his vehicle striking the front bumper of V1. D2 stated that she was sitting in traffic stat
902910855	2	D1 stated that he was in the inside eastbound lane of E. Hively stopped for a train at the crossing east of Main St. When the train stopped D1 reversed to turn around and did not see V2 behind him in his blind spot and backed into V2. D2 stated he was in t
903282258	2	D1 said he was traveling east on Hively AVE east of Main St. He said as he approached the railroad tracks the warning lights began to flash and the railroad crossing arms began to move downward. He said he then backed up in-order to avoid being struck by
903216791	2	On 09/07/2018 at 1507 hrs I, Ptlm Watkins # 460, was dispatched to a vehicle accident without injuries at the intersection of Hively Ave. And Hammond Ave. Vehicle 1 stated that she was waiting on a train to cross the tracks and was stopped in traffic on E
903223357	2	D1 advised she was West on Hively Avenue approaching the railroad tracks near the intersection of Sterling Avenue when the train crossing arms began to lower. D1 advised she did not want her vehicle to be struck by the railroad crossing arms so she back u
903341781	2	D2 stated that the his vehicle (V2) was stopped behind V1 just to the east of the intersection. D2 stated that the rail road crossing arms were down for the train that was approaching. D2 stated that the driver of V1 placed the car into reverse and backed
903344469	1	V1 was stopped near the west side of the RR crossing on E Hively Ave, near the intersection of S Main St Elkhart, IN. V1 was unable to move due to traffic that was stopped for a red light. The crossing gate for the RR crossing began to come down for a tra - <i>MACOG NOTES: Single vehicle involved. The stop arm for the railroad crossing came down on a vehicle.</i>

Additional Traffic Analysis for Selected Alternative

Traffic data was collected, forecasted, and analyzed to ensure that roadway network of the selected alternative would operate safely and efficiently. Traffic turning movement volume counts were collected at the Hively Avenue intersections with Monger Avenue, Main Street, Sterling Avenue, and Hammond Avenue. Turning movement counts were supplemented with multi-day tube counts on the lower volume roads in the study area. Traffic was then forecasted for the Opening Year (2024) for the selected alternative, the Design Year (2044) for the selected alternative, and then Year 2044 for the No Build scenario. Traffic forecasting was performed based on data provided by the MACOG. The collected traffic data, forecasting, and analyze is further documented in the engineer’s report. Below is a brief summary table for the capacity level-of-service for the intersections near the railroad crossing.

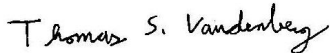
Table 4 - Intersection Level-of-Service (PM Peak Hour)

Intersection	Opening Year 2024	Design Year 2044 No Build	Design Year 2044 Build
E. Hively Avenue & Monger Avenue	C	C	C
E. Hively Avenue & Roosevelt Avenue	C	C	C
E. Hively Avenue & S. Main Street	D	E	C (Hively & new connector road)
E. Hively Avenue & Sterling Avenue	C	F	A (3-legged intersection)
E. Hively Avenue & Warren Street	B	B	D
Dover Street & Hammond Avenue	A	B	B
Dover Street & Warren Street	A	A	A

Modifications were needed at the nearby intersections in order to grade-separate the railroad crossing (in order to elevate Hively Avenue over the railroad). This resulted in some intersections being reconfigured to accommodate the redistribution of traffic.

The table above shows that the nearby intersections will still experience level-of-service “D” or better after the railroad is grade separated for the 20-year traffic horizon. This means that the grade-separation project will not adversely impact the capacity operations of the nearby intersections as they will continue to operate at good levels of service.

Regards,



Tom Vandenberg, PE, PTOE
Traffic Engineer
Michael Baker International

Appendix B:

Graphics



Project Location

E INDIANA AVE

STERLING AVE

MAIN ST

ROY'S AVE
FRANCES AVE

HIVELY AVE

PLEASANT PLAIN AVE

Project Location

HIVELY AVE

20

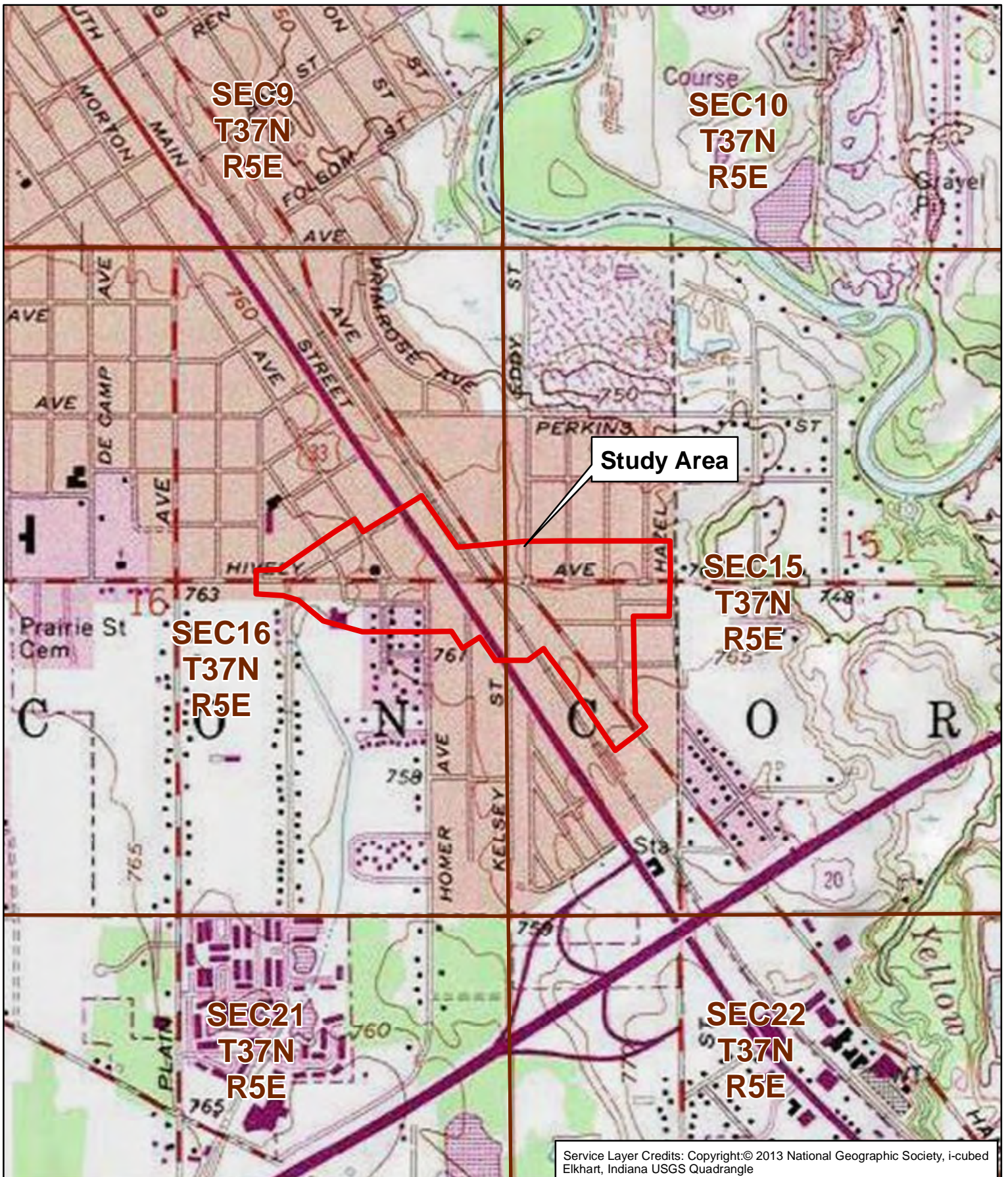
Concord Mall



Legend



★ Project Location Des. No. 1801933

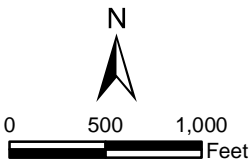
0 0.125 0.25
B1 Miles



Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed Elkhart, Indiana USGS Quadrangle

Legend

-  Study Area
-  PLSS

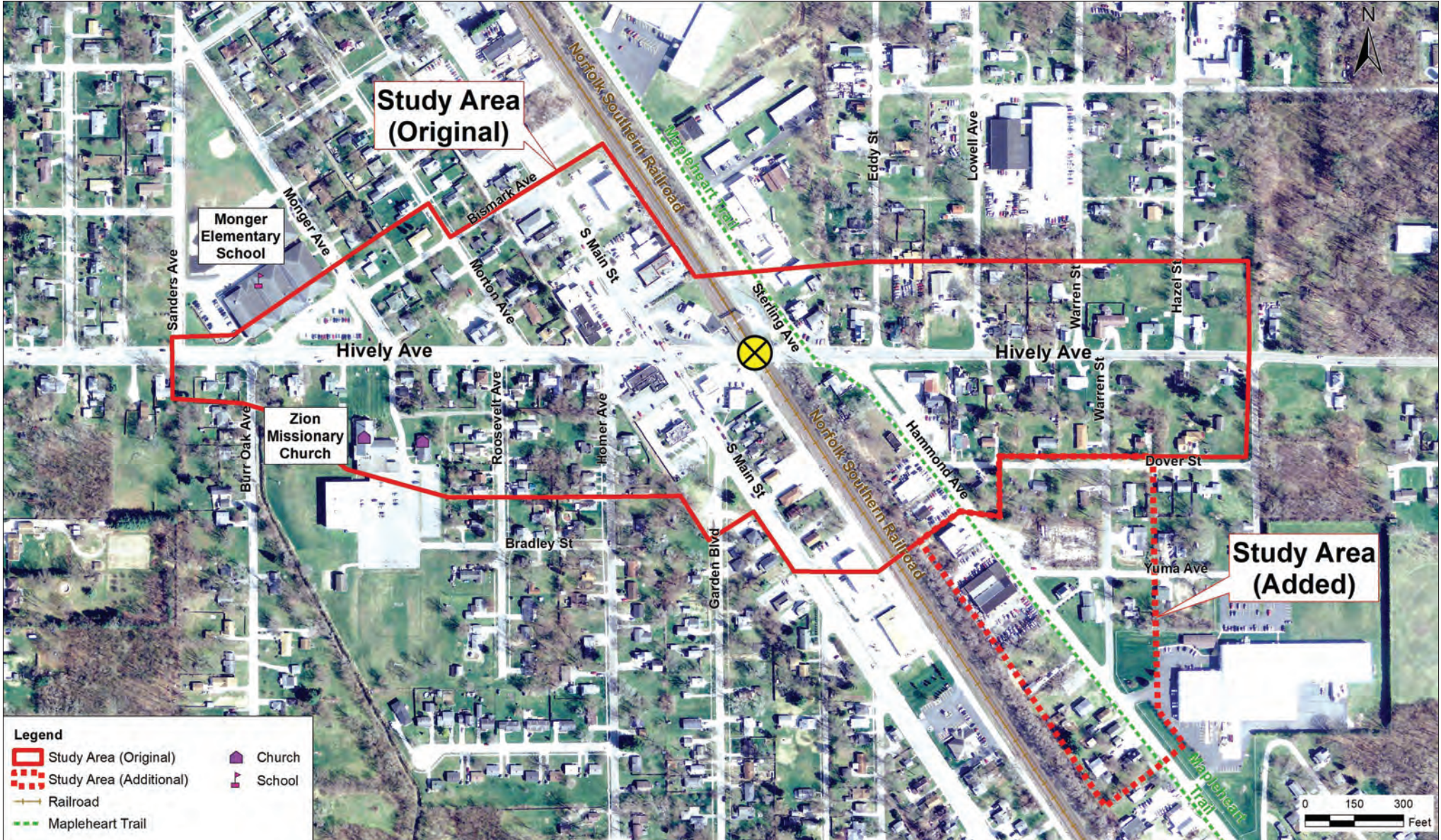


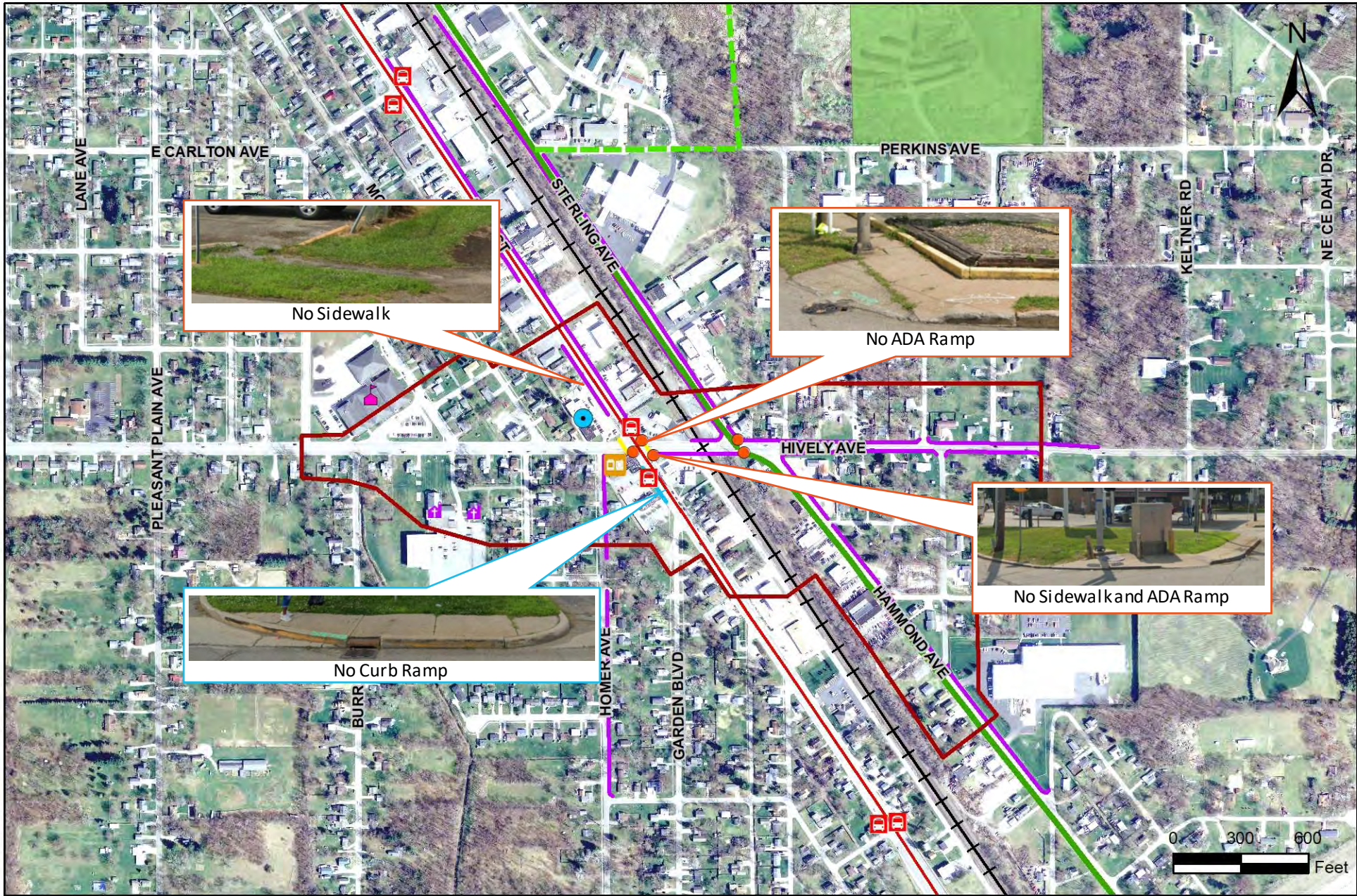
**Hively Avenue
Grade Separation Study
Elkhart County, Indiana
USGS Project Location Map**

AREA NETWORK



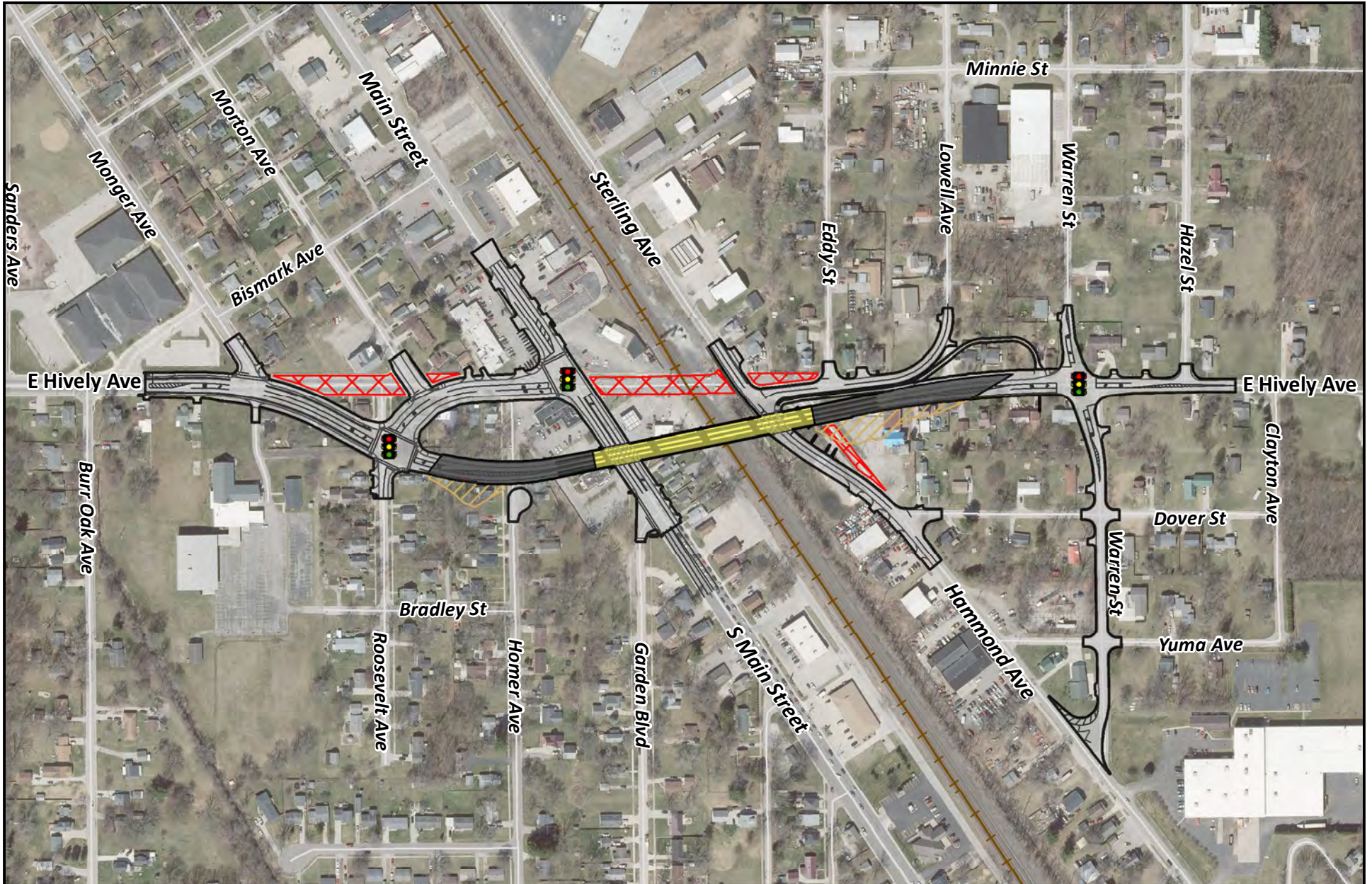
STUDY AREA











Legend

- | | | | | | |
|------------------|--------------------------|----------------------|------------|------------------------------|--------------|
| Study Area | Red Elkhart-Goshen Route | Environmental Center | Laundromat | Existing Deficiencies | No Curb Ramp |
| Trail (Existing) | Red Elkhart-Goshen Stop | Church | School | No ADA Ramp | No Sidewalk |
| Trail (Proposed) | Grocery Store | | | No Crosswalk | |



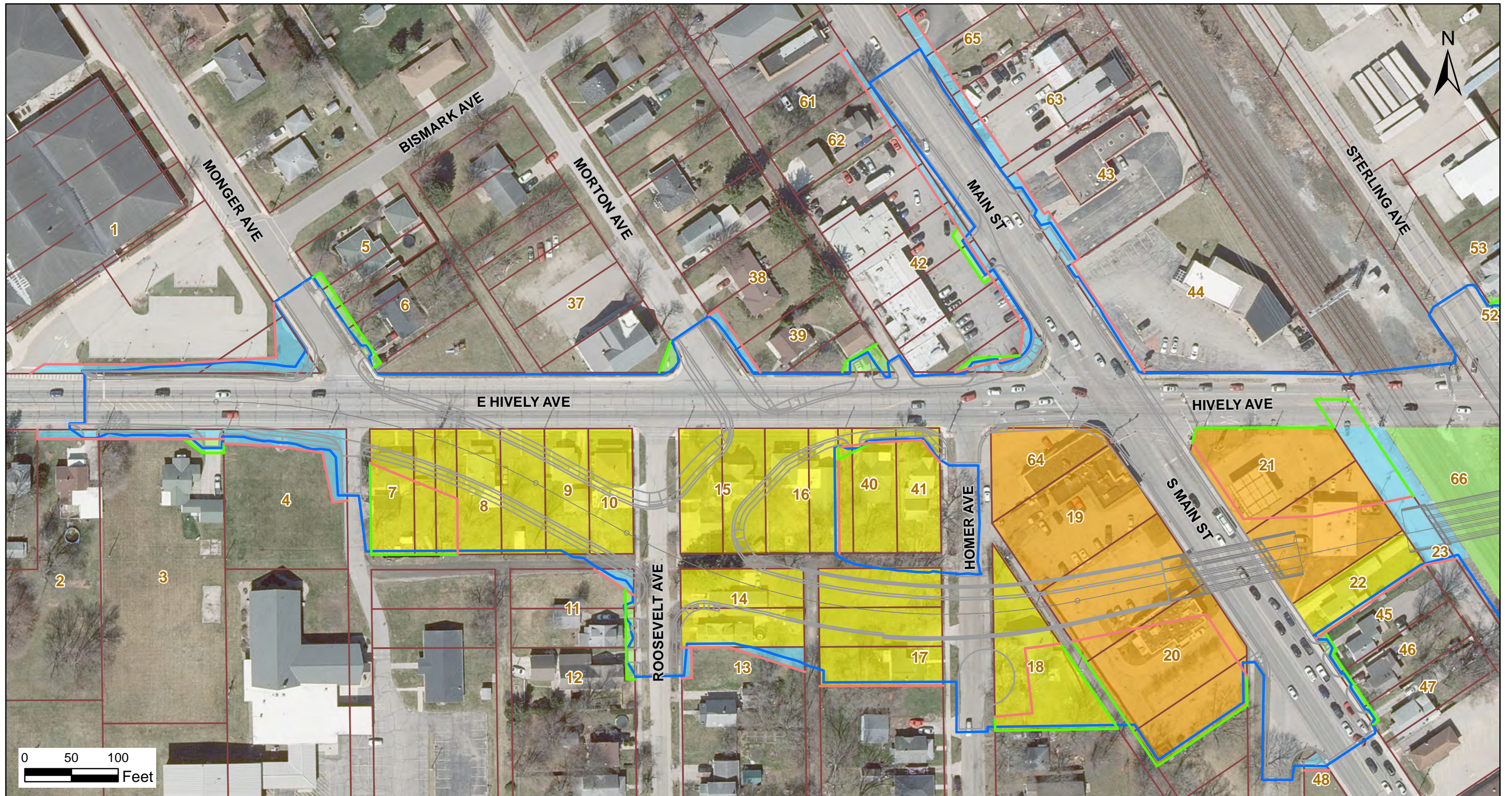
Legend

 Bridge	 Grade Elevation	 Railroad
 Elevated Roadway	 Pavement Removal	
	 Pavement Limits	

Hively Avenue Overpass
Des. No. 1801983
Elkhart County, Indiana
Preferred Alternative

PREFERRED ALTERNATIVE TRAVEL MOVEMENTS

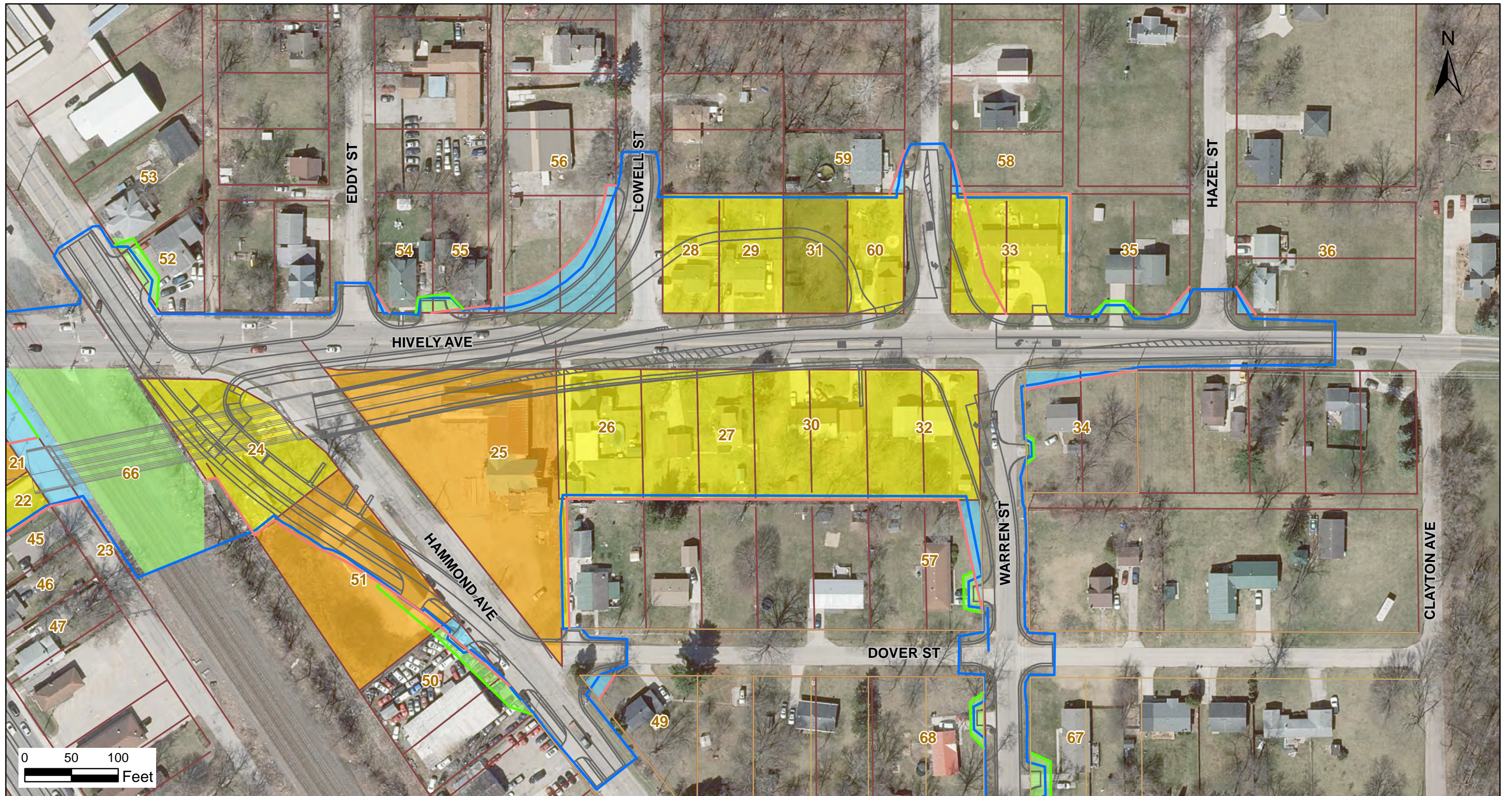




Legend			
— Preferred Alternative	— Proposed RW	Commercial Relocation	Permanent R/W
— Construction Limits Preferred	— Temporary RW	Residential Relocation	Temporary R/W
— Property Line		Residential Acquisition	

Hively Avenue Overpass Project
Des No. 1801983
Elkhart, Indiana
Preferred Alternative Property Impacts

Sheet 1 of 3



- Legend**
- Preferred Alternative
 - Construction Limits Preferred
 - Property Line
 - Proposed RW
 - Temporary RW
 - Commercial Relocation
 - Residential Relocation
 - Residential Acquisition
 - Permanent R/W
 - Temporary R/W

Hively Avenue Overpass Project
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 Sheet 2 of 3



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 - Residential Relocation
 - Residential Acquisition
 - Permanent R/W
 - Temporary R/W

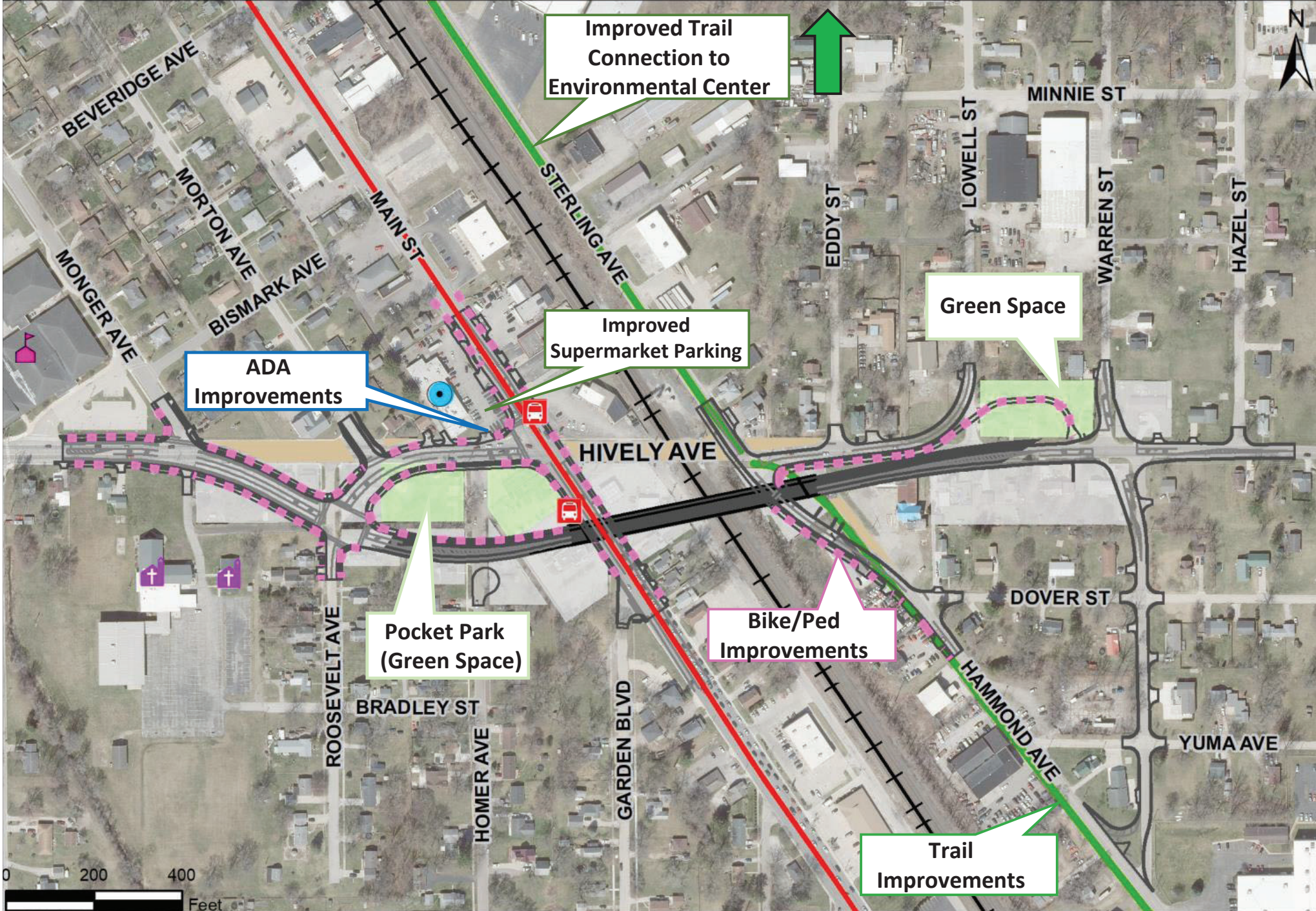
Hively Avenue Overpass Project
Des No. 1801983
Elkhart, Indiana
Preferred Alternative Property Impacts
 Sheet 3 of 3

**Hively Avenue Overpass Project
Preferred Alternative Property Impacts**

Map Parcel ID	# Parcels	Parcel ID	Type of Impact	Landuse	Property Address	Property Owner	Relocation or Acquisition*	Residential		Commercial		Other	
								Permanent R/W	Temporary R/W	Permanent R/W	Temporary R/W	Permanent R/W	Temporary R/W
1	1	20-06-16-260-032.000-012	Permanent R/W	School	1100 E HIVELY AVE	Elkhart Community Schools	No					0.106	
2	1	20-06-16-402-024.000-012	Permanent R/W	Residential	1107 E HIVELY	Elsy M. Rodriguez de Quinonez	No	0.016					
3	1	20-06-16-402-018.000-012	Permanent and Temporary R/W	Church	1111 E HIVELY	Missionary Church	No					0.032	0.011
4	1	20-06-16-402-015.000-012	Permanent R/W	Church	1137 E HIVELY	Indiana Conference of the United Missionary Church, Inc.	No					0.087	
5	1	20-06-16-278-001.000-012	Temporary R/W	Residential	2644 MONGER AVE	Carlos Cuahuitzo	No		0.009				
6	1	20-06-16-278-004.000-012	Temporary R/W	Residential	2650 MONGER AVE	Mario & Reveca Galindo	No		0.017				
7	1	20-06-16-426-002.000-012	Residential Relocation	Residential	1207 E HIVELY	Rick A. Robinson, Lyle D. Snodgrass & Virginia J. Snodgrass	Relocation	0.216					
8	1	20-06-16-426-004.000-012	Residential Relocation	Residential	1215 E HIVELY	William L. & Kathy L. Davis	Relocation	0.361					
9	1	20-06-16-426-006.000-012	Residential Relocation	Residential	1219 E HIVELY	Michael & Nancy Bonewitz	Relocation	0.145					
10	1	20-06-16-426-007.000-012	Residential Relocation	Residential	1223 E HIVELY	Heap Song Pav	Relocation	0.145					
11	1	20-06-16-426-014.000-012	Permanent and Temporary R/W	Residential	2713 ROOSEVELT	Richard A. Crowe	No	0.014	0.013				
12	1	20-06-16-426-024.000-012	Temporary R/W	Residential	2715 ROOSEVELT	Derrick Simmons	No		0.007				
13	1	20-06-16-427-009.000-012	Permanent R/W	Residential	2714 ROOSEVELT	Alan L Kado Trustee & Diana M Kado Trustee	No	0.033					
14	1	20-06-16-427-008.000-012	Residential Relocation	Residential	2712 ROOSEVELT	Edwin Pineda & Nataly Cortes	Relocation	0.255					
15	1	20-06-16-427-026.000-012	Residential Relocation	Residential	1301 E HIVELY	Loyd Foust & Rosina Munakampe - Foust	Relocation	0.283					
16	1	20-06-16-427-003.000-012	Residential Relocation	Residential	1315 E HIVELY	Russell E. & Angela Johnson	Relocation	0.242					
17	1	20-06-16-427-019.000-012	Residential Relocation	Residential	2721 HOMER	Hudson Street Properties, LLC	Relocation	0.381					
18	1	20-06-16-432-009.000-012	Residential Relocation	Residential	2718 HOMER	Dennis L. & Kathy A. Mann	Relocation	0.303					
19	1	20-06-16-432-002.000-012	Commercial Relocation	Commercial	2703 S MAIN ST	Francis E. Hunter	Relocation				0.315		
20	4	20-06-16-432-003.000-012 20-06-16-432-004.000-012 20-06-16-432-005.000-012 20-06-16-432-006.000-012	Commercial Relocation	Commercial	2709 S MAIN ST	Champ 84 Enterprises, LLC	Relocation				0.761		
21	3	20-06-16-428-002.000-012 20-06-16-428-003.000-012 20-06-16-428-004.000-012	Commercial Relocation	Commercial	2700 S MAIN ST	The Southland Corporation	Relocation				0.579		
22	1	20-06-16-428-005.000-012	Residential Relocation	Residential	2722 S MAIN ST	Magdaleno G. & Margaret R. Reyes	Relocation	0.146					
23	1	20-06-16-428-019.000-012	Permanent R/W	Utility	S MAIN ST	Indiana Michigan Elect. Co.	No					0.144	
24	1	20-06-15-303-001.000-012	Residential Relocation	Residential	1605 E HIVELY	Rodolfo Castillo & Marilu Novoa	Relocation	0.397					
25	1	20-06-15-301-001.000-012	Commercial Relocation	Commercial	2700 HAMMOND AVE	World Business Lenders, LLC	Relocation				1.115		
26	2	20-06-15-301-002.000-012 20-06-15-301-003.000-012	Residential Relocation	Residential	1801 E HIVELY	Anthony R. & Pamela Moore	Relocation	0.315					
27	2	20-06-15-301-004.000-012 20-06-15-301-005.000-012	Residential Relocation	Residential	1815 E HIVELY	Dorothy J. Spaug Revocable	Relocation	0.384					
28	1	20-06-15-158-020.000-012	Residential Relocation	Residential	1802 E HIVELY	David Urrutia Alvarado	Relocation	0.177					
29	1	20-06-15-158-021.000-012	Residential Relocation (Landlocked)	Residential	1806 E HIVELY	Harvest Homes, LLP	Relocation	0.202					
30	1	20-06-15-301-007.000-012	Residential Relocation (Landlocked)	Residential	1823 E HIVELY	Leroy & Euba A. Robinson	Relocation	0.385					
31	1	20-06-15-158-022.000-012	Residential Acquisition (Landlocked)	Residential	1812 E HIVELY	Glen Devlyn Henderson	Acquisition	0.202					
32	1	20-06-15-301-008.000-012	Residential Relocation	Residential	1833 E HIVELY	Jason Ragsdale	Relocation	0.387					
33	1	20-06-15-159-021.000-012	Residential Relocation	Residential	1904 E HIVELY	Ernest C. Kyle	Relocation	0.378					
34	1	20-06-15-305-001.000-012	Permanent R/W	Residential	1905 E HIVELY	Imogene M. Young	No	0.029	0.005				
35	1	20-06-15-159-023.000-012	Permanent and Temporary R/W	Residential	1916 E HIVELY	Frederick D. & Mae N. Redding	No	0.008	0.011				
36	1	20-06-15-160-012.000-012	Permanent R/W	Residential	1922 E HIVELY	Susan K Elliot & John G. Gilbert	No	0.007					

**Hively Avenue Overpass Project
Preferred Alternative Property Impacts**

Map Parcel ID	# Parcels	Parcel ID	Type of Impact	Landuse	Property Address	Property Owner	Relocation or Acquisition*	Residential		Commercial		Other	
								Permanent R/W	Temporary R/W	Permanent R/W	Temporary R/W	Permanent R/W	Temporary R/W
37	1	20-06-16-278-010.000-012	Temporary R/W	Church	2649 MORTON AVE	Unique Outreach Ministry, Inc.	No						0.010
38	1	20-06-16-279-008.000-012	Permanent R/W	Residential	2670 MORTON AVE	Chad Miller	No	0.012					
39	1	20-06-16-279-009.000-012	Permanent and Temporary R/W	Residential	2676 MORTON AVE	Blanca E. Cardoso	No	0.023	0.008				
40	1	20-06-16-427-005.000-012	Residential Relocation	Residential	1319 E HIVELY	Dewayne & Ruby Miller	Relocation	0.190					
41	1	20-06-16-427-006.000-012	Residential Relocation	Residential	1321 E HIVELY	Marlin & Lois Martin	Relocation	0.144					
42	1	20-06-16-279-021.000-012	Permanent and Temporary R/W	Commercial	2693 S MAIN ST	Jorge Trejo	No			0.074	0.022		
43	1	20-06-16-276-056.000-012	Permanent R/W	Commercial	2680 S MAIN ST	Hydra Holdings LLC	No			0.039			
44	1	20-06-16-276-057.000-012	Permanent R/W	Commercial	2692 S MAIN ST	Midus Properties LLC	No			0.022			
45	1	20-06-16-428-006.000-012	Temporary R/W	Residential	2726 S MAIN ST	Gregory J. Johnson	No		0.009				
46	1	20-06-16-428-007.000-012	Temporary R/W	Residential	2730 S MAIN ST	Augustino & Maria Lacopo	No		0.007				
47	1	20-06-16-428-008.000-012	Temporary R/W	Residential	2734 S MAIN ST	Mark S. Crimi	No		0.003				
48	1	20-06-16-433-002.000-012	Permanent R/W	Residential	S MAIN ST	Pablo & Darlene Castenada	No	0.008					
49	1	20-06-15-302-001.000-012	Permanent R/W	Residential	2800 HAMMOND AVE	Michael McLachlan	No	0.011					
50	2	20-06-15-303-003.000-012 20-06-15-303-004.000-012	Permanent and Temporary R/W	Commercial	2737 HAMMOND AVE	Miriam E. Santiago	No			0.021	0.039		
51	1	20-06-15-303-002.000-012	Commercial Relocation	Commercial	2729 HAMMOND AVE	Pavel & Galina Kabardin	Relocation			0.560			
52	1	20-06-16-280-007.000-012	Temporary R/W	Commercial	2644 STERLING AV	Araceli Bonsubre-Weist	No				0.025		
53	1	20-06-16-280-009.000-012	Temporary R/W	Residential	2636 STERLING AV	Araceli Jimenez	No		0.006				
54	1	20-06-15-157-021.000-012	Permanent and Temporary R/W	Residential	1704 E HIVELY	Juan Grandos	No	0.003	0.007				
55	1	20-06-15-157-022.000-012	Permanent and Temporary R/W	Residential	1706 E HIVELY	William C. Smith & Kimberly A. Bottorff	No	0.005	0.010				
56	3	20-06-15-157-020.000-012 20-06-15-157-023.000-012 20-06-15-157-024.000-012	Permanent R/W	Residential	LOWELL	Consuelo Ceja	No	0.161					
57	1	20-06-15-301-015.000-012	Permanent and Temporary R/W	Residential		Henry Robinson	No	0.033	0.014				
58	1	20-06-15-159-010.000-012	Permanent R/W	Residential	2618 WARREN	Jeffery A Klein & Joann Albert JT Ten	No	0.008					
59	1	20-06-15-158-019.000-012	Permanent R/W	Residential	2625 WARREN	Carina Barron Alvino	No	0.008					
60	1	20-06-15-158-023.000-012	Residential Relocation	Residential	1818 E HIVELY	Rivera Manuel	Relocation	0.178					
61	1	20-06-16-279-014.000-012	Permanent R/W	Commercial	S MAIN ST	Anthony J. & Catherine A. Russo	No			0.008			
62	1	20-06-16-279-015.000-012	Permanent R/W	Residential	2665 S MAIN ST	Blanva Estrl Cardoso	No	0.008					
63	1	20-06-16-276-055.000-012	Permanent R/W	Commercial	2676 S MAIN ST	Blanva Estrl Cardoso	No			0.030			
64	1	20-06-16-432-001.000-012	Commercial Relocation	Commercial	2701 S MAIN ST	Marlin & Lois Martin	Relocation			0.172			
65	2	20-06-16-276-052.000-012 20-06-16-276-060.000-012	Permanent R/W	Commercial	2676 S MAIN ST	Advance Stores Company Inc	No			0.025			
66	1	20-06-16-503-002.000-009	Temporary R/W	Railroad		Norfolk Southern Railway Company	No						0.550
67	1	20-06-15-306-017.000-012	Temporary R/W	Residential	2800 WARREN	Teri A Dulworth	No		0.024				
68	1	20-06-15-302-011.000-012	Temporary R/W	Residential	2801 WARREN ST	Delgado Miguel Esparaza & Juan Maria Jasso Muniz	No		0.015				
69	1	20-06-15-302-010.000-012	Temporary R/W	Commercial	YUMA	Hughes Realty & Equipment Co Inc	No				0.004		
70	1	20-06-15-306-008.000-012	Temporary R/W	Commercial	2812 WARREN	DDOT Properties LLC	No				0.046		
71	1	20-06-15-307-001.000-012	Permanent R/W	Residential	1901 YUMA	Indiana to Texas Land Co. LLC	No	0.030					
72	2	20-06-15-307-008.000-012 20-06-15-308-001.000-012	Permanent R/W	Commercial	3040 HAMMOND AVE	Kobelco Compressors America	No			0.002			
TOTALS								6.23	0.17	3.72	0.14	0.37	0.57



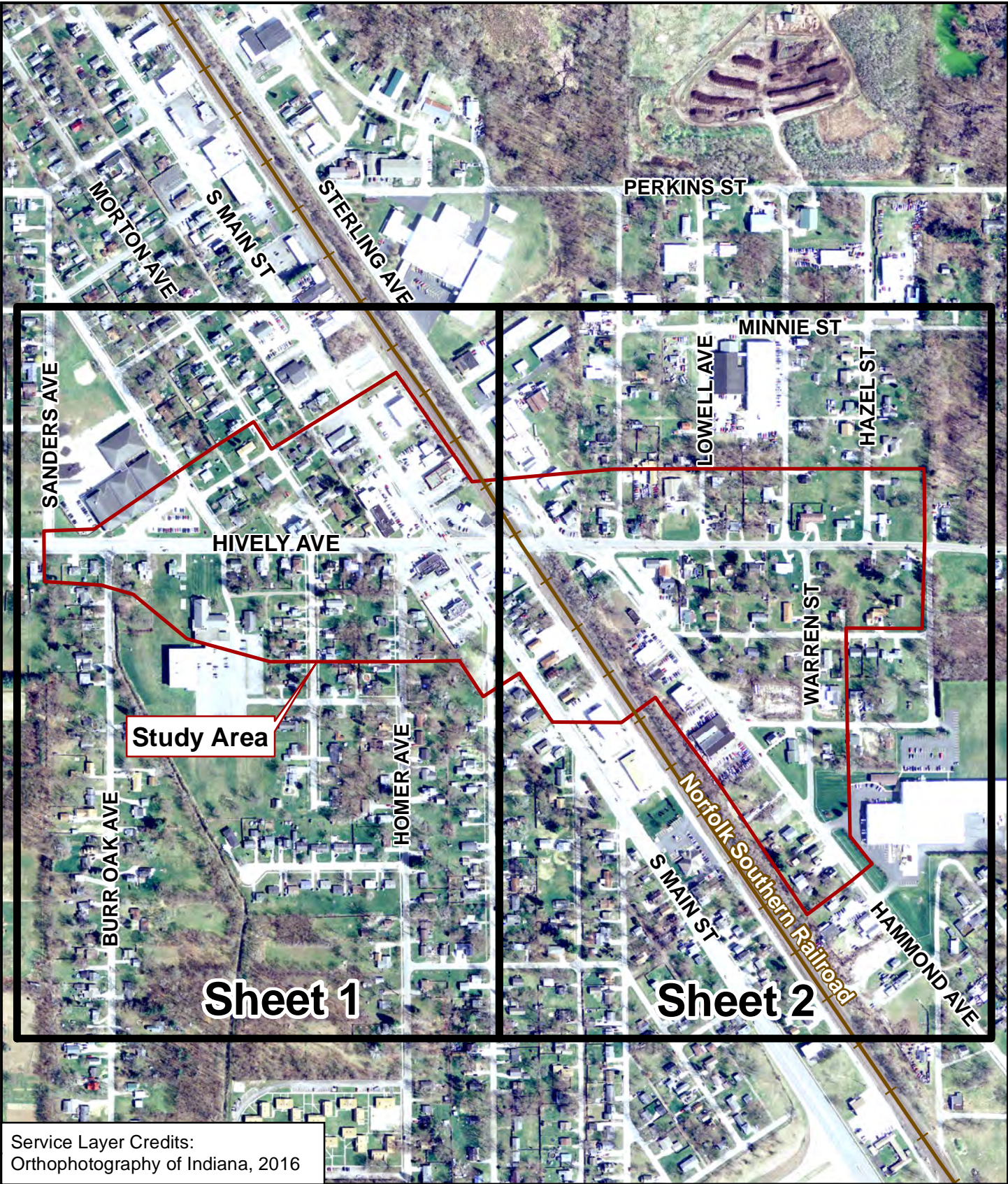
Legend

- Preferred Alternative
- Elevated Roadway
- Pavement Removal

- Bike/Ped Improvement
- Trail Improvement
- RE Red Elkhart-Goshen Stop
- Red Elkhart-Goshen


- + Church
- Grocery Store
- ▴ School

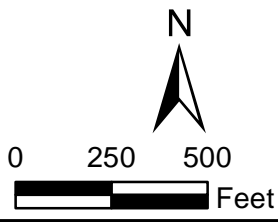
- Property Impacts**
- Green Space (Pocket Park)
- Property Relocation/Acquisition



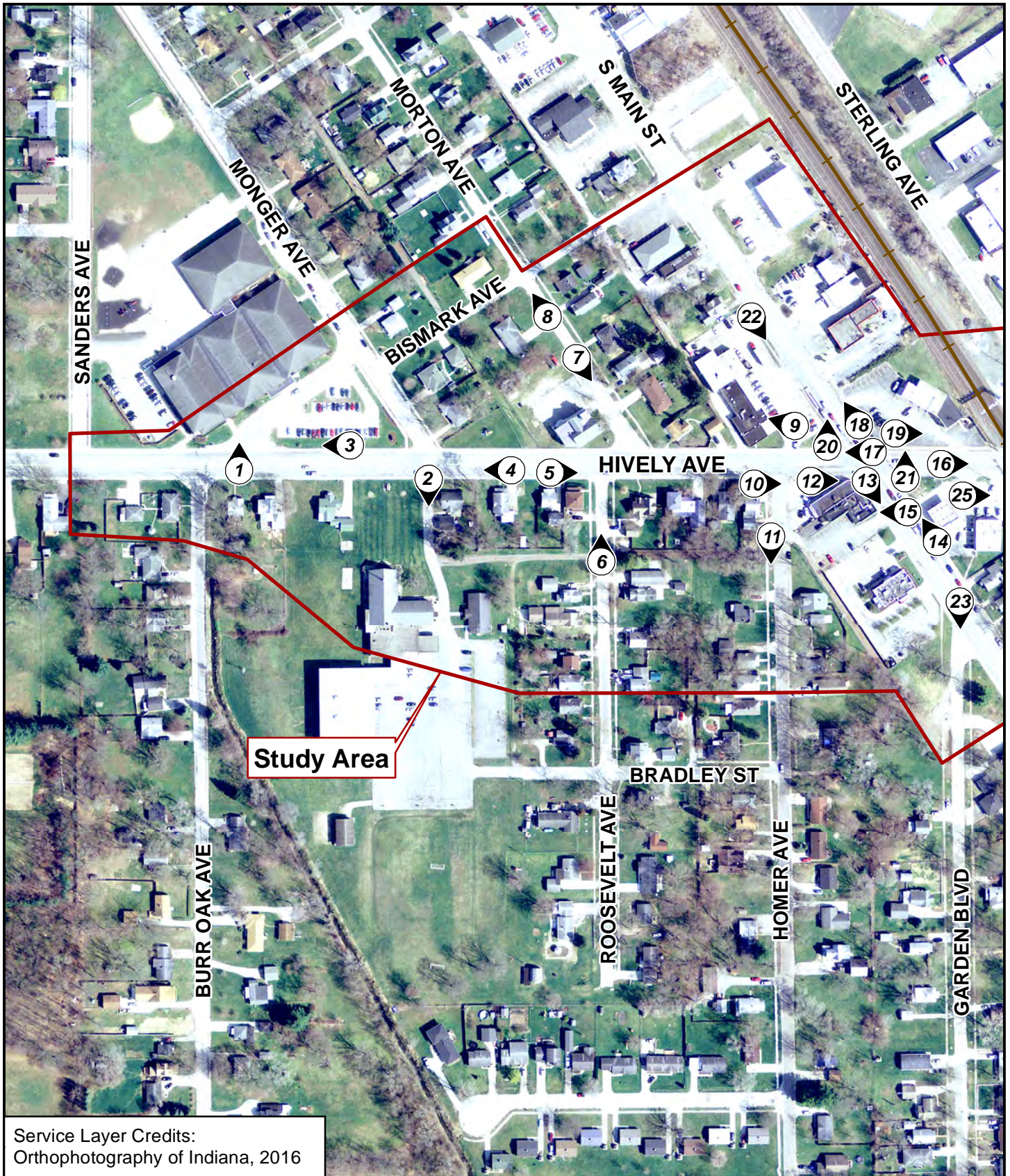
Service Layer Credits:
 Orthophotography of Indiana, 2016

Legend

 Study Area



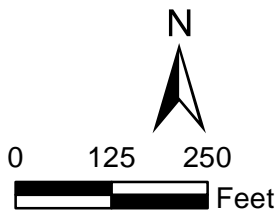
Hively Avenue Overpass Project
Des. No. 1801933
Elkhart, County, Indiana
Photo Log Map Index



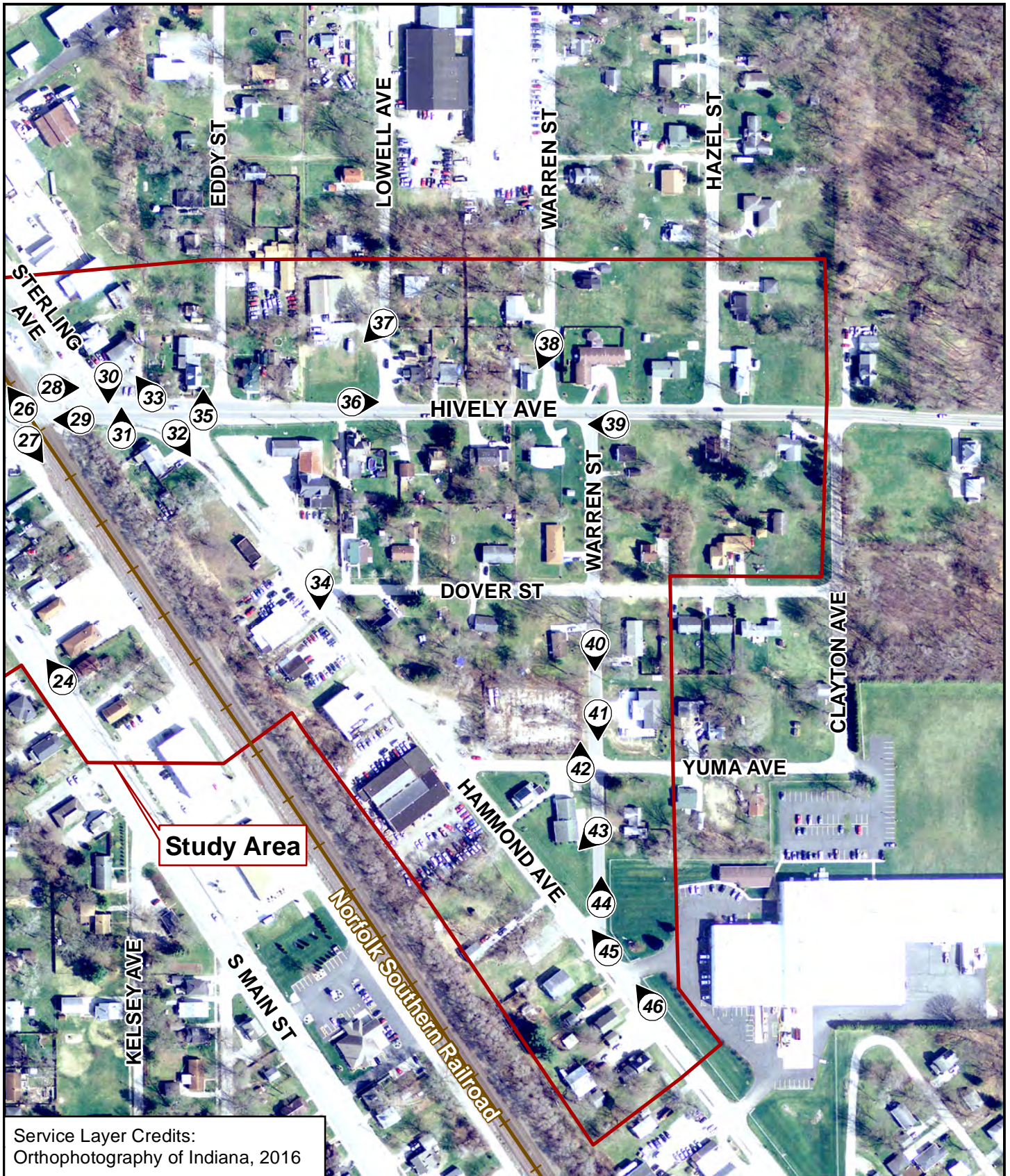
Service Layer Credits:
 Orthophotography of Indiana, 2016

Legend

- Study Area
- 1
 Photo Number and Direction



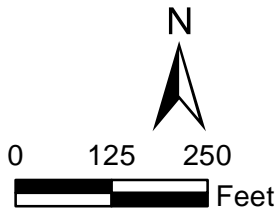
Hively Avenue Overpass Project
Des. No. 1801983
Elkhart, County, Indiana
Photo Log Map Sheet 1 of 2



Service Layer Credits:
 Orthophotography of Indiana, 2016

Legend

- Study Area
- 1
 Photo Number
 and Direction



Hively Avenue Overpass Project
Des. No. 1801983
Elkhart, County, Indiana
Photo Log Map Sheet 2 of 2



Photo 1: Facing north at Hively Avenue and Monger Elementary School



Photo 2: Facing south at Zion Missionary Church



Photo 3: Facing west at north side of Hively Avenue and Monger Elementary School



Photo 4: Facing west at south side of Hively Avenue



Photo 5: Facing east at south side of Hively Avenue



Photo 6: Facing north on Roosevelt Avenue towards Hively Avenue



Photo 7: Facing southeast on Morton Avenue towards Hively Avenue



Photo 8: Facing northwest on Morton Avenue towards Bismark Avenue



Photo 9: Facing northwest at El Rosal Supermarket



Photo 10: Facing east at Homer Avenue & Hively Avenue and Elkhart Speedwash



Photo 11: Facing south at west side of Homer Avenue



Photo 12: Facing east at Hively Avenue and South Main Street intersection



Photo 13: Facing southeast at South Main Street



Photo 14: Facing northwest at South Main Street towards Hively Avenue



Photo 15: Facing west at South Main Street and Hively Avenue



Photo 16: Facing east at Hively Avenue



Photo 17: Facing west at Hively Avenue and South Main Street



Photo 18: Facing northwest at east side of South Main Street



Photo 19: Facing east at north side of Hively Avenue



Photo 20: Facing north at South Main Street



Photo 21: Facing north at northeast quadrant of Hively Avenue and South Main Street



Photo 22: Facing southeast at South Main Street



Photo 23: Facing south at South Main Street and Garden Boulevard



Photo 24: Facing northwest on South Main Street



Photo 25: Facing east at Hively Avenue and Norfolk Southern RR Crossing



Photo 26: Facing northeast at Norfolk Southern RR Crossing



Photo 27: Facing southeast at Norfolk Southern RR



Photo 28: Facing east at Hively Avenue and Sterling Avenue



Photo 29: Facing west at Hively Avenue and Norfolk Southern RR Crossing



Photo 30: Facing south at MapleHeart Trail crosswalk on Hively Avenue



Photo 31: Facing north at MapleHeart Trail crosswalk on Hively Avenue



Photo 32: Facing southeast at MapleHeart Trail and Hammond Avenue



Photo 33: Facing northwest at MapleHeart Trail and Hively Avenue



Photo 34: Facing south at Hammond Avenue



Photo 35: Facing north at Hively Avenue and Eddy Street



Photo 36: Facing east at Lowell Avenue



Photo 37: Facing southwest on Lowell Avenue



Photo 38: Facing southwest on Warren Street (north of Hively Avenue)



Photo 39: Facing west at Hively Avenue and Warren Street



Photo 40: Facing south at Warren Street (south of Hively Avenue)



Photo 41: Facing south on Warren Street towards Yuma Avenue



Photo 42: Facing north on Warren Street



Photo 43: Facing southwest on Warren Street towards Hammond Avenue



Photo 44: Facing north at Warren Street



Photo 45: Facing northwest at Warren Street and Hammond Avenue intersection



Photo 46: Facing northwest at Hammond Avenue