Road Safety Audit
North River Road and County Road 500N

Area Plan Commission of Tippecanoe County

July 2015

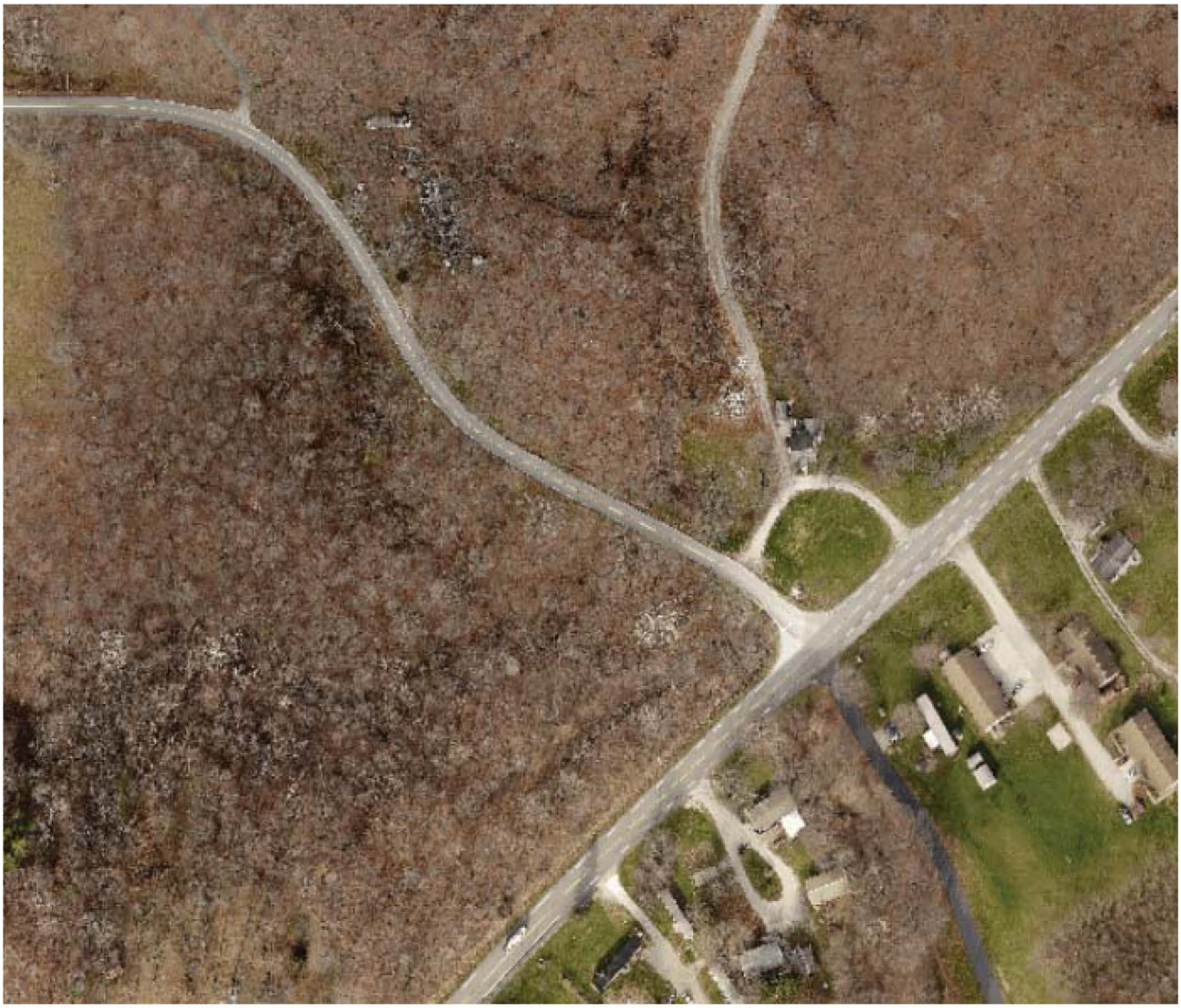


Table of Contents

RSA Background	3
RSA Observations and Analysis	5
RSA Recommendations	6
Vicinity Maps	7
Roadway Inventory	9
Crash Summaries	10
Traffic Volumes	17
Topographic Map	21
Property Boundaries Map	22
Zoning Map	23
Additional Pictures	24
Checklist	28

This document has been financed in part through a grant from the Federal Highway. The contents of this report do not necessarily reflect the official views or policies of the US Department of Transportation.

This Document is protected under the provisions of Title 23 United States Code Section 409 as follows: Discovery and admission of evidence of certain reports and surveys. Notwithstanding any other provision of law, reports, surveys, schedules, lists of data compiled or collected for the purpose of identifying, evaluating or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144 and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceedings or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists or data.

RSA Background

Location: County Road 500 North and its intersection with North River Road, north of West Lafayette, Indiana in Tippecanoe County

RSA: The RSA was conducted on June 18, 2015. Prior to the RSA team members received the Background Information report (which contained all the information in this report) and a more detailed Appendix (copy attached). Team members met at the Tippecanoe County Office Building and were briefed before being carpooled to the site. CR 500N and all intersection approaches were driven, team members completed a checklist as they walked and observed the site, carpooled back to the County Office Building and met for a debriefing, discussion of analysis and the development of recommendations.

Owner: Tippecanoe County

Geographic Scope: The RSA extended 200' north and south on North River Road from its intersection with CR 500 N, and 1000' west on CR 500 N from its intersection with North River Road.

Purpose: Develop preventive countermeasures to improve safety, and assist in scoping a proposed road and intersection HSIP safety improvement project.

Team Members:

-Jim Hawley, previous Exec. Dir. of the Area Plan Commission and the Metropolitan Transportation Planning Organization
-Capt. Brian Sterner, County Sheriff's Department
-Mike Parks, Traffic Supervisor for the Tippecanoe County Highway Department
-Gregory Haltom, Transportation Director for the Tippecanoe School Corporation
-Dave Buck, Public Works Director for the City of West Lafayette
-Laura Slusher, HELPERS Project Manager for the Local Technical Assistance Program at Purdue
-Jim Knapp, Senior Civil Engineer in Facilities Planning at Purdue
-Tim Stroshine, Transportation Planner and Engineer in Training at the Area Plan Commission of Tippecanoe County
-Jon Fricker, Professor at Purdue in the Civil Engineering Department

The Team

Resource Personnel:

Opal Kuhl, Executive Director of the Tippecanoe County Highway Department
John Thomas, Assistant Director for Transportation Planning, APC
Doug Poad, Senior Transportation Planner, APC
Mike Spencer, Assistant Director of the Tippecanoe County Highway Department

Existing conditions: (See Map and Summaries that follow)

CR 500 N is a two lane rural road functionally classified as a Local road. The road drops 70' in elevation with reverse curves that "T"s into North River Road. There is a driveway directly across from the intersection. The pavement condition is "average" with two 10' lanes and less than 1' earth/gravel shoulders. The drainage ditches are directly adjacent to the road with a steep drop-off to the ditch. Land use is heavily wooded with the land slopes down dramatically from east to west. There are faded center and edge line pavement markings.

North River Road is a two lane rural road functionally classified as a Minor Arterial with a "good" pavement condition. There are two 12' lanes with 3'-4' asphalt shoulders on the west side and wider on the east side. The land is level and land use is a mix of residential with some industrial uses to the north. The I-65 interchange is one half of a mile to the north. There are center and edge line pavement markings.

Traffic Characteristics: (See Map and Summaries that follow)

CR 500 N carries 2,247 vehicles per day (2012) with less than 2% heavy trucks. The road is used by school buses, bicyclists and joggers. There are Stop and Street Name signs eastbound at North River Road and Reverse Turn Right with 25 MPH Speed Advisory Plaques at the bottom and top of the hill. The posted speed limit is 40 MPH and the 85th percentile speeds is 47 MPH.

North River Road (north leg) carries 13,548 vehicles per day (2015) with 8.1% heavy trucks. The road is used by school buses going to a regional high school, middle school and elementary school 3 miles to the west. There is a Curve Left sign (85') and a Trail of Death sign (250'). The posted speed limit is 55 MPH and the 85th percentile speeds is 57 MPH.

North River Road (south leg) carries 6,980 vehicles per day (2015) with 5.2% heavy trucks (at Soldiers Home Road) and the road is used by school buses. The posted speed limit is 55 MPH and the 85th percentile speeds is 57 MPH.

Looking west at the Intersection

Crash History: (See Map and Summaries that follow)

There were 41 crashes between January 2010 and February 2015 injuring 15 people with no fatalities. The majority of crashes occurred during the daylight hours, but the percentage of crashes that occurred in dark (not lighted) conditions and in snow and icy conditions was more than twice as great as all crashes in Tippecanoe County. There are two distinctly different crash locations. At the intersection there were 18 crashes with the majority occurring north bound and with a rear end crash pattern. The other location was on CR500N the reverse curves west of the intersection where there were 16 crashes. All involved vehicles losing control with the majority leaving the roadway (12). Pavement was typically wet and crashes occurred when it was dark or dust/dawn.

RSA Observations and Analysis

The RSA team reviewed the enclosed information and following the on-site investigation made the following observations and analysis:

CR 500N

Crash history shows that the reverse curves continue to be a safety issue even after additional advisory signage. The expected run-of-the-road crash type is accentuated by slippery surface conditions which are disproportionally represented. Twelve of the 16 crashes occurred in slippery conditions and 33% of those being in ice, slush or snow conditions. Sight distance is also a problem on the reverse curves which is further complicated by hidden driveways on the curves. Sight distance is also a problem at the intersection of River Road because of vegetation on the west side of the intersection. Traffic stopped at the stop bar on CR500N cannot see north bound vehicles on North River Road. Vision is not obstructed to the northeast of the intersection. Drainage swales on both sides of the road are steep and directly adjacent to the road without any shoulder or emergency area. Thus, if a vehicle does loses control there is no room for recovery. The poor pavement condition at the intersection also contributes to the crashes.

North River Road

Crash history shows a majority occurred during dry and daylight conditions. There is a distinct rear end crash pattern with many associated with stopped or slowing vehicles at the intersection, speeds and following too close. Deer were involved with seven crashes. For north bound traffic the intersection is hidden by vegetation and very inconspicuous. South bound speeds are high and the pavement condition on CR 500N at the intersection is very poor causing traffic to significantly reduce speeds. At night the intersection is very difficult to see. Pavement markings have faded and many raised pavement markings are missing.

Looking West onto CR 500N

Sight distance obstruction looking south

RSA Recommendations

Following the site investigation the RSA team came to the following conclusions for consideration by Tippecanoe County.

Short-Term Recommendations - To minimize rear end crashes the County should consider improving sight distance, additional signage and pavement markings. These measures will improve visibility at the intersection and driver awareness of the intersection. They will provide additional driver information about possible slowing vehicles making turning movements, thus improved driver predictability and reduce crashes.

CR 500N

The vegetation on the west corner obstructs the view of vehicles stopped on CR500N to see north bound traffic. The Stop bar is set back far enough that drivers have to stop and then move ahead to see traffic coming from the south on North River Road. Additional mowing and tree/shrub removal within the right-of-way is needed.

The reverse curves on CR500N limit the approach sight distance of the North River Road intersection, so a Stop Ahead warning sign should be installed. The team also recommended that the existing Reverse Turn Right sign at the top of the hill on CR500N should be augmented with supplemental lighting.

North River Road

For north bound traffic, the vegetation on the west corner obstructs the view of vehicles stopped on CR500N and additional mowing and tree/shrub removal within the right-of-way is needed. The painted pavement markings need to be repainted and several raised pavement markings need to be replaced. Both north and south bound traffic needs advanced warning signs of the intersection ahead.

Long-Term Recommendations - To minimize the run off the road and rear end type crashes the County should consider making significant improvements within the geographic scope of the project. These measures will eliminate the reverse curves and make improvements to the intersection that will remove the slow traffic from the through, higher speed, traffic and improve driver safety.

CR 500N

The road needs to be realigned and a new road constructed to eliminate the reverse curves. When combined with the use of a high friction pavement, it would minimize, or possibly eliminate, crashes on the hill. The advanced curve signs, with supplemental lighting, would still be needed. Due to the reported usage of pedestrians and bicyclists on this facility, the team recommends that some type of accommodation be given to these roadway users.

River Road

In addition to both north and south bound traffic needing advanced warning signs of the intersection ahead, additional lanes are needed at the intersection. A right turn/deceleration lane is needed for south bound traffic to separate it from the thru traffic. Likewise north bound traffic needs a passing blister or flyby to, again, separate it from the through traffic movements. Additionally, a general illumination light at the intersection may be needed to increase the awareness and visibility of the intersection.

Vicinity Maps

2012 Aerial Photography

Roadway Inventory

•County Road 500 North

-Functional Class = Local
-Lane widths averages 20', two 10' lanes
-Earth/gravel shoulders, 0'-1' wide
-Pavement condition is "Average", Overall Condition Index = 50 (100 Scale)
-Posted Speed Limit = 40 mph, 25 mph speed advisory on hill, 42 mph Ave. @ top of hill, 47 mph 85%
-Vehicle Class
·Motorcycles = .06%
·Cars/light trucks = 90.4%
·2-3 axle, single frame trucks = 6.3%
·Semi w/2 or more units = 1.8%
-Unknown = 1%
-Signage = Stop and Street Name signs eastbound, and Reverse Turn Right with 25 MPH Speed Advisory Plaque signs westbound

•North River Road (south leg)

-Functional Class = Minor Arterial
-Lane widths averages 24', two 12' lanes
-Asphalt shoulders, 3'–4' wide on west side, varies on east side 4'-7'
-Pavement condition is "Good", Overall Condition Index = 78 (100 Scale)
-Posted Speed Limit = 55 mph, 49 mph Ave., 57 mph 85%
-Vehicle Class
·Motorcycles = .08%
·Cars/light trucks = 82.4%
·2-3 axle, single frame trucks = 6%
·Semi w/2 or more units = 8.1%
-Unknown = 3%
-Signage = None

•North River Road (north leg)

-Functional Class = Minor Arterial
-Lane widths averages 24', two 12' lanes
-Asphalt shoulders, 3'–4' wide on west side, varies on east side 9'-10'
-Pavement condition is "Good", Overall Condition Index = 69 (100 Scale)
-Posted Speed Limit = 55 mph
-Vehicle Class
·Motorcycles = .08%
·Cars/light trucks = 84.1%
·2-3 axle, single frame trucks = 7%
·Semi w/2 or more units = 5.2%
-Unknown = 2.9%
-Signage = Curve Left (85') and Trail of Death (250') signs southbound

Crash Summaries

January 2010-February 2015

General Summary	
Number of Crashes	41
Property Damage Only	31
Injury Crashes	10
Fatalities	0

Manner of Collision	
RAN OFF ROAD	12
REAR END	9
HEAD ON	6
RIGHT ANGLE	6
OPPOSITE DIRECTION SIDESWIPE	3
BACKING CRASH	2
NON-COLLISION	2
COLLISION WITH DEER	1

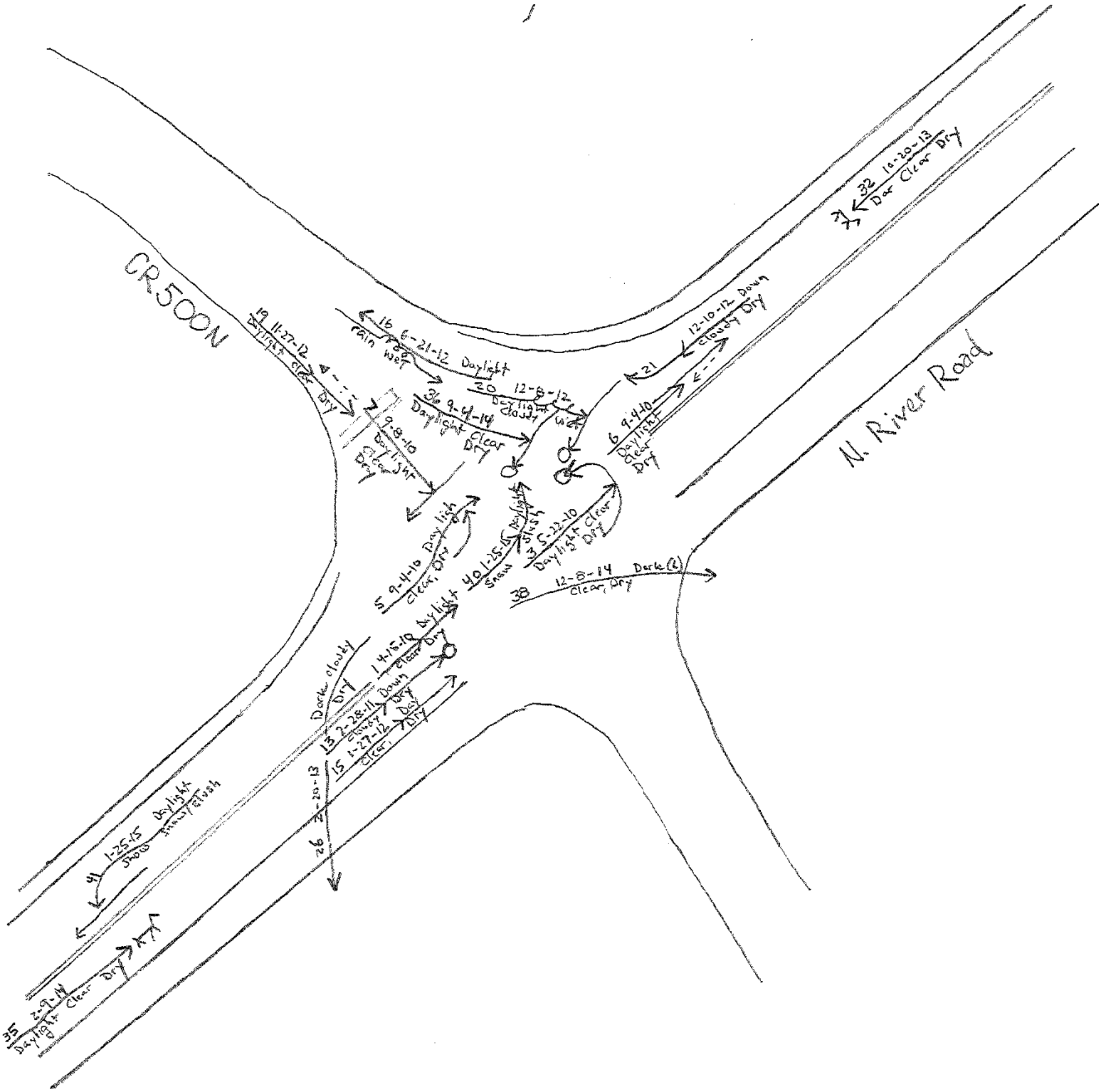
Primary Factor	
ANIMAL/OBJECT IN ROADWAY	7
SPEED TOO FAST FOR WEATHER CONDITIONS	7
ROADWAY SURFACE CONDITION	6
FOLLOWING TOO CLOSELY	5
RAN OFF ROAD RIGHT	5
FAILURE TO YIELD RIGHT OF WAY	3
LEFT OF CENTER	2
OTHER (DRIVER) - EXPLAIN IN NARRATIVE	2
UNSAFE SPEED	2
UNSAFE BACKING	1
IMPROPER TURNING	1

Light Condition	
DAYLIGHT	23
DARK (NOT LIGHTED)	14
DAWN/DUSK	3
DARK (LIGHTED)	1

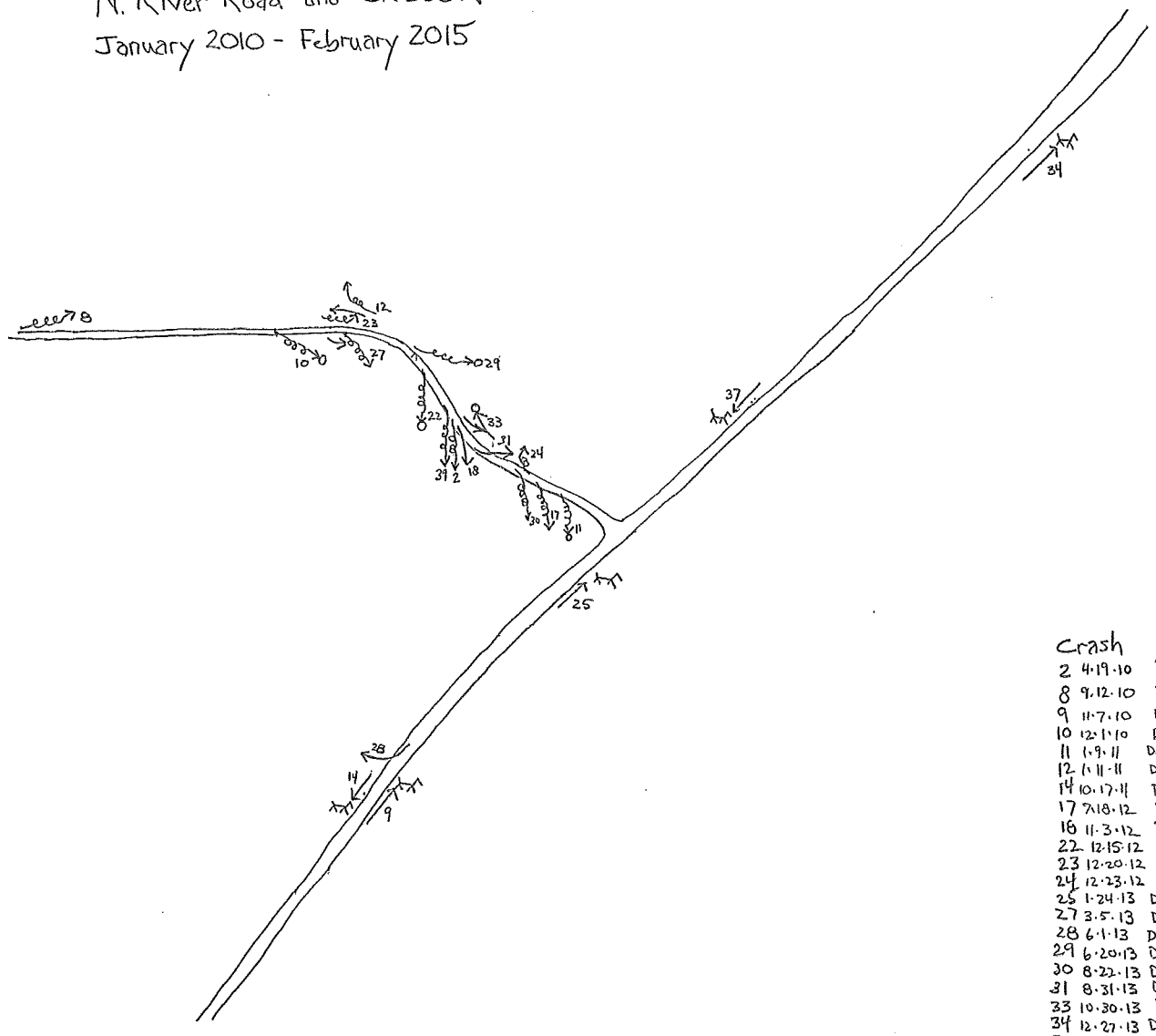
Weather Condition	
CLEAR	22
CLOUDY	9
SNOW	5
RAIN	3
SLEET/HAIL/FREEZING RAIN	2

Surface Condition	
DRY	23
WET	11
SNOW/SLUSH	5
ICE	2

Damage Estimate	
$25001 TO $50000	2
$10001 TO $25000	2
$5001 TO $10000	12
$2501 TO $5000	12
$1001 TO $2500	11
UNDER $1001	2


CR 500N
N. River Road
19 11-27-12 Daylight Clear Dry
16 6-21-12 Daylight Rain Wet
36 9-4-14 Daylight Clear Dry
20 12-8-12 Daylight Cloudy Wet
9-8-10 Daylight Clear Dry
21
12-10-12 Dawn Cloudy Dry
6 9-4-10 Daylight Clear Dry
32 10-20-13 Dark Clear Dry
5 9-4-10 Daylight Clear, Dry
40 1-25-15 Daylight Snow
13 5-22-10 Daylight Clear Dry
38 12-8-14 Dark (L) Clear, Dry
Dark cloudy Dry
14 10-19 Daylight Clear Dry
13 2-28-11 Dawn Cloudy Dry
15 1-27-12 Day Clear Dry
26 7-20-13
41 1-25-15 Daylight Snow/Slush
35 2-9-14 Daylight Clear Dry

N. River Road and CR 500N
January 2010 - February 2015



Crash

2	4.19.10	Daylight, clear, Dry
8	9.12.10	Dark, Clear, Dry
9	11.7.10	Dawn, clear, Dry
10	12.1.10	Dark, Snow, Snow/Slush
11	1.9.11	Daylight, Clear, Wet
12	1.11.11	Dark, Snow, Snow/Slush
14	10.17.11	Dark, Clear, Dry
17	7.18.12	Daylight, Clear, Wet
18	11.3.12	Daylight, Cloudy, Wet
22	12.15.12	Dark, Rain, Wet
23	12.20.12	Daylight, Cloudy, Wet
24	12.23.12	Dark, Clear, Dry
25	1.24.13	Dark, Clear, Dry
27	3.5.13	Daylight, Snow, Snow/Slush
28	6.1.13	Dark, Rain, Wet
29	6.20.13	Daylight, Cloudy, Dry
30	8.22.13	Daylight, Cloudy, Wet
31	8.31.13	Daylight, Clear, Wet
33	10.30.13	Daylight, Cloudy, Wet
34	12.27.13	Daylight, Clear, Dry
37	11.8.14	Dark, Clear, Dry
39	1.4.15	Dark, Sleet/Hail/ Ice

0 150 300 450

Crash Number	Summary
1	Vehicle stopped waiting to turn. Another vehicle did not react in time to stopped vehicle caused rear end crash.
2	Vehicle traveling at high speed through curve when driver saw another vehicle traveling opposite direction on curve. Driver tried to move to keep a safe distance from other vehicle and it began to skid. Vehicle ran off road.
3	Vehicle in front began to attempt a U-turn. Vehicle behind did not have enough time to stop, and hit the turning vehicle.
4	Three vehicles traveling closely together. Vehicle in front hit brakes and stopped. 2nd vehicle also hit brakes and stopped. 3rd vehicle unable to brake in time because of following too closely.
5	Vehicle stopped waiting to turn. Two vehicles behind swerved around to avoid stopped vehicle. Next vehicle behind was pulling large trailer, did not feel safe swerving. Tried to pass on left, and stopped vehicle turned into the vehicle with the trailer.
6	Towing vehicle parked assisting police vehicle at the scene of another crash. Towing vehicle attempting to help vehicle with trailer get out of ditch. Vehicle with trailer backed trailer into towing vehicle while attempting to get out of ditch.
7	Vehicle traveling through intersection when another vehicle failed to yield right of way and caused a right angle crash.
8	Vehicle traveling at high speed through curve when driver saw another vehicle traveling opposite direction on curve. Driver tried to brake to avoid a possible collision, and brakes locked up. Vehicle ran off road and crashed into some trees.
9	Deer jumped onto road. Driver did not have enough time to stop and hit the deer.
10	Road was snow-covered and slick. When vehicle was trying to negotiate curve, it spun out and overturned into a ditch.
11	Packed snow on edges of road. Vehicle traveling through curve when driver saw another vehicle headed through curve. Driver felt other vehicle was close to centerline, so driver moved over and hit a patch of snow, causing vehicle to run off road.
12	Road was snow-covered and slick. This caused vehicle to run off the road and hit a mailbox.
13	Driver of vehicle was drowsy and was not paying attention to road ahead. Did not realize that vehicle ahead was slowing to turn and rear ended the turning vehicle.
14	Deer jumped onto road. Driver did not have enough time to stop and hit the deer.
15	Vehicle was waiting to turn, which caused another vehicle to slow down. A third vehicle was following too closely and hit the slowing vehicle.
16	Road was slick because of rain. Vehicle was approaching intersection and swerved to avoid a collision with another vehicle. This movement caused the vehicle's brakes to lock up, and the driver lost control of the vehicle, causing a crash with a third vehicle that was turning.
17	Road was slick because of rain. Vehicle was approaching curve, when driver saw another vehicle traveling in the opposite direction. Driver applied breaks, slid off road and struck a tree.
18	Vehicle traveling through curve, driver lost control when trying to avoid vehicle traveling in the opposite direction. This caused vehicle to run off the road.
19	Vehicle stopped at intersection. Driver of vehicle saw bus trying to turn, and backed up to give bus more room. The vehicle then backed up into another vehicle.
20	Vehicle attempting to turn left. Driver of vehicle lost control during turn, causing vehicle to spin out and hit an oncoming vehicle.

21	Vehicle slowing down to avoid hitting another vehicle that was turning. The driver of a third vehicle was distracted temporarily and did not stop in time to avoid hitting the slowing vehicle.
22	Road was slick because of rain. Vehicle was trying to travel through curve, when driver lost control. Vehicle ran off the road.
23	Road was slick because of rain. Vehicle entered a curve, lost control, and traveled left of center, hitting an oncoming vehicle.
24	Vehicle traveling in curve, driver reached down to change radio station. This caused driver to lose control and run off the road.
25	Deer jumped onto road. Driver did not have enough time to stop and hit the deer.
26	Driver of vehicle operating under the influence of drugs. Lost control of vehicle, ran off the road and hit a chain link fence.
27	Road was snow-covered and slick. Vehicle traveling downhill, unable to stop in time to avoid hitting another vehicle.
28	Road was slick because of rain. Driver lost control of vehicle and ran off the road, striking a vehicle parked in an open garage in a house by the side ofthe road.
29	Vehicle's right side tires were off the roadway. Driver tried to correct, over-corrected, and ran off the road, hitting a fence.
30	Road was slick because of rain. Vehicle entered a curve, lost control, and ran off the road.
31	Vehicle entered curve, and began to brake. Brakes locked up, causing vehicle to run off road and strike a small tree.
32	Deer jumped onto road. Driver did not have enough time to stop and hit the deer.
33	Vehicle entered curve, and crossed center line. This caused vehicle to strike another vehicle traveling in the opposite direction.
34	Deer jumped onto road. Driver did not have enough time to stop and hit the deer.
35	Deer jumped onto road. Driver did not have enough time to stop and hit the deer.
36	Vehicle attempting to turn. Did not yield to cross traffic in intersection, and turned in front of another vehicle, causing a crash.
37	Deer jumped onto road. Driver did not have enough time to stop and hit the deer.
38	Vehicle at intersection, driver lost control, and ran off the road. Vehicle hit a utility box.
39	Road was icy and slick. Driver lost control of vehicle when entering curve, and ran off the road into a ditch.
40	Vehicle slowing down to allow a vehicle in front to turn. Vehicle behind did not stop in time and hit slowing vehicle.
41	Road was slick because of snow and ice. Vehicle saw stopped vehicle, and attempted to brake. Brakes locked up, and driver lost control of vehicle, causing it to slide into a stopped vehicle.

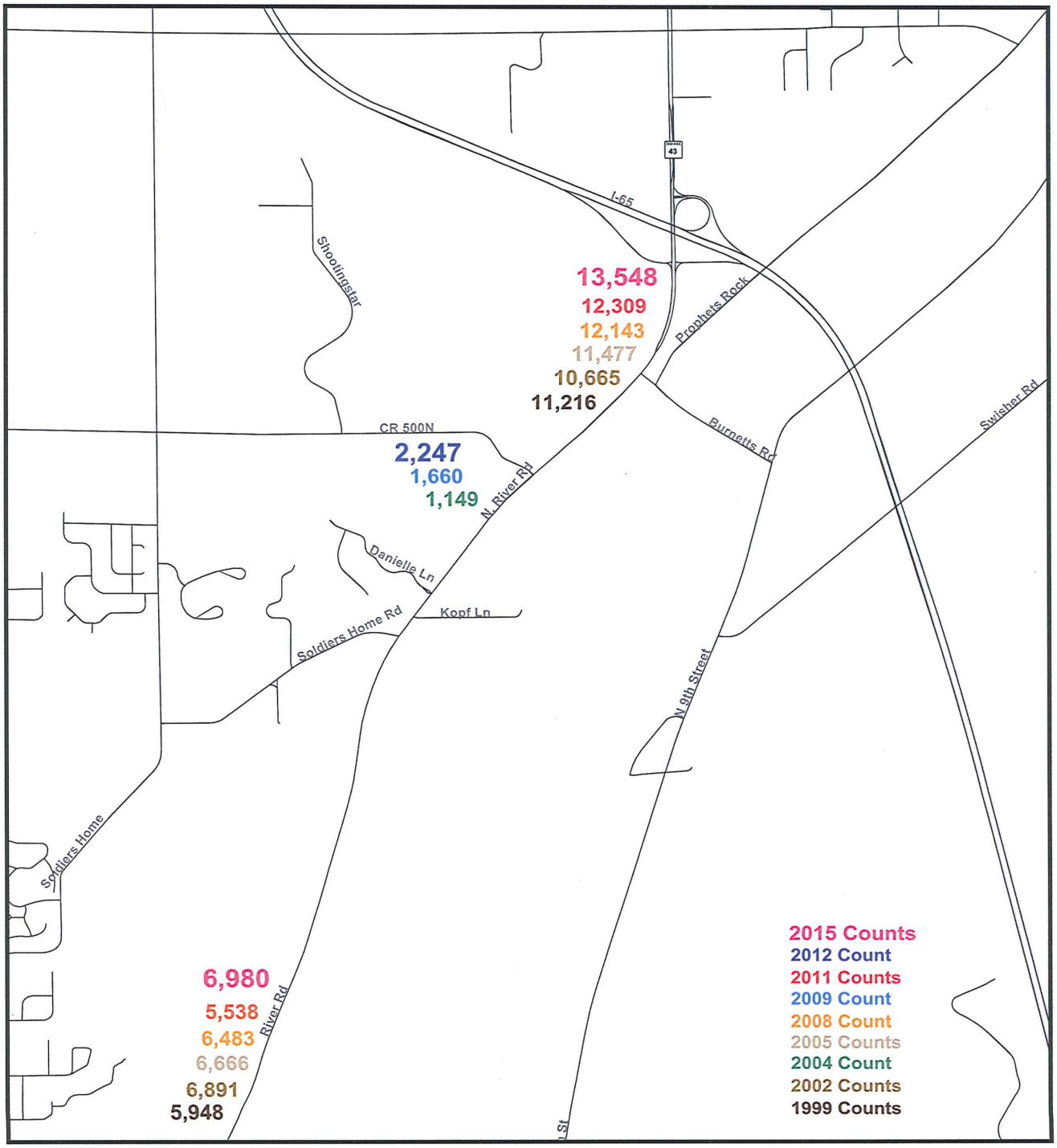
North River at CR 500N

Crash Report Information, January 2010 through February 2015

#	Date	Time	# of Vehicles Involved	Number Injured	Number Dead	Manner of Collision	Primary Factor	Light Condition	Weather Condition	Surface Condition	Damage Estimate
1	4/15/2010	1630	2	0	0	REAR END	FOLLOWING TOO CLOSELY	DAYLIGHT	CLEAR	DRY	$1001 TO $2500
2	4/19/2010	1352	1	0	0	RAN OFF ROAD	UNSAFE SPEED	DAYLIGHT	CLEAR	DRY	$2501 TO $5000
3	5/22/2010	1207	2	2	0	RIGHT ANGLE	IMPROPER TURNING	DAYLIGHT	CLEAR	DRY	$5001 TO $10000
4	6/30/2010	1604	2	0	0	REAR END	FOLLOWING TOO CLOSELY	DAYLIGHT	CLEAR	DRY	$2501 TO $5000
5	9/4/2010	1239	2	0	0	REAR END	FOLLOWING TOO CLOSELY	DAYLIGHT	CLEAR	DRY	$5001 TO $10000
6	9/4/2010	1353	2	0	0	BACKING CRASH	OTHER (DRIVER) - EXPLAIN IN NARRATIVE	DAYLIGHT	CLEAR	DRY	$1001 TO $2500
7	9/8/2010	1658	2	0	0	RIGHT ANGLE	FAILURE TO YIELD RIGHT OF WAY	DAYLIGHT	CLEAR	DRY	$2501 TO $5000
8	9/12/2010	0030	1	0	0	RAN OFF ROAD	LEFT OF CENTER	DARK (NOT LIGHTED)	CLEAR	DRY	$5001 TO $10000
9	11/7/2010	1711	1	0	0	HEAD ON	ANIMAL/OBJECT IN ROADWAY	DAWN/DUSK	CLEAR	DRY	$1001 TO $2500
10	12/1/2010	0705	1	1	0	RAN OFF ROAD	SPEED TOO FAST FOR WEATHER CONDITIONS	DARK (NOT LIGHTED)	SNOW	SNOW/SLUSH	$2501 TO $5000
11	1/9/2011	1005	1	1	0	RAN OFF ROAD	ROADWAY SURFACE CONDITION	DAYLIGHT	CLEAR	WET	UNDER $1001
12	1/11/2011	0727	1	0	0	RAN OFF ROAD	ROADWAY SURFACE CONDITION	DARK (NOT LIGHTED)	SNOW	SNOW/SLUSH	UNDER $1001
13	2/28/2011	0713	2	4	0	REAR END	OTHER (DRIVER) - EXPLAIN IN NARRATIVE	DAWN/DUSK	CLOUDY	DRY	$2501 TO $5000
14	10/17/2011	0602	1	0	0	HEAD ON	ANIMAL/OBJECT IN ROADWAY	DARK (NOT LIGHTED)	CLEAR	DRY	$1001 TO $2500
15	1/27/2012	1409	2	0	0	REAR END	FOLLOWING TOO CLOSELY	DAYLIGHT	CLEAR	DRY	$1001 TO $2500
16	6/21/2012	1802	2	0	0	OPPOSITE DIRECTION SIDESWIPE	ROADWAY SURFACE CONDITION	DAYLIGHT	RAIN	WET	$2501 TO $5000
17	7/18/2012	1055	1	0	0	HEAD ON	SPEED TOO FAST FOR WEATHER CONDITIONS	DAYLIGHT	CLEAR	WET	$5001 TO $10000
18	11/3/2012	1533	1	0	0	RAN OFF ROAD	SPEED TOO FAST FOR WEATHER CONDITIONS	DAYLIGHT	CLOUDY	WET	$5001 TO $10000
19	11/27/2012	0824	2	0	0	BACKING CRASH	UNSAFE BACKING	DAYLIGHT	CLEAR	DRY	$1001 TO $2500
20	12/8/2012	1252	2	1	0	RIGHT ANGLE	FAILURE TO YIELD RIGHT OF WAY	DAYLIGHT	CLOUDY	WET	$5001 TO $10000

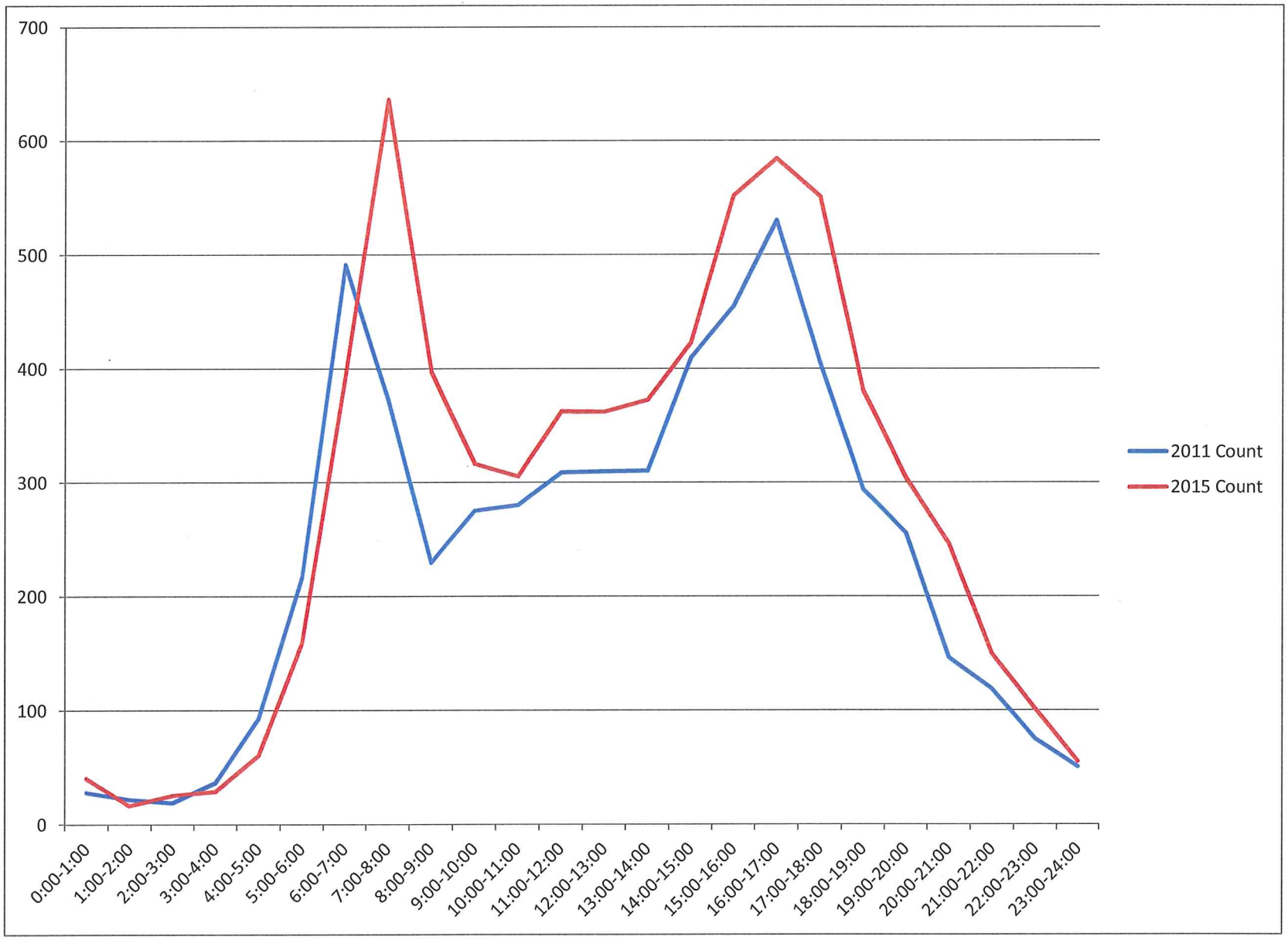
21	12/10/2012	0749	2	0	0	REAR END	FOLLOWING TOO CLOSELY	DAWN/DUSK	CLOUDY	DRY	$2501 TO $5000
22	12/15/2012	1916	1	1	0	RAN OFF ROAD	RAN OFF ROAD RIGHT	DARK (NOT LIGHTED)	RAIN	WET	$5001 TO $10000
23	12/20/2012	1143	2	0	0	OPPOSITE DIRECTION SIDESWIPE	SPEED TOO FAST FOR WEATHER CONDITIONS	DAYLIGHT	CLOUDY	WET	$2501 TO $5000
24	12/23/2012	1857	1	0	0	RAN OFF ROAD	RAN OFF ROAD RIGHT	DARK (NOT LIGHTED)	CLEAR	DRY	$25001 TO $50000
25	1/24/2013	0637	1	0	0	HEAD ON	ANIMAL/OBJECT IN ROADWAY	DARK (NOT LIGHTED)	CLEAR	DRY	$1001 TO $2500
26	2/20/2013	2005	1	0	0	RAN OFF ROAD	RAN OFF ROAD RIGHT	DARK (NOT LIGHTED)	CLOUDY	DRY	$1001 TO $2500
27	3/5/2013	1737	2	0	0	REAR END	ROADWAY SURFACE CONDITION	DAYLIGHT	SNOW	SNOW/SLUSH	$1001 TO $2500
28	6/1/2013	2321	2	0	0	HEAD ON	ROADWAY SURFACE CONDITION	DARK (NOT LIGHTED)	RAIN	WET	$5001 TO $10000
29	6/20/2013	1358	1	1	0	RAN OFF ROAD	RAN OFF ROAD RIGHT	DAYLIGHT	CLOUDY	DRY	$25001 TO $50000
30	8/22/2013	1455	1	0	0	NON-COLLISION	SPEED TOO FAST FOR WEATHER CONDITIONS	DAYLIGHT	CLOUDY	WET	$1001 TO $2500
31	8/31/2013	1540	1	0	0	NON-COLLISION	SPEED TOO FAST FOR WEATHER CONDITIONS	DAYLIGHT	CLEAR	WET	$2501 TO $5000
32	10/20/2013	0700	1	0	0	RIGHT ANGLE	ANIMAL/OBJECT IN ROADWAY	DARK (NOT LIGHTED)	CLEAR	DRY	$1001 TO $2500
33	10/30/2013	1619	3	1	0	OPPOSITE DIRECTION SIDESWIPE	LEFT OF CENTER	DAYLIGHT	CLOUDY	WET	$10001 TO $25000
34	12/27/2013	1114	1	0	0	HEAD ON	ANIMAL/OBJECT IN ROADWAY	DAYLIGHT	CLEAR	DRY	$2501 TO $5000
35	2/9/14	0645	1	0	0	RIGHT ANGLE	ANIMAL/OBJECT IN ROADWAY	DARK (NOT LIGHTED)	SNOW	SNOW/SLUSH	$2501 TO $5000
36	9/4/2014	1133	2	1	0	RIGHT ANGLE	FAILURE TO YIELD RIGHT OF WAY	DAYLIGHT	CLEAR	DRY	$10001 TO $25000
37	11/8/2014	2150	1	0	0	COLLISION WITH DEER	ANIMAL/OBJECT IN ROADWAY	DARK (NOT LIGHTED)	CLEAR	DRY	$2501 TO $5000
38	12/8/2014	0052	1	0	0	RAN OFF ROAD	RAN OFF ROAD RIGHT	DARK (LIGHTED)	CLEAR	DRY	$5001 TO $10000
39	1/4/2015	1735	1	0	0	RAN OFF ROAD	ROADWAY SURFACE CONDITION	DARK (NOT LIGHTED)	SLEET/HAIL	ICE	$5001 TO $10000
40	1/25/2015	1640	2	0	0	REAR END	SPEED TOO FAST FOR WEATHER CONDITIONS	DARK (NOT LIGHTED)	SLEET/HAIL	ICE	$5001 TO $10000
41	1/25/2015	1654	2	2	0	REAR END	UNSAFE SPEED	DAYLIGHT	SNOW	SNOW/SLUSH	$5001 TO $10000

Traffic Volumes

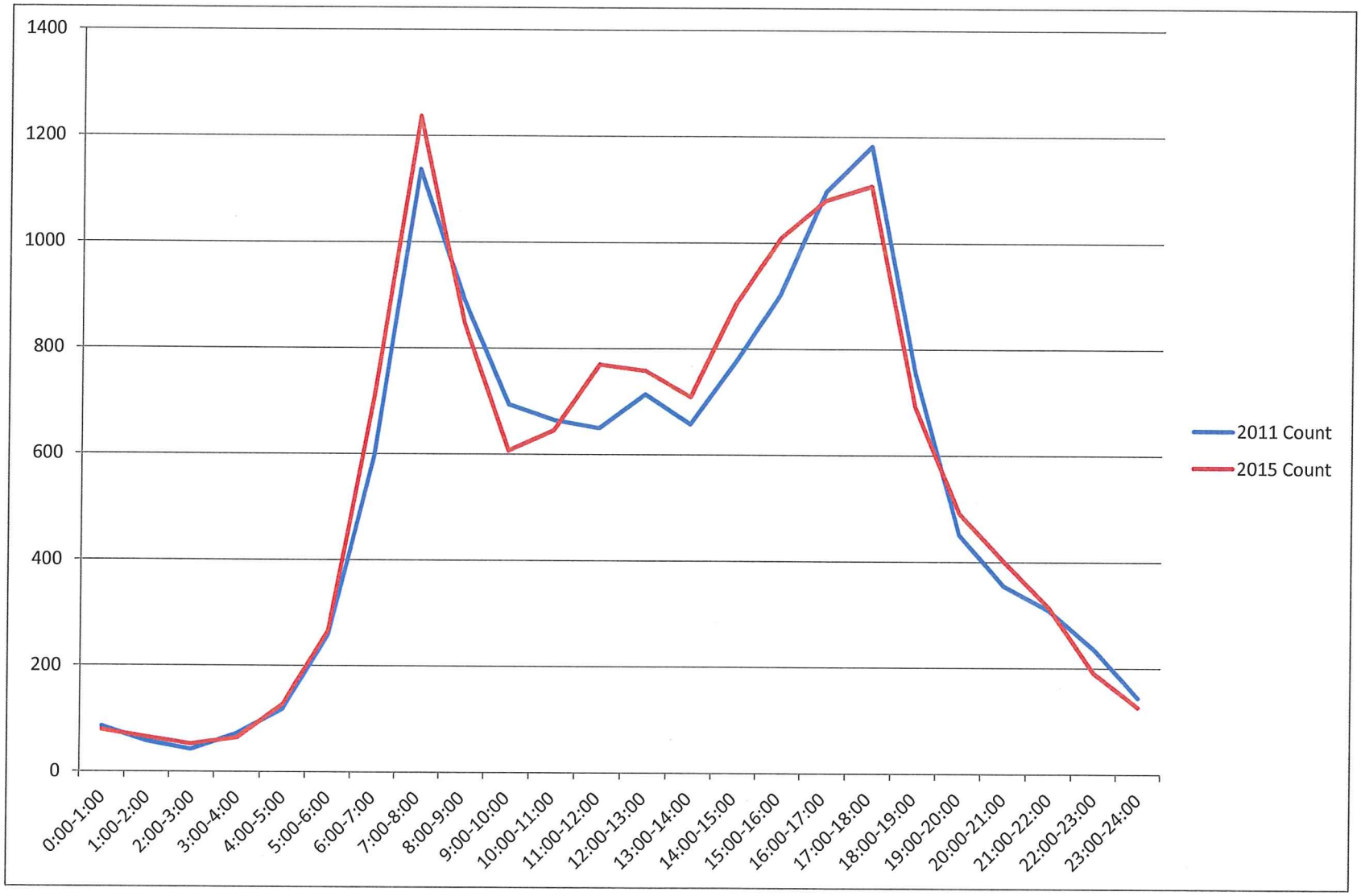


Prepared by the Area Plan Commission of Tippecanoe County, May 21, 2015

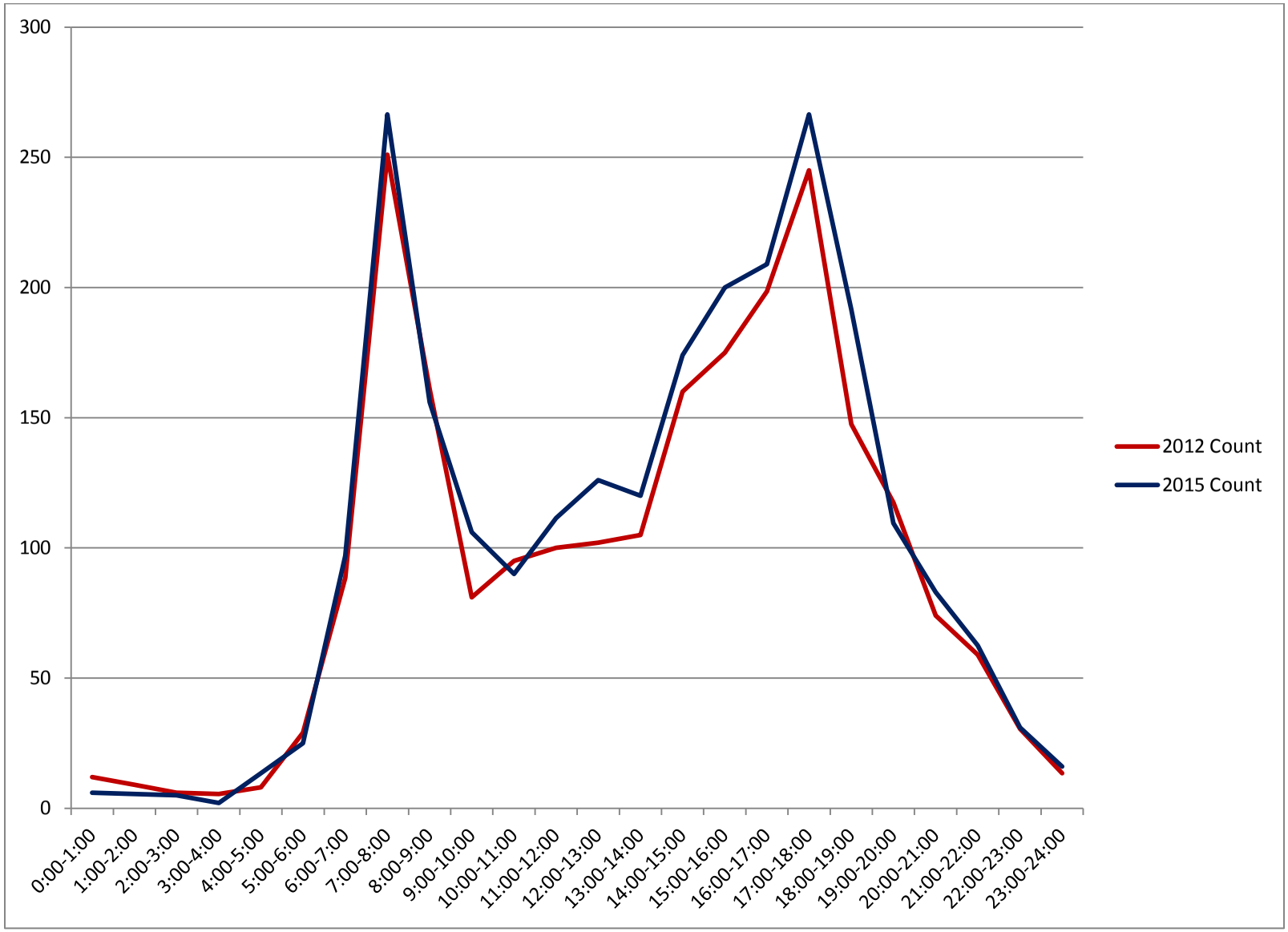
INDOT Traffic Count, North River Road South of Soldiers Home Road



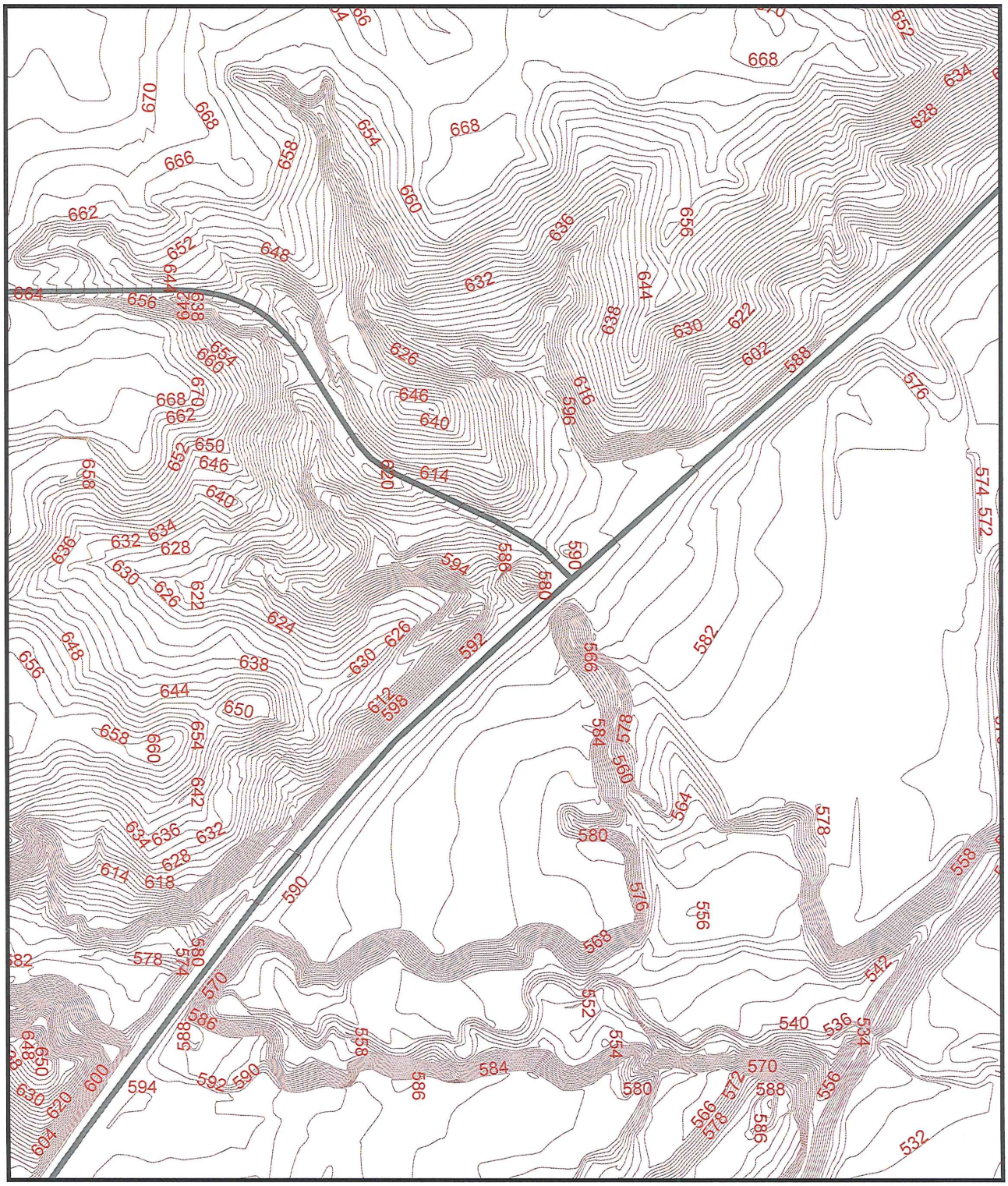
INDOT Traffic Count, North River Road South of I-65



Tippecanoe County Traffic Count, County Road 500 North, West of River Road



Topographic Map



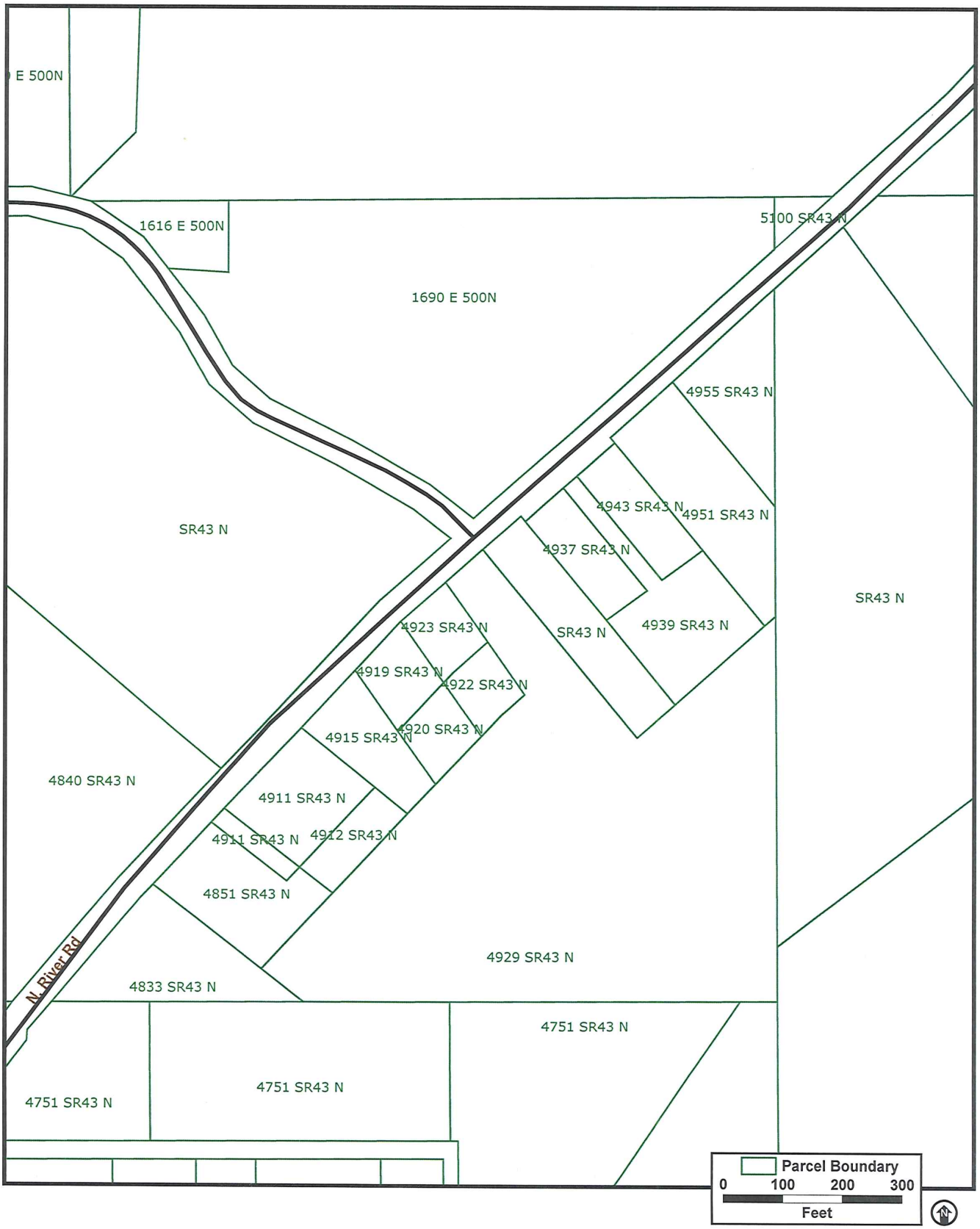
Elevation Contour

0 150 300

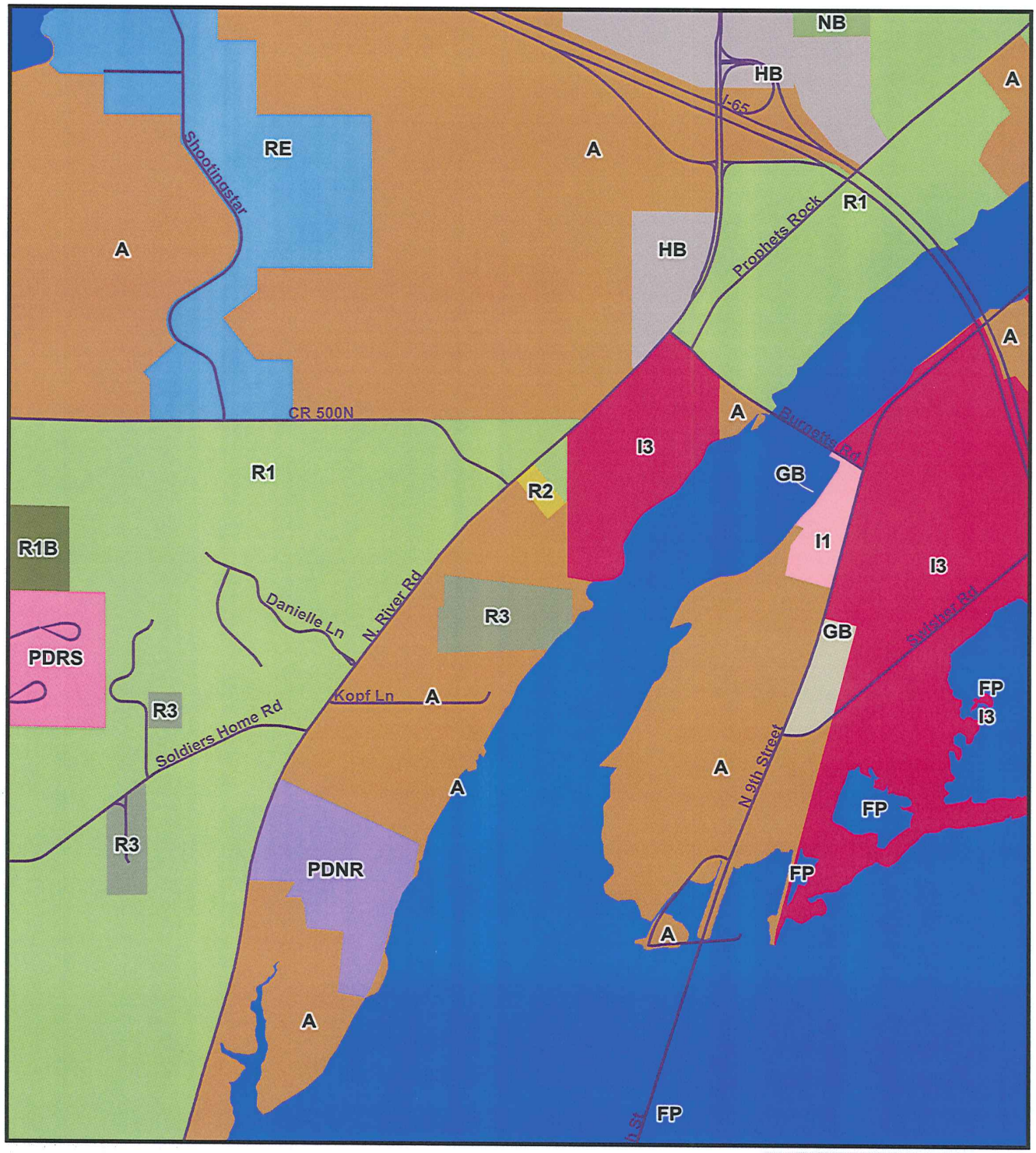
Feet

Prepared by the Area Plan Comission of Tippecanoe County, April 28, 2015

Property Boundaries Map



Zoning Map



Map Legend
Zone District
0 500 1,000 1,500
Feet

Prepared by the Area Plan Commission of Tippecanoe County, May 7, 2015

Additional Pictures

Looking north on North River Road

Looking south onto North River Road

Pavement condition looking north

Pavement condition looking west

Looking east into the private drive

Looking west onto CR500N

North River Road and CR 500 N

Road Safety Audit Check List

Facality Type: Rural two lane "T" intersection

Date: June 18, 2015 Time: _____ Weather: _____

	Yes	Maybe	No or N/A
Moving Lanes			
Lane widths are inadequate			
Number of lanes is inadequate for traffic			
Lanes abruptly end			
Auxiliary / Turning Lanes			
Inadequate advance warning of lane drop			
Auxiliary or turning lane too short			
Auxiliary or turning lane not properly marked			
Auxiliary or turning lane needed			
Driveways			
Driveways too close to intersection			
Driveways too closely spaced			
Inadequate visibility of driveways			
Shoulders			
Shoulder widths are inadequate			
Inappropriate shoulder surface			
Shoulders are poorly maintained			
Insufficient contrast of shoulder			
Drop off at edge of pavement			
Horizontal and Vertical Alignment			
Horizontal or vertical alignment reduces visibility			
Abrupt change in elevation			
Inadequate visibility at sag or crest curves			
Inadequate or excessive superelevation			
Curves may cause sliding in adverse weather			
Pavement Markings/Delineation			
Pavement markings not clearly visible			
Necessary pavement markings not present			
Too many pavement markings present			
Pavement markings inappropriate for location			
Old/conflicting pavement marking not removed			
Inadequate retroflectivity of existing markings			
Road markings lack sufficient contrast with pavement surface			

North River Road and CR 500 N

Road Safety Audit Check List

	Yes	Maybe	No or N/A
Light Conditions			
Inadequate visibility at night			
Severe headlight glare during night conditions			
Lights create glare on approach roadways			
Lighting interferes with traffic signs			
Inadequate lighting for signs			
Signs			
Inadequate visibility of signs			
Incorrect location, offset or height of signs			
Sign locations obstruct visibility			
Signs are missing, redundant, or don't meet specification			
Signs are not properly maintained			
Signs are contradictory			
Existing signs are not applicable			
Signs cannot be read from adequate safe distance			
Required warning or regulatory signs are not present			
Sight Distance			
Inadequate sight distance			
Sight lines are obstructed by signs, building, vegetation, etc.			
Sight lines are obstructed temporarily (cars, snow, etc.)			
Skid Resistance			
Some locations have inadequate skid resistance			
Pavement Defects			
Abrubt changes in pavement condition			
Pavement defects exist which could result in loss of control			
Pavement defects visible (potholes, rutting, etc.)			
Change in surface type			
Pavement has excessive drop offs or poor transitions			
Presence of loose aggregate in pavement			
Presence of bleeding pavement due to excessive asphalt			
Drainage			
Presence of ponding or sheet flow on pavement			
Drainage inappropriate for topography			
Surface flooding or overflow from drainage structures or streams			
Unprotected culverts or other drainage structures			
Embankments or ditches are too steep			

North River Road and CR 500 N

Road Safety Audit Check List

	Yes	Maybe	No or N/A
Barriers			
Clear zone is narrow			
Guardrail is damaged or inadequate			
Driver Behavior			
Overrepresentation of particular age group			
Many drivers violate the posted speed limit			
Skid marks			
Frequent off tracking			
Illegal parking			

Initial Recommendations / Additional Comments:

_____

_____

_____

_____

_____

_____

_____
Initial