



# INDIANA DEPARTMENT OF TRANSPORTATION

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

PHONE: (855) 463-6848

**Eric Holcomb, Governor**  
**Michael Smith, Commissioner**

Date: July 30, 2024

Re: Early Coordination Letter  
Des. Nos. 2200061 and 2200062  
Intersection Improvement Project, State Project  
State Road (SR) 32 at Madison St. and Hackley St.  
Delaware County, Indiana

To whom it may concern:

The Indiana Department of Transportation (INDOT) Greenfield District, with funding from the Federal Highway Administration (FHWA), intends to proceed with the following intersection improvement project at the intersections of SR 32 and Madison St. (Des. No. 2200061) and SR 32 and Hackley St. (Des. No. 2200062) in the City of Muncie, Delaware County, Indiana.

This letter is part of the early coordination phase of the environmental review process. At this time, we are requesting comments from your area of expertise regarding any possible environmental effects (social and natural) associated with the project. **Please use the above Des. No. and project description in your reply.** Your comments will be incorporated into the formal environmental study. Your cooperation in this endeavor is appreciated.

### *Project Location and Existing Conditions*

The proposed project is located at the intersections of SR 32 and Madison St. and SR 32 and Hackley St., which includes Main St. (westbound SR 32) and Jackson St. (eastbound SR 32) for a total of four intersections in the City of Muncie, Delaware County, Indiana. SR 32 and Madison St. is located approximately 2.4 miles west of United States Highway (U.S.) 35, and SR 32 and Hackley St. is located approximately 2.1 miles west of U.S. 35. Specifically, the project is located in Sections 10 and 15, Township 20 North, Range 10 East in Center Township as depicted on the Muncie West Quadrangle of the U.S. Geological Survey (USGS) 1:24,000 scale map. Adjacent land use is urban and primarily consists of commercial facilities, residential properties, and recreational parks.

SR 32 is an east/west route, which is functionally classified as a minor arterial roadway. SR 32 is separated into two one-way streets known locally as Main St. (north) and Jackson St. (south). The typical cross section of the westbound (WB) SR 32 (Main St.) and Madison St. intersection consists of three 12-foot-wide lanes including one dedicated left turn lane, one through travel lane, and one shared through/right turn lane as well as 9- to 12-foot-wide sidewalks. The typical cross section of the eastbound (EB) SR 32 (Jackson St.) and Madison St. intersection consists of two 14-foot-wide through travel lanes and 5- to 10-foot-wide sidewalks. The typical cross section of the westbound SR 32 (Main St.) and Hackley St. intersection consists of two 12-foot-wide through lanes, one 10-foot-wide parking area along the north side of the roadway, and 6-foot-wide sidewalks. The typical cross section of the eastbound SR 32 (Jackson St.) and Hackley St. intersection consists of two 13-foot-wide through travel lanes and 6-foot-wide sidewalks. Curb and gutter with closed drainage is located throughout the project area. The posted speed limit along SR 32 (Main St.) is 30 miles per hour (mph), changing to 20 mph west of the intersection with

Madison St. The posted speed limit along SR 32 (Jackson St.) is 20 mph, changing to 30 mph east of the intersection with Monroe St.

Madison St. is a north/south route, which is functionally classified as a principal arterial roadway. The typical cross section of Madison St. at the intersections of SR 32 (Main St.) and SR 32 (Jackson St.) consists of four 11.5-foot-wide through travel lanes (two northbound and two southbound), a dedicated 10-foot-wide left turn lane between SR 32 (Main St.) and SR 32 (Jackson St.), and 6-foot-wide sidewalks. The existing intersections of SR 32 (Main St.) and SR 32 (Jackson St.) with Madison St. are three-way traffic signal-controlled intersections. The posted speed limit along Madison St. is 30 mph.

Hackley St. is a north/south route, which is functionally classified as a major collector roadway. The typical cross section of Hackley St. at the intersections of SR 32 (Main St.) and SR 32 (Jackson St.) consists of two 13-foot-wide through travel lanes (one northbound and one southbound) which widens to 24-foot-wide southbound travel lane between SR 32 (Main St.) and SR 32 (Jackson St.) and 6-foot-wide sidewalks. The existing intersections of SR 32 (Main St.) and SR 32 (Jackson St.) with Hackley St. are two-way stop-controlled intersections, with drivers along Hackley St. requiring stops. The posted speed limit along Hackley St. is 30 mph.

#### *Purpose and Need*

According to the *2021 Crash Reports*, the four intersections within the study area have unacceptably high crash frequencies and severity rates. According to the *2021 Assessment Reports*, the Level of Service (LOS) was evaluated for the existing condition and design year (2047) and is expected to either remain the same or worsen. See below for greater detail regarding crash and operational efficiency metrics.

High Crash Frequency and Severity: The index of crash frequency (ICF) and index of crash cost (ICC) values are calculated using RoadHAT, which is a crash analysis tool that is compliant with the Highway Safety Manual methodology and is calibrated for Indiana roadways. The ICF and ICC compare the crash frequency and crash cost for each intersection to other intersections with similar volumes, roadway classification, and control type throughout Indiana. The index values represent the number of standard deviations above or below the statewide average for the corresponding facility type (intersection, segment, or ramp). The higher the ICF value, the stronger the evidence for the location to be classified as a high frequency crash location. The higher the ICC value, the stronger the evidence that crash costs are higher than expected due to the incidence of higher severity crashes. An ICF or ICC value greater than 2.0 is generally indicative of a high crash location. All four intersections have an elevated crash frequency and/or crash cost compared to other similar intersections. The ICF and ICC are summarized in Table 1.

Table 1: Summary of ICF and ICC at the four SR 32 WB and EB intersections with Madison St. and Hackley St.

Intersection	ICF	ICC	Number of Crashes	Types of Crashes (%)
WB SR 32 (Main St.) and Madison St.	3.06	2.49	43 total crashes including: 25 property damage only crashes 13 non-incapacitating crashes 5 fatal and incapacitating crashes	30 right angle crashes (69.8%) 6 rear end crashes (14.0%) 3 same direction sideswipes (7.0%) 2 ran off road crashes (4.6%) 1 left turn crash (2.3%) 1 pedestrian crash (2.3%)
EB SR 32 (Jackson St.) and Madison St.	2.73	1.84	40 crashes including: 32 property damage only crashes 3 non-incapacitating crashes 5 fatal and incapacitating crashes	23 right angle crashes (57.5%) 7 rear end crashes (17.5%) 5 same direction sideswipes (12.5%) 2 left turn crashes (5%) 1 head on crash (2.5%) 1 ran off road crash (2.5%) 1 right turn crash (2.5%)
WB SR 32 (Main St.) and Hackley St.	3.63	2.36	41 total crashes including: 30 property damage only crashes 5 non-incapacitating crashes 6 fatal and incapacitating crashes	25 right angle crashes (61.0%) 6 same direction sideswipes (14.6%) 3 backing crashes (7.3%) 2 rear end crashes (4.9%) 2 left turn crashes (4.9%) 1 non-collision (2.4%) 1 ran off road crash (2.4%) 1 other crash (2.4%)
EB SR 32 (Jackson St.) and Hackley St.	3.25	1.89	33 total crashes including: 25 property damage only crashes 4 non-incapacitating crashes 4 fatal and incapacitating crashes	18 right angle crashes (54.5%) 5 same direction sideswipes (15.2%) 3 rear end crashes (9.1%) 2 left turn crashes (6.1%) 2 ran off road crashes (6.1%) 1 backing crash (3.0%) 1 right turn crash (3.0%) 1 other crash (3.0%)

**Right Angle Crashes:** The most common crash type is right angle crashes, which represent greater than 50% of the crashes at each of the four intersections. Right angle crashes are also amongst the most severe types of crashes and represent greater than 50% of all incapacitating accidents at these intersections. Right angle crashes may indicate vehicles are making a left turn at intersections with heavy traffic, disregarding existing traffic signage and/or signalization, and/or failing to yield right-of-way. As traffic increases and Level of Service (LOS) decreases, patrons may become more apt to disregard a red light or fail to yield right-of-way to avoid longer wait times.

**Rear End Crashes:** The second most common crash type is rear end crashes at the Madison St. intersections, which comprise 14.0% of crashes at the SR 32 (Main St.) and 17.5% crashes at the SR 32 (Jackson St.) locations. Rear end crashes generally result in fewer incapacitating accidents than right angle crashes, instead primarily resulting in property damage only. Rear end crashes may indicate poor LOS at an intersection and often result from patrons driving too closely to adjacent vehicles. Additional LOS data is described in Table 2 below.

**Same Direction Sideswipe Crashes:** The second most common crash type is same direction sideswipe crashes at the Hackley St. intersections, which comprise 14.6% of crashes at the SR 32 (Main St.) and

15.2% of crashes at the SR 32 (Jackson St.) locations. Same direction sideswipe crashes generally result in fewer incapacitating accidents than right angle crashes, instead primarily resulting in property damage only. Same direction sideswipe crashes may indicate vehicles making improper turning movements, unsafe lane movements, and/or that conflict points may be an issue. As traffic increases and LOS decreases, patrons may become more reckless in their turning and/or lane movements to avoid additional wait time.

Insufficient Level of Service (LOS): A decrease in LOS is anticipated to exacerbate the existing crash concerns for all three types of crashes. Therefore, there is also a need to maintain and/or improve the operational efficiency of the intersections, while simultaneously reducing the frequency of overall crashes and high severity crashes. LOS measures operational efficiency. LOS analyzes roadways and intersections by categorizing traffic flow and assigning quality level to traffic based on performance measures like vehicle speed, density, congestion, etc. LOS assigns grades A through F, with A being best and F being the worst. LOS A represents free flow traffic, LOS C represents stable flow, and LOS F represents a breakdown in flow or gridlock. According to the *2021 Assessment Reports*, LOS was evaluated for the existing condition and design year (2047), which factors in anticipated traffic growth. See Table 2 for more detail regarding traffic growth.

Table 2: Summary of traffic volumes measured in vehicles per day (V.P.D) between 2027 and 2047.

Roadway	V.P.D. (2027)	V.P.D. (2047)	Percent Increase
WB SR 32 (Main St.)	4,702	5,064	7.7%
EB SR 32 (Jackson St.)	4,969	5,397	8.6%
Madison St.	13,203	13,592	2.9%
Hackley St.	2,487	2,487	0%

Based on the anticipated traffic growth, the LOS either remains the same or worsens. The most frequently observed types of crashes (right angle crashes, rear end crashes, and same direction sideswipes) at these intersections often increase as the LOS worsens.

Table 3: Summary of LOS at the four SR 32 WB and EB intersections with Madison St. and Hackley St.

Intersection	Existing		No Build (2047)	
	AM Peak – LOS	PM Peak – LOS	AM Peak – LOS	PM Peak – LOS
WB SR 32 (Main St.) and Madison St.	B	B	C	B
EB SR 32 (Jackson St.) and Madison St.	B	B	B	C
WB SR 32 (Main St.) and Hackley St.	D (NB lane) C (SB lane)	D (NB lane) C (SB lane)	F (NB lane) D (SB lane)	F (NB lane) E (SB lane)
EB SR 32 (Jackson St.) and Hackley St.	B (NB lane) B (SB lane)	C (NB lane) D (SB lane)	C (NB lane) C (SB lane)	E (NB lane) F (SB lane)

Purpose and Need Statement: The need for the project is due to unacceptably high crash frequency, high crash severity rates, and low operational efficiency at the four intersections. Specifically, the indexes of crash frequency (ICF) of the intersections range from 2.73 to 3.63, the indexes of crash cost (ICC) range from 1.84 to 2.89, and the current LOS ranges from B to D, depending on roadway, lane, and time of day.

The purpose of this project is to reduce the frequency of overall crashes and high severity crashes at the WB and EB intersections of SR 32 and Madison Street and SR 32 and Hackley Street as well as maintain at

least a LOS C for all movements at the intersections after project completion through the design year of 2047.

#### *Proposed Project*

The proposed project is an intersection improvement project at the four subject intersections. A wide range of alternatives are currently being evaluated due to the presence of various historic and/or recreational properties located within or adjacent to the project area. The alternatives include, but are not limited to traffic signalization, different configurations of stop controlled access, roundabouts, and/or other traffic calming measures. Pedestrian sidewalks will be added to all intersection quadrants, and Americans with Disabilities Act (ADA)-compliant curb ramps will be installed at crossings. A storm sewer system will be installed. Additional street lighting may be added at the intersections.

The maintenance of traffic (MOT) plan is anticipated to require a full closure of each intersection using local detours and will be coordinated with the City of Muncie. The MOT will be implemented per the *Manual on Uniform Traffic Control Devices (MUTCD)* guidelines. Construction is anticipated to begin in spring of 2027.

#### *Right-of-Way (ROW)*

The project is anticipated to require a total of approximately 0.2 acre of permanent ROW to accommodate the construction activities at all four intersections. The project is also anticipated to require approximately 0.03 acre of temporary ROW to facilitate construction access and reconstruct driveways, as necessary. Tree clearing is anticipated to be required and will occur within 100 feet of the roadway.

#### *Environmental Resources*

A Red Flag Investigation (RFI) was performed within a 0.5-mile radius around the project area. Several “Red Flag” resources of concern were identified, including various infrastructure resources (churches, airport, schools, recreational facilities, and managed lands), water resources, and hazardous material concerns; however, not all will impact the proposed project. These resources will be monitored throughout project development.

Lochmueller Group will perform waters and wetlands determinations to identify water resources that may be present. Coordination with INDOT Environmental Services Division (ESD) Ecology, Waterway Permitting, and Stormwater Office (EWPSO) will occur regarding any applicable permits.

#### *Cultural Resources*

Coordination will occur with INDOT Cultural Resources Office (CRO) to evaluate the project area for archaeological and historic resources and for Section 106 compliance. The results of this investigation will be forwarded to the State Historic Preservation Officer (SHPO) for review and concurrence as appropriate.

#### *Range-wide Informal Programmatic Consultation*

Delaware County is within the range of the federally endangered Indiana bat (*Myotis sodalis*) and the federally endangered northern long-eared bat (NLEB) (*Myotis septentrionalis*). The project is anticipated to qualify for the U.S. Fish and Wildlife Service (USFWS) Range-wide Programmatic Informal Consultation for the Indiana bat and the NLEB.

### *Early Coordination*

As a recipient of this early coordination letter, you are asked to review this information and provide any comments you may have relative to anticipated impacts of the project on areas in which you have jurisdiction or special expertise. We will incorporate your comments into a study of the project's environmental impacts. To facilitate the development of the project, you are asked to reply within 30 calendar days of receipt of this letter. However, should you find that an extension to the response time is necessary, a reasonable amount may be granted upon request.

If you have any questions regarding the project, please feel free to contact me at (260) 339-3621 or at [Ashley.Taylor@lochgroup.com](mailto:Ashley.Taylor@lochgroup.com). Additionally, should you want to contact the sponsor of this project, INDOT Greenfield District, please contact Taylor Darrah at (317) 467-3915 or at [tdarrah@indot.in.gov](mailto:tdarrah@indot.in.gov). Thank you in advance for your input.

Sincerely,



Ashley Taylor  
Environmental Specialist II – Northern Indiana  
Lochmueller Group, Inc.

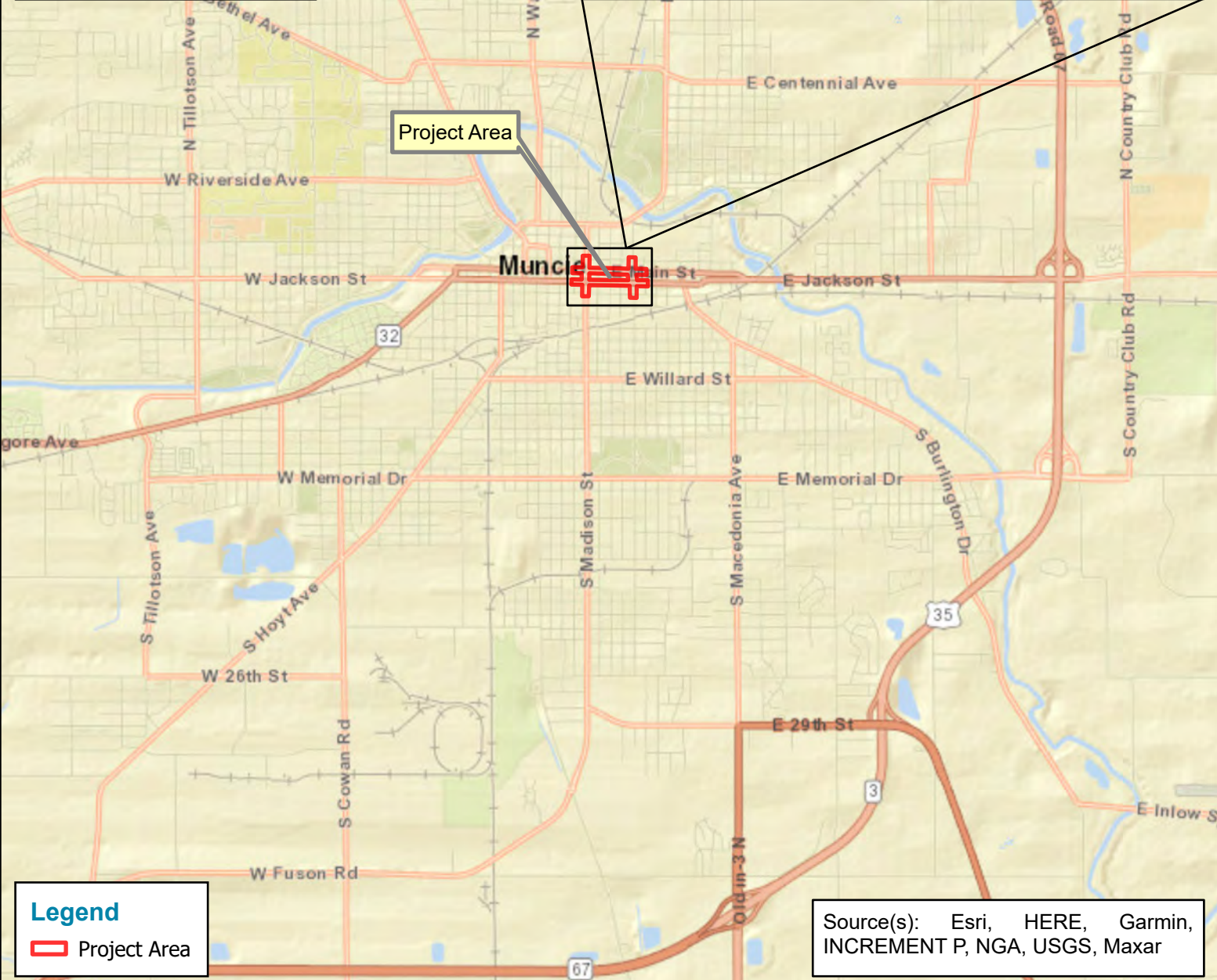
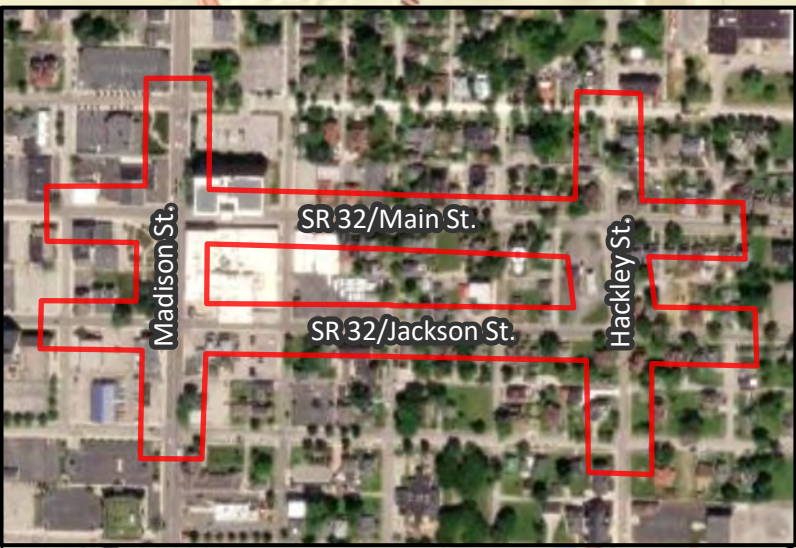
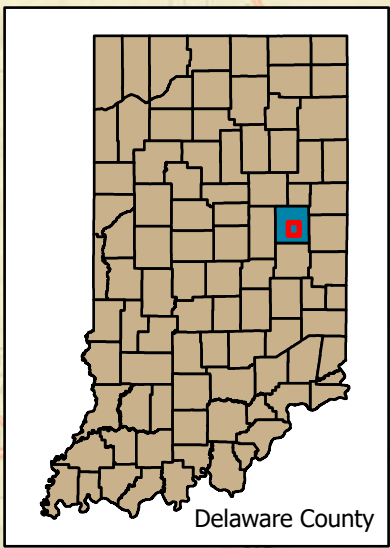
### Attachments:

- General Location Map
- USGS Topographic Map (1:24,000)
- Aerial Map (2022)
- Red Flag Investigation Maps
- Photo Location Map and Project Photographs

### Distribution List (sent via email unless noted otherwise)

- Federal Highway Administration, Indiana Division
- National Park Service, Midwest Regional Office
- U.S. Department of Agriculture, Natural Resources Conservation Service
- U.S. Department of Housing and Urban Development, Chicago Regional Office
- U.S. Army Corps of Engineers, Louisville District
- INDOT Greenfield District Office, Environmental Section Manager
- INDOT Greenfield District Office, Project Manager
- INDOT Environmental Services Division
- INDOT Office of Aviation
- Indiana Dept. of Natural Resources, Division of Fish and Wildlife
- Indiana Geological and Water Survey
- Delaware-Muncie Metropolitan Plan Commission (DMMPC)
- Muncie Sanitary District/City of Muncie MS4 & Delaware County MS4 (*Hard Copy Submission*)
- Ivy Tech Community College Muncie MS4 (*Hard Copy Submission*)
- Delaware County Highway Department

- Delaware County Board of Commissioners
- Delaware County Council
- Delaware County Surveyor's Office
- Delaware County Health Department
- Delaware County Sheriff's Office
- Delaware County Emergency Communications
- Delaware County Emergency Management
- Delaware County EMS
- Muncie Community Schools
- Center Township Trustee
- City of Muncie Mayor
- Muncie City Council
- City of Muncie Fire Department (*Hard Copy Submission*)
- City of Muncie Police Department (*Hard Copy Submission*)
- City of Muncie Parks and Recreation Department
- City of Muncie Public Works Department
- Main Street United Methodist (*Hard Copy Submission*)
- Grace Street Parish (*Hard Copy Submission*)



7223 Engle Road, Suite 105  
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Phone: (574) 334-5460

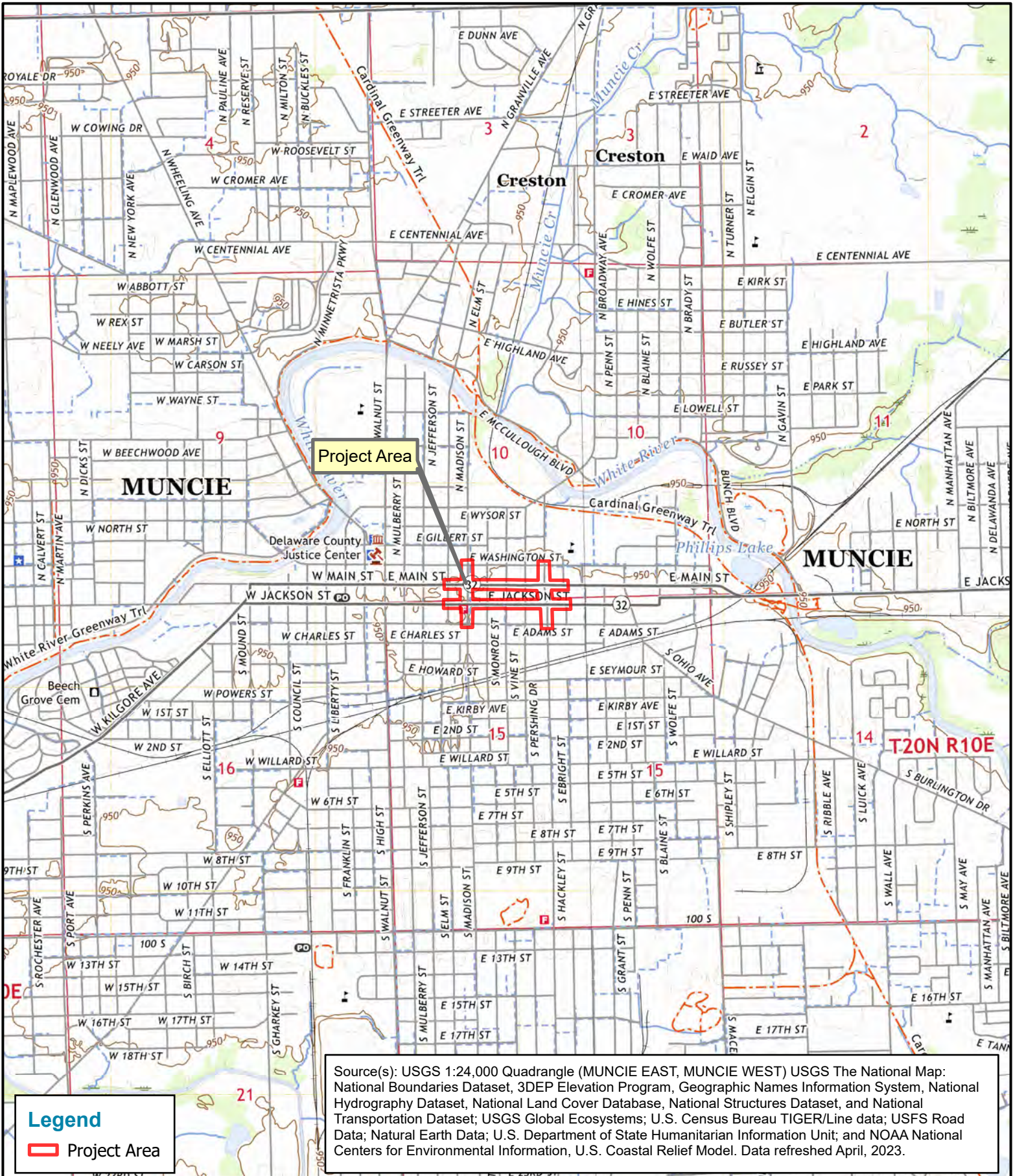
**General Location Map**  
Des. No. 2200061/2200062



County: Delaware  
Township: Center  
State: Indiana

SR 32 and Madison St./SR 32 and Hackley St.  
Intersection Improvement Project  
Created: 3/14/2024, Ashley.Taylor





Source(s): USGS 1:24,000 Quadrangle (MUNCIE EAST, MUNCIE WEST) USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed April, 2023.

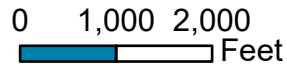
**Legend**

 Project Area

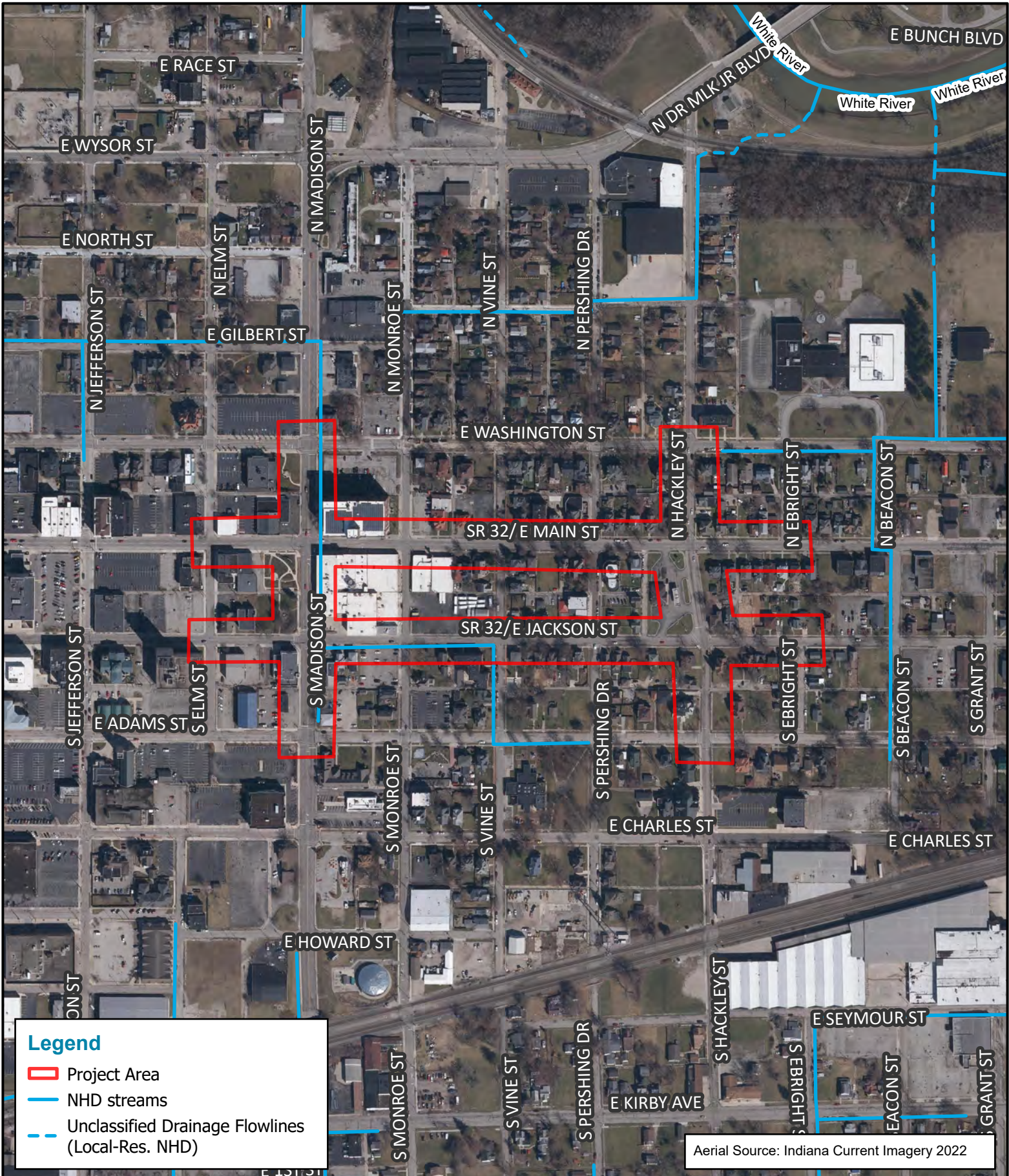
**USGS Topographic Map (1:24,000)**  
**Muncie West Quadrangle**  
 Des. No. 2200061/2200062

County: Delaware  
 Township: Center  
 State: Indiana

**LOCHMUELLER GROUP**  
 7223 Engle Road, Suite 105  
 Fort Wayne, IN 46804  
 Phone: (574) 334-5460



SR 32 and Madison St./SR 32 and Hackley St.  
 Intersection Improvement Project  
 Created: 2/6/2024, Ashley.Taylor



**Legend**

- Project Area
- NHD streams
- Unclassified Drainage Flowlines (Local-Res. NHD)

Aerial Source: Indiana Current Imagery 2022

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Fort Wayne, IN 46804  
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**Aerial Map (2022)**  
Des. No. 2200061/2200062

0

200

400

Feet

County: Delaware  
Township: Center  
State: Indiana

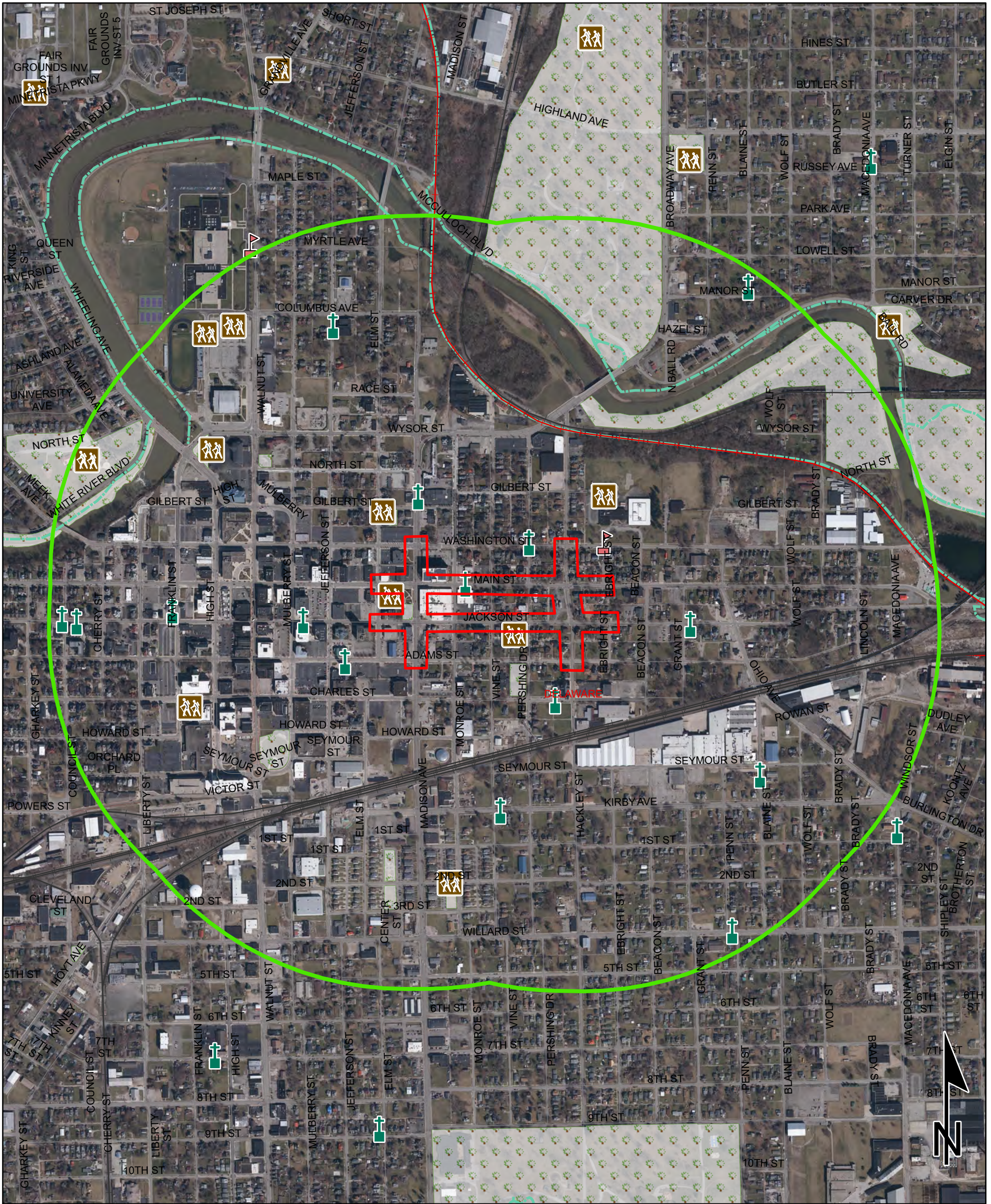
SR 32 and Madison St./SR 32 and Hackley St.  
Intersection Improvement Project  
Created: 2/22/2024, Ashley.Taylor

# Red Flag Investigation - Infrastructure

## SR 32 at Madison St. and Hackley St.

### Des. Nos. 2200061 & 2200062, Intersection Improvement

#### Delaware County, Indiana



Sources: 0.15 0.07 0 0.15 Miles

**Non Orthophotography**

Data - Obtained from the State of Indiana Geographical Information Office Library

**Orthophotography** - Obtained from Indiana Map Framework Data ([www.indianamap.org](http://www.indianamap.org))

Map Projection: UTM Zone 16 N Map Datum: NAD83

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

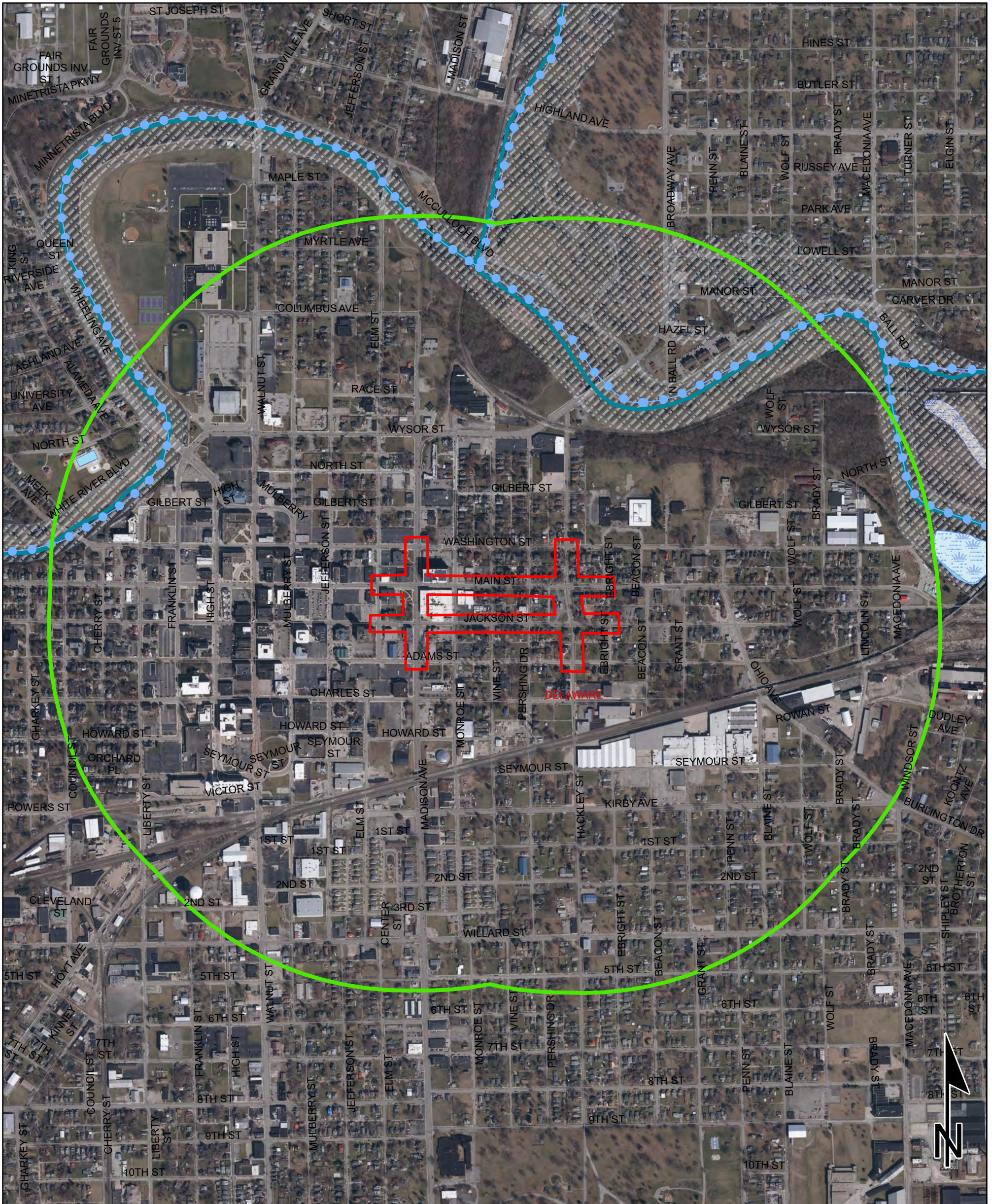
	Religious Facility		Recreation Facility		Project Area
	Airport		Pipeline		Half Mile Radius
	Cemeteries		Railroad		Toll
	Hospital		Trails		Interstate
	School		Managed Lands		State Route
			County Boundary		US Route
					Local Road

# Red Flag Investigation - Water Resources

## SR 32 at Madison St. and Hackley St.

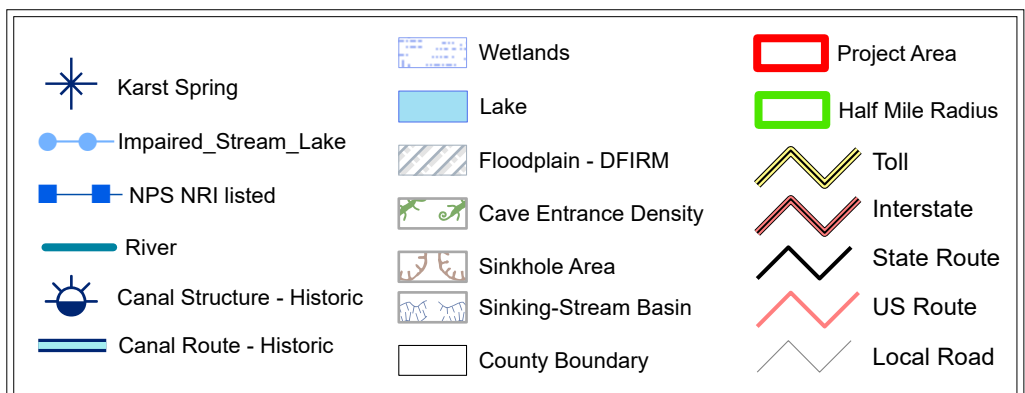
### Des. Nos. 2200061 & 2200062, Intersection Improvement

#### Delaware County, Indiana



**Sources:**  
**Non Orthophotography Data** - Obtained from the State of Indiana Geographical Information Office Library  
**Orthophotography** - Obtained from Indiana Map Framework Data ([www.indianamap.org](http://www.indianamap.org))  
**Map Projection:** UTM Zone 16 N **Map Datum:** NAD83

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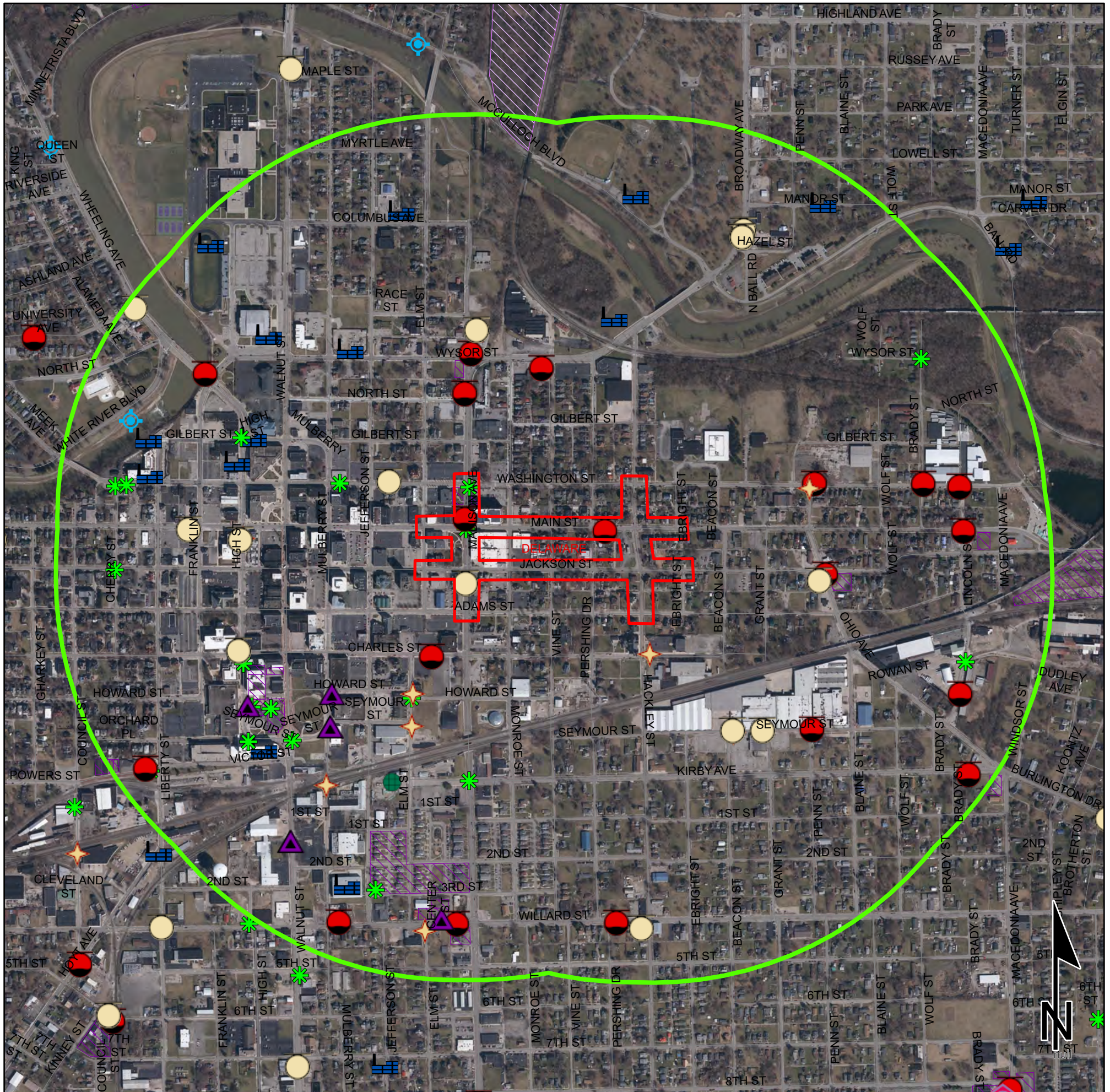


# Red Flag Investigation - Hazardous Material Concerns

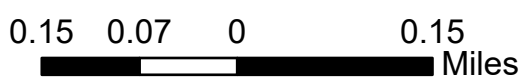
## SR 32 at Madison St. and Hackley St.

### Des. Nos. 2200061 & 2200062 , Intersection Improvement

#### Delaware County, Indiana

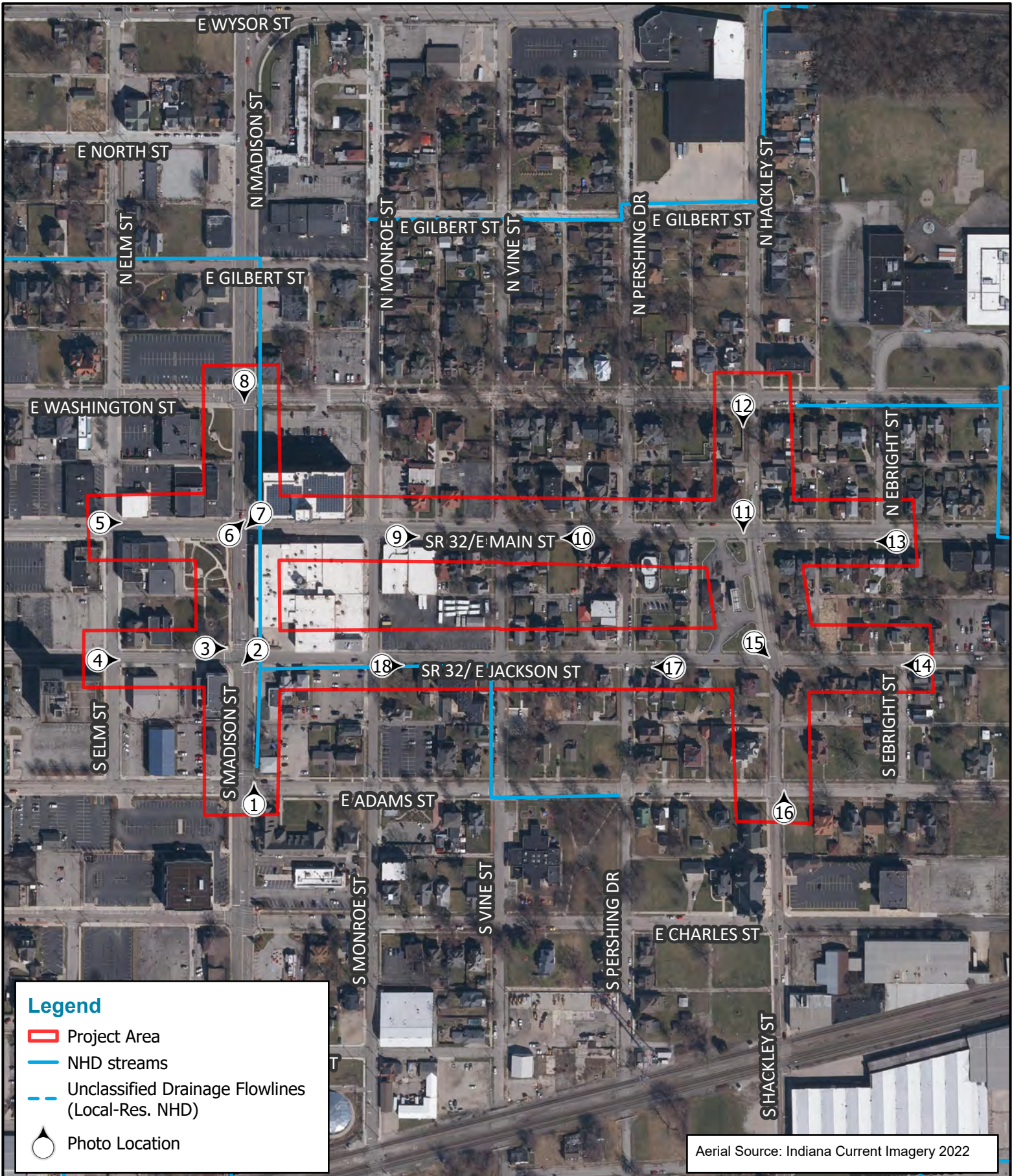


	Brownfield		RCRA Generator/TSD		Institutional Controls
	RCRA Corrective Action Sites		Restricted Waste Site		County Boundary
	Confined Feeding Operation		Septage Waste Site		Project Area
	Notice_of_Contamination		Solid Waste Landfill		Half Mile Radius
	Construction/Demolition Site		State Cleanup Site		Toll
	Infectious/Medical Waste Site		Superfund		Interstate
	Leaking Underground Storage Tank		Tire Waste Site		State Route
	Manufactured Gas Plant		Underground Storage Tank		US Route
	NPDES Facilities		Voluntary Remediation Program		Local Road
	NPDES Pipe Locations		Waste Transfer Station		
	Open Dump Waste Site				



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**Sources:**  
**Non Orthophotography**  
**Data** - Obtained from the State of Indiana Geographical Information Office Library  
**Orthophotography** - Obtained from Indiana Map Framework Data ([www.indianamap.org](http://www.indianamap.org))  
**Map Projection:** UTM Zone 16 N **Map Datum:** NAD83



**Legend**

- ▭ Project Area
- NHD streams
- - - Unclassified Drainage Flowlines (Local-Res. NHD)
- Photo Location


Aerial Source: Indiana Current Imagery 2022




7223 Engle Road, Suite 105  
Fort Wayne, IN 46804  
Phone: (574) 334-5460

**Photo Location Map**  
Des. No. 2200061/2200062

0    150    300



Feet



County: Delaware  
Township: Center  
State: Indiana

SR 32 and Madison St./SR 32 and Hackley St.  
Intersection Improvement Project  
Created: 5/24/2024, Ashley.Taylor



1. Looking north along the east side of Madison St.



2. Looking southwest across intersection of EB SR 32/Jackson St. and Madison St. at Fire Station.



3. Looking east along the north side of EB SR 32/Jackson St.



4. Looking east along the south side of EB SR 32/Jackson St.



5. Looking east along the north side of WB SR 32/Main St.



6. Looking northeast across the intersection of WB SR 32/Main St. and Madison St.



7. Looking southwest across the intersection of WB SR 32/Main St. and Madison St. towards Cornerstone Park



8. Looking south along the east side of Madison St.





9. Looking east along the south side of WB SR 32/Main St.



10. Looking west along the south side of WB SR 32/Main St.



11. Looking south towards the intersection of WB SR 32/Main St. and Hackley St.



12. Looking south along the west side of Hackley St.



13. Looking west along the south side of WB SR 32/Main St.



14. Looking west along the south side of EB SR 32/Jackson St.



15. Looking southeast across the intersection of EB SR 32/Jackson St. and Hackley St



16. Looking north along the east side of Hackley St.



17. Looking west along the south side of EB SR 32/Jackson St.



18. Looking east along the south side of EB SR 32/Jackson St.