



Roadway Safety Audits

Project Overview

February 3, 2026

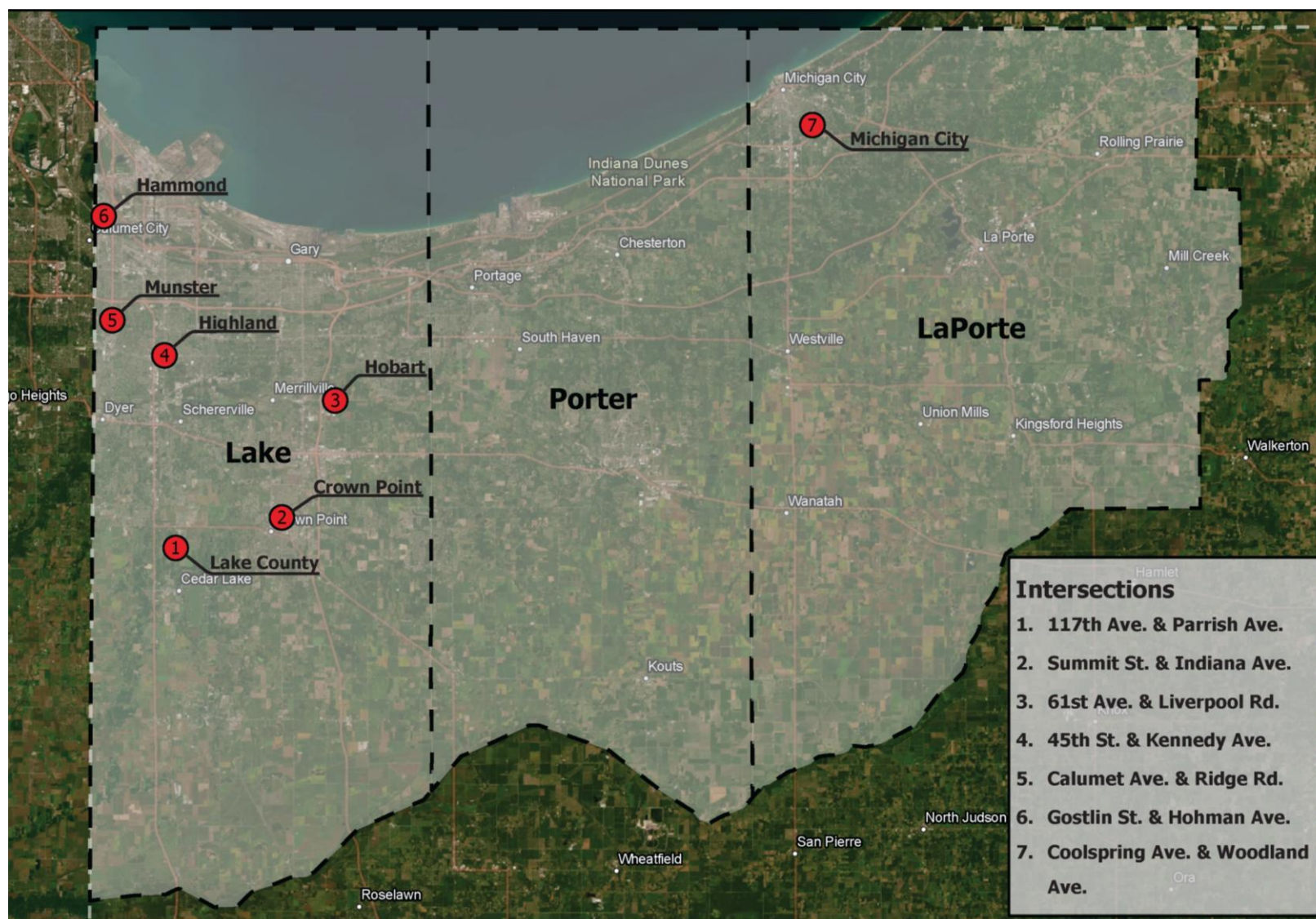


CORRADINO LLC
Engineers • Planners • Program Managers • Environmental Scientists

Project Overview



Corradino LLC Conducted Roadway Safety Audits (RSAs) at seven intersections within NIRPC's Metropolitan Planning Area.





Step 1 – Project Management Plan

- Establish the Project Schedule
- Identify Data Sources & Collection Process
- Confirm Means of Communication

Step 2 – Data Collection & Analysis



COLLECTING & ANALYZING CRASH DATA

- Validate Crash Locations are Accurate
- Confirm Manner of Collision & Crash Severity Reflect Police Narrative
- Generate Collision Summary Tables
- Generate Collision Diagrams
- Generate Crash Frequency & Crash Cost Scores
- Identify Potential Safety Countermeasures



COLLECTING & ANALYZING TRAFFIC DATA

- Receive traffic counts data from NIRPC;
- Conduct Existing Condition Analysis
- Generate a Future No Build Analysis
 - Identify Annual Traffic Growth Rate
 - Identify Design Year (2050)
- Use INDOT's Intersection Decision Guide to screen potential build alternatives that align with safety countermeasures



Step 3 – Preliminary Findings



PRELIMINARY FINDINGS REPORT

- One page Memorandum that outlined the crash data cleaning methodology and initial findings.
- Summary tables of the crash data, a collision diagram, and photos of the intersection were included
- Results from the RoadHAT 4.1 Analysis.



LPA WORKING SESSIONS

- Schedule Virtual Working Sessions with NIRPC Staff, LPA Staff, & Local Law Enforcement.
- Share the Preliminary Findings from the Crash & Traffic Data Analysis.
- Discuss past and/or upcoming projects related to the RSA location.
- Brainstorm preliminary safety improvements to test for the RSA location.
- Document minutes that summarized the meeting and next steps for the RSAs.



Step 4 – Field Check & RSA Reports



FIELD CHECKS & OBTAIN LOCAL INPUT

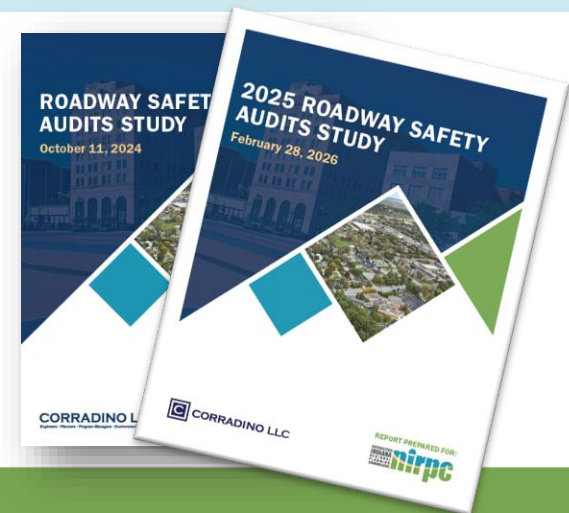
- Coordinate a Field Check with NIRPC Staff, LPA Staff, & Local Law Enforcement
- Review Crash History & Traffic Analysis
- Provide status updates on potential alternatives tested after the Working Sessions
- Observe Traffic Patterns
- Identify Near-Term & Long-Term Countermeasures
- Build Consensus on Recommended Improvements



ROADWAY SAFETY AUDIT REPORT

- 1-2 Page Abbreviated Engineering Summary Outlining the Project
- Preliminary Findings Report
- Minutes for the Working Session & Field Check
- Raw Traffic Count Data
- Output data from the Traffic Analysis
- Cost Estimates & Schematics for Near-Term and Long-Term Improvements.
- Cost-Benefit Ratio generated from RoadHAT 4.1.

Step 5 – Write Final Safety Study



RSA Example – 117th Avenue & Parrish Avenue

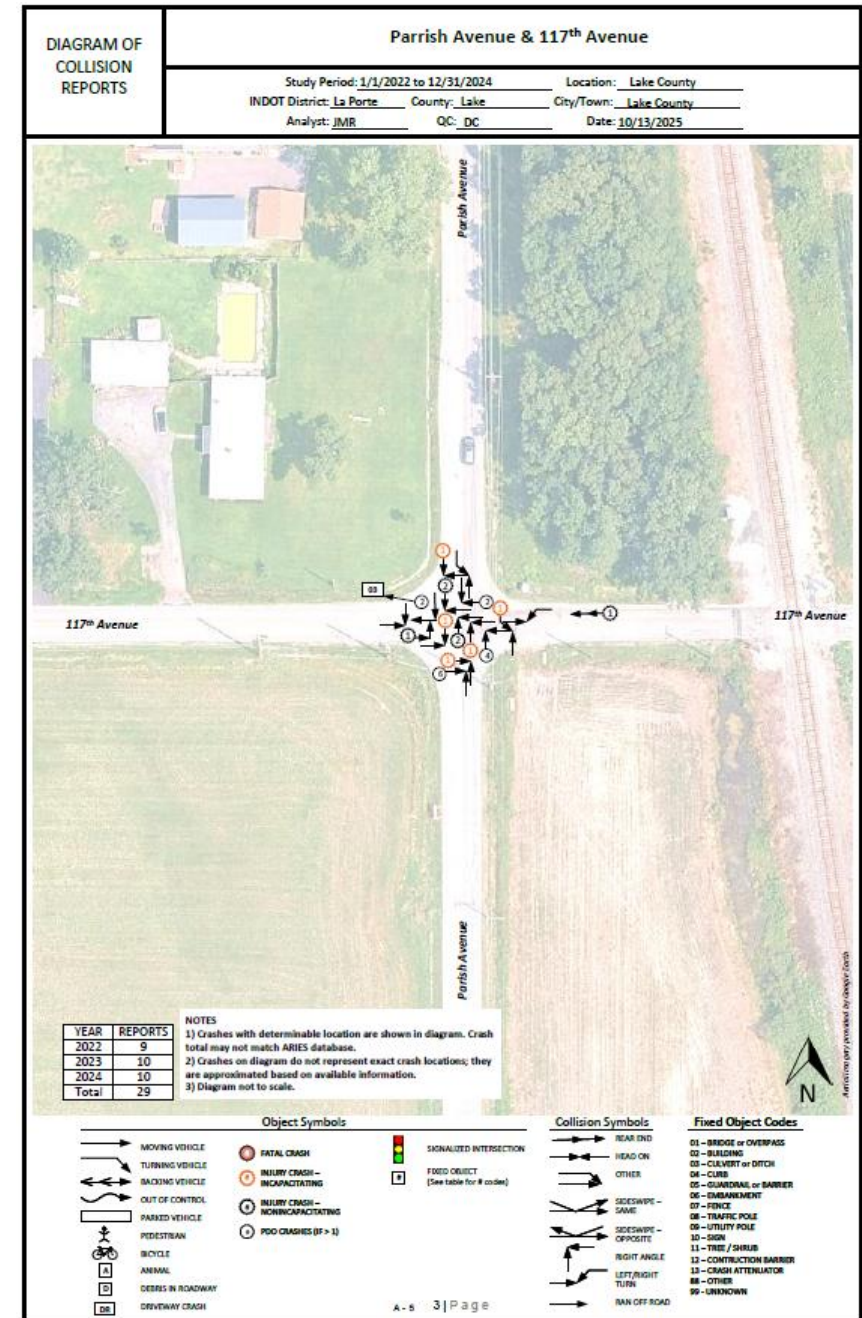


Crash Analysis

29 reported Crashes (2022-2024)

- **11** (38%) Resulted in Injury
- **26** (89%) were Right-Angle or Left Turn crashes.

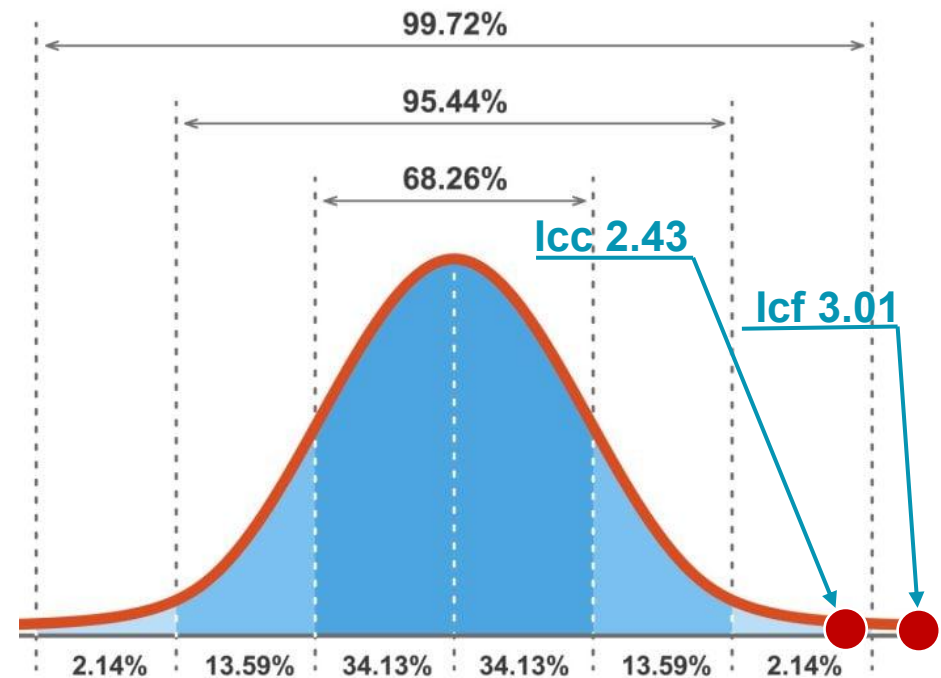
The remaining **3** crashes were either Rear End or Ran Off Road. The primary factor for these **3** crashes was reported as “Traveling at Unsafe Speeds.”





RoadHAT 4.1 Methodology

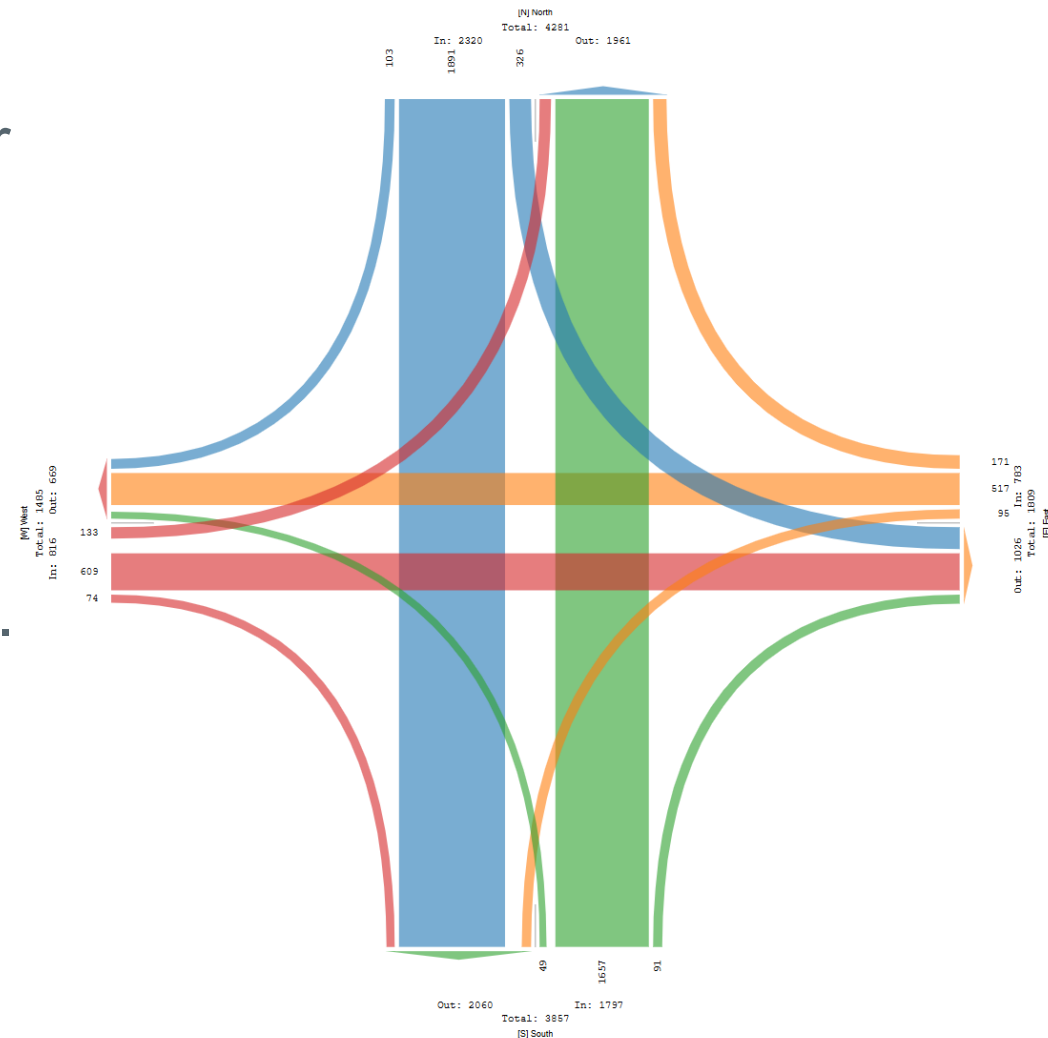
- Compared the Study Intersection to peer intersections throughout Indiana.
- Identified an average crash frequency (Icf) and crash cost (Icc) for peer intersections.
- Generated the Icf & Icc score for the Study Intersection.
 - Used Standard Deviation to Generate Score
 - Icc 2.43
 - Icf 3.01





Traffic Analysis

- Collected Traffic Counts October 21, 2025.
- Conducted Existing Conditions Analysis & Future No-Build Scenario.
- Traffic Counts collected a second time on January 7, 2026.





Working Session Summary

Projects Near the Intersection

- 117th Street & Parrish Ave intersection has been a part of a detour route for INDOT's roadway project at US 231 & Cline Ave.
- A Planned INDOT project at US 231 & Parrish Avenue may cause the 117th & Parrish Ave intersection to be used as a detour again.

Recent Studies

- Indiana LTAP completed a safety analysis for the 117th St. & Parrish Ave. intersection in 2023.
 - Recommendations included adding overhead amber-red flashing beacons at the intersection and additional signage.
 - The intersection did not see a reduction in crashes after implementing the improvements.



Working Session Summary

Safety Countermeasures to Test before the Field Check

- All-Way Stop Warrant Analysis.
- Traffic Signal Warrant Analysis.
- Traffic Analysis for a Roundabout.



Working Session Summary

Safety Countermeasures to Test before the Field Check

- All-Way Stop Warrant Analysis.
 - All-Way Stop **did meet** the Warrant criteria.
 - INDOT Office of Traffic Safety has recently begun pursuing All-Way Stops as a systemic safety improvement statewide.
 - However, Lake County Highway Department staff were concerned about making all vehicles stop at the intersection when the volumes along both roadways are so different. The decision was not to implement an All-Way Stop
- Traffic Signal Warrant Analysis.
 - A traffic signal **did not meet** the warrant criteria because the traffic volumes were not high enough.
 - A traffic signal would help control traffic movements, but not eliminate the main conflict points at the intersection.
- Traffic Analysis for a Roundabout.
 - A single lane roundabout **did** perform well at the intersection.
 - The roundabout eliminates right-angle and left-turn crashes, which is **89%** of the crashes occurring at the intersection.



Field Check– December 10, 2024

- Reviewed Crash Data Analysis
- Reviewed Traffic Analysis & Warrant Analysis
- Observed Traffic Patterns at the Intersection
- Identified Near-Term and Long-Term Solutions
- Built Consensus on Recommendations



117th Avenue & Parrish Avenue Intersection – Looking West



Recommendations

- Near-Term Solutions
 - Additional Tree Clearing in the NE corner of the intersection.
 - Maintain Two-Way Stop Controlled Intersection
 - Update striping at the intersection.
 - Add signage on the North and South Legs of the intersection to provide notice of approaching an intersection.
 - Update existing stop signs to LED flashing stop signs.
- Long-Term Solution
 - Reconstruct the intersection into a single-lane Roundabout.

RSA Example – 117th Avenue & Parrish Avenue



Lake County RSA - Long-Term Recommended Alterntative





Next Steps

- Submitted the 2025 Safety Study on January 30th, 2026.
- The study will be reviewed by NIRPC and then finalized by February 28th, 2026.



NIRPC Staff

Charles Bradsky

P: 219-254-2509

E: cbradsky@nirpc.org

Corradino LLC

Mark Rinehart, RSP1

P: (260) 715-3585

E: jrinehart@corradino.com

David Cleveland, PE, PTOE

P: (317) 417-7594

E: dcleveland@corradino.com