

# **Indiana 2011 Five-Percent Report**

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## 1.0 Introduction

The federal transportation act, SAFETEA-LU, created the Highway Safety Improvement Program (HSIP) as a new core federal aid funding source with the purpose of reducing traffic fatalities and serious injuries. States submit annual reports that identify highway locations exhibiting the most severe safety needs that represent not less than five percent of crashes in their areas. The intent of this provision is to increase public awareness of the highway safety needs and challenges around the country.

There are approximately 95,600 miles of public roads in Indiana on which total travel per year is nearly 74 billion miles. State roads, U.S. highways, and interstates (those on the state (INDOT)-jurisdictional network) make up about 11,200 miles of that total, or roughly 12 percent.

For the years of 2008 – 2010 Indiana on average experienced approximately 199,000 traffic crashes statewide, which included an average of 3529 fatal and incapacitating injury crashes, 34,600 non-incapacitating and possible injury crashes, and 160,700 property damage only crashes. The fatal crash events for the three years resulted in a three year average of 754 deaths annually. Incapacitating injury crash events resulted in 4,617 incapacitated persons, and non-incapacitating injury crash event resulted in 48,127 non-incapacitated persons. The personal, societal, and economic costs of these crashes are staggering.

Factors contributing to traffic crashes and resulting costs are numerous, complex, and interrelated. Among them are driver behavior, including distracted driving, speeding, driving while impaired, aggressive driving, failure to use seatbelts, and operating a car or truck while drowsy or intoxicated. There are factors related to vehicle (e.g., tire tread, presence of on-board safety features like anti-lock brake etc.), enforcement (e.g. intensity of ticketing, patrolling), weather events, and circumstances relating to emergency responders. Also, the engineering status of the various elements of the physical road infrastructure is a factor in crash risk, such as the sharpness of curves, the shoulder width, the sight distance, and the condition of traffic control devices.

Since many factors affect road safety, the countermeasures available to improve operating conditions at select sites are also numerous and diverse, often addressing more than one factor. These measures may include targeted police enforcement, (driver) education, or road engineering enhancement, as well as many other practices.

Before adequate safety countermeasures can be applied, the road network must be screened to identify locations that need safety improvements. This 2011 Five-Percent Report provides a list of Indiana locations with safety needs. This report also presents the screening method and the accompanied implementation effort. Since the 2010 Five-Percent Report, the following advancements have been made and incorporated in this year's report:

- The latest 2010 crashes were assigned to segments and intersections. Selection and ranking criteria are based on crashes reported for the 2008-2010 period.
- The safety performance functions for state roads were re-estimated using the new 2010 crash data.
- Another important improvement was updating the Indiana average crash costs for various types of locations consistent with the screening method. This update has allowed more accurate estimation of the economic costs caused by crashes at screening locations. The unit costs for fatal and incapacitating injury (KA) crashes, non-incapacitating and possible injury (BC) crashes and PDO crashes were calculated for each type of segment and intersection.
- The crash assignment method utilized in the Indiana network was updated for road segments and intersections. For this method, intersections are defined as a point with 150 foot buffer around them. All crashes that occur within a 150 foot radius of the intersection point are assigned to the intersection. For the screening purpose, all intersections that are separated by less than 250 feet measured between their centers were considered jointly.
- The Indiana road segment network was divided into small pieces approximately 0.1 miles long. This configuration of the road segment network was modeled to determine if safety performance functions would improve. Due to the assignment of crashes, it was difficult to obtain large groups of crashes on small segments, causing the safety performance models to perform poorly. This network was clustered according to the specifications of *road segments* in the following section of this report, and the safety performance functions for this configuration were developed.
- Both Crash Cost Index ( $I_{CC}$ ) and Crash Frequency Index ( $I_{CF}$ ) were estimated for each segment and road type to rank state and local roads.
- This year, safety performance functions were developed for bridge facilities. This was accomplished using data from the National Bridge Inventory (NBI) and the electronic representation of the Indiana road network.

## 2.0 Identification Method

Road locations with severe safety needs are identified using ArcGIS. Most of the steps leading to the identification of the five percent locations were facilitated through the mapping features of ArcGIS. Several ArcGIS features like 'Proximity Analysis' and 'Model Builder' were used. Statistical models and analysis were carried out with SAS software.

### Road Locations

A *road location* is a road intersection, an interchange roadway segment, a road segment or a ramp.

A *road intersection* is a portion of the roads within the intersection impact zone. The intersection center is defined as a point, and the 150-foot segments adjacent to the intersection point define the intersection impact zone. For screening purposes, the intersections separated by less than 250 feet between intersection centers have been grouped together due to a strong dependence between them. Each individual intersection of a group is described separately in the resulted tables but with the ID of the group.

A *road interchange* is a portion of the roads within the interchange impact zone. The interchange impact zone consists of freeway and non-freeway segments. For freeway segments the interchange zone extends 1500 ft beyond the farthest merging or diverging point. The non-freeway segments extend 250 ft beyond the farthest merging or diverging point.

A *road segment* is a road stretch between the intersection/interchange impact zones. Long road segments are divided into smaller parts to allow more specific location with safety needs (such as curves). Rural segments longer than 0.5 mile are divided into sub-segments whose lengths are as close to 0.5 mile as possible. Urban road segments longer than 0.25 mile are divided into sub-segments whose lengths are as close to 0.25 mile as possible.

A *ramp* is the part of an interchange that permits traffic from one highway to pass through the junction without directly crossing the other traffic stream. For the five percent report, the ramp layer used for analysis has three major configurations: *diagonal ramps* or simply ramps which are commonly used in a diamond interchange, *loop ramps* or simply loops commonly used in cloverleaf interchanges and *connectors*. There are a few miscellaneous categories as well. For developing safety performance functions connectors and other miscellaneous configurations are grouped together as 'other' type.

A *bridge* is a structure built for allowing vehicles to pass over an obstacle. For the five-percent report, the bridge layer is a part of the road segment layer, and can consist of one or more road segments. The bridge crashes are also reflected on road segment crashes.

Evaluated in the 2011 Five-Percent Report are 342,084 intersections (39,232 state intersections and 302,852 local intersections) and 657,893 road segments (19,633 state

segments and 638,260 local segments). An additional 685 road interchange segments (303 freeway segments and 382 non-freeway segments) represent a total of 340 interchange facilities. Interchange facilities include diamond, full and partial clover-leaf, directional, trumpet, jug-handle and other types of facilities. All freeway interchange segments are part of the state road system while the non-freeway roadway segments can be state or local segments. Finally, 2,085 ramps (1,549 ramps, 391 loops, and 145 other connectors) and 1,790 bridges were evaluated in this report.

## Measures of Safety

Crashes reported for the last three years (2008-2010) were assigned to intersections, road segments (including the interchange segments) and ramps. Crash severity is classified in five categories:

1. Property damage only crashes (O-type),
2. Possible Injury Crashes (C-type)
3. Non-incapacitating injury crashes (B-type),
4. Incapacitating injury crashes (A-type), and
5. Fatal crashes (K-type).

The average cost of a damaged vehicle is \$3,600 (source: National Highway Traffic Safety Administration 2000, The Economic Impact of Motor Vehicle Crashes). Cost for non-incapacitating (B) or possible (C) injury type crash is considered as \$12,400 and \$21,900, respectively. On the other hand the average cost of one fatality and one incapacitating injury is \$1,290,000 and \$67,800, respectively (source: National Safety Council, 2010, [http://www.nsc.org/news\\_resources/injury\\_and\\_death\\_statistics/Pages/EstimatingtheCostsofUnintentionalInjuries.aspx](http://www.nsc.org/news_resources/injury_and_death_statistics/Pages/EstimatingtheCostsofUnintentionalInjuries.aspx)). Therefore, the cost of a single crash is calculated as:

where:

- C = crash cost (\$)
- KP = fatalities (persons)
- AP = incapacitating injuries (persons)
- BP = non-incapacitating injuries (persons)
- CP = possible injuries (person)
- DV = number of damaged vehicles

The average cost of a crash in a group of locations is the total cost of crashes in the group divided by the number of crashes.

## Safety Performance Measures

### State Road Segments and Intersections

For screening purposes, the number of KA-type crashes and crash cost and frequency indices were primarily used. These terms are discussed below:

1. All different categories of crashes based on severity can be grouped as follows: number of fatal and incapacitating injury crashes (KA), number of non-incapacitating and possible injury crashes (BC) and PDO crashes. However, for screening the road network, only KA type crashes are considered.
2. The crash cost index ( $I_{CC}$ ) is a secondary but important measure of statistical significance. A value of the crash cost index higher than a threshold value (e.g. 1.5 or 2) indicates that the total crash cost at a location is significantly higher than the cost expected for the exposure and the type of location. Use of this indicator increases the chance that the identified locations are those with actual safety needs and not those experiencing a random flux of severe crashes.
3. The crash frequency index ( $I_{CF}$ ) also serves as a measure of statistical significance. A value of the crash frequency index higher than a threshold value (e.g. 1.5 or 2) indicates that the total crash frequency at a location is significantly higher than the frequency expected for the exposure and the type of location. Use of this indicator increases the chance that the identified locations are those with actual safety needs and not those experiencing a random flux of crashes.

The first criterion makes the selection process consistent with the current safety management goal of reducing the frequency of severe crashes while the indices criterion makes the screening process statistically sound.

The crash cost index ( $I_{CC}$ ) is the difference between the actual crash cost and the expected crash cost divided by the standard deviation of the difference estimates. The crash frequency index ( $I_{CF}$ ) is an indicator of an excessive number of crashes at a particular location, irrespective of the injury severity. This can help to pinpoint a particular roadway or driver related problem that is contributing for such excessive crash frequency.

$I_{CC}$  and  $I_{CF}$  are calculated as follows:

$$I_{CC} = \frac{L - \bar{L}}{\sqrt{\sigma_L^2 + \sigma_{\bar{L}}^2}}$$

$$L = C_{PD} \cdot PD + C_{KA} \cdot KA + C_{BC} \cdot BC$$

$$\bar{L} = C_{PD} \cdot a_{PD} + C_{KA} \cdot a_{KA} + C_{BC} \cdot a_{BC}$$

$$\sigma_L^2 = C_{PD}^2 \cdot PD + C_{KA}^2 \cdot KA + C_{BC}^2 \cdot BC$$

$$\sigma_{\bar{L}}^2 = C_{PD}^2 \cdot a_{PD}^2 \cdot D_{PD} + C_{KA}^2 \cdot a_{KA}^2 \cdot D_{KA} + C_{BC}^2 \cdot a_{BC}^2 \cdot D_{BC}$$

$$I_{CF} = \frac{TC - \overline{TC}}{\sqrt{\sigma_{TC}^2 + \sigma_{\overline{TC}}^2}}$$

$$TC = PD + KA + BC$$

$$\overline{TC} = a_{PD} + a_{KA} + a_{BC}$$

$$\sigma_{TC}^2 = PD + KA + BC = TC$$

$$\sigma_{\overline{TC}}^2 = a_{PD}^2 \cdot D_{PD} + a_{KA}^2 \cdot D_{KA} + a_{BC}^2 \cdot D_{BC}$$

The notation used in the above equations is explained below. The quantities apply to individual road segments and intersections and to the analyzed three-year period:

$I_{CC}$  = crash cost index,

$L$  = total cost of crashes,

$\overline{L}$  = expected total cost of crashes,

$\sigma_L^2$  = variance of the cost of crashes,

$\sigma_{\overline{L}}^2$  = variance of the expected cost of crashes estimate,

$I_{CF}$  = crash frequency index,

$TC$  = number of crashes,

$\overline{TC}$  = expected number of crashes,

$\sigma_{TC}^2$  = variance of number of crashes,

$\sigma_{\overline{TC}}^2$  = variance of expected number of crashes estimate,

$PD$  = number of property-damage-only crashes,

$KA$  = number of fatal and incapacitating crashes,

$BC$  = number of non-incapacitating and possible crashes,

$C_{PD}$  = average PD crash cost,

$C_{KA}$  = average KA crash cost,

$C_{BC}$  = average BC crash cost,

$a_{PD}$  = expected number of PDO crashes,

$a_{KA}$  = expected number of KA crashes,

$a_{BC}$  = expected number of BC crashes,

$D_{PD}$  = over-dispersion parameter for  $a_{PD}$  estimate,

$D_{KA}$  = over-dispersion parameter for  $a_{KA}$  estimate.

$D_{BC}$  = over-dispersion parameter for  $a_{BC}$  estimate.

## Local Road Segments and Intersections

Estimating the expected crash costs and frequencies for local roads involves surrogate variables of exposure such as population density, household density, type of area (rural, urban or suburban), employment density (indicator of economic activity), and network characteristics (e.g. network or intersection density), etc. A modeling method based on a classification tree was selected to group similar road segments and intersections together and to estimate safety in these groups. Each road group (terminal node in the classification tree) is identified based on the generated classification rules. The classification process produces the expected crash cost (crash cost) for each road intersection group and the expected crash cost density (crash cost density) expressed in \$/mile for each segment group. In addition, the standard deviations of costs (cost densities) within each group are reported. The actual crash cost on a road is compared to the expected crash cost to verify if this road has safety needs.

The index of crash cost ( $I_{CC}$ ) and the index of crash frequency ( $I_{CF}$ ) are computed for local intersections using the following set of formulae:

$$I_{CC} = \frac{L - \bar{L}}{\sqrt{\sigma_L^2 + \sigma_{\bar{L}}^2}},$$
$$L = C_{PD} \cdot PD + C_{KA} \cdot KA + C_{BC} \cdot BC,$$
$$\sigma_L^2 = C_{PD}^2 \cdot PD + C_{KA}^2 \cdot KA + C_{BC}^2 \cdot BC,$$
$$I_{CF} = \frac{TC - \bar{TC}}{\sqrt{\sigma_{TC}^2 + \sigma_{\bar{TC}}^2}},$$
$$TC = PD + KA + BC,$$
$$\sigma_{TC}^2 = PD + KA + BC = TC,$$

The notation used in the above equations is explained below. The quantities apply to individual local intersections and to the analyzed three-year period:

$I_{CC}$  = crash cost index,

$L$  = total cost of crashes,

$\bar{L}$  = expected total cost of crashes,

$\sigma_L^2$  = variance of the cost of crashes,

$\sigma_{\bar{L}}^2$  = variance of the expected cost of crashes estimate,

$I_{CF}$  = crash frequency index,

$TC$  = number of crashes,

$\bar{TC}$  = expected number of crashes,

$\sigma_{TC}^2$  = variance of number of crashes,

$\sigma_{\bar{TC}}^2$  = variance of expected number of crashes estimate,

$PD$  = number of property-damage-only crashes,  
 $KA$  = number of fatal and incapacitating crashes,  
 $BC$  = number of non-incapacitating and possible crashes,  
 $C_{PD}$  = average PD crash cost,  
 $C_{KA}$  = average KA crash cost,  
 $C_{BC}$  = average BC crash cost.

The index of crash cost ( $I_{CC}$ ) and the index of crash frequency ( $I_{CF}$ ) are computed for local segments using the following set of formulae:

$$I_{CC} = \frac{DL - \overline{DL}}{\sqrt{\sigma_{DL}^2 + \sigma_{\overline{DL}}^2}},$$

$$DL = \frac{1}{S} (C_{PD} \cdot PD + C_{KA} \cdot KA + C_{BC} \cdot BC),$$

$$\sigma_D^2 = \frac{1}{S^2} (C_{PD}^2 \cdot PD + C_{KA}^2 \cdot KA + C_{BC}^2 \cdot BC),$$

$$I_{CF} = \frac{CD - \overline{CD}}{\sqrt{\sigma_{CD}^2 + \sigma_{\overline{CD}}^2}},$$

$$CD = \frac{1}{S} (PD + KA + BC),$$

$$\sigma_{CD}^2 = \frac{1}{S^2} (PD + KA + BC).$$

The notation used in the above equations is explained below. The quantities apply to individual local road segments and intersections and to the analyzed three-year period:

$I_{CC}$  = crash cost index,

$DL$  = crash cost density on a road segment,

$\overline{DL}$  = expected crash cost density on a road segment,

$\sigma_{DL}^2$  = variance of crash cost density for a road segment,

$\sigma_{\overline{DL}}^2$  = variance of expected crash cost density estimate for a road segment,

$I_{CF}$  = crash frequency index,

$CD$  = crash frequency density for a road segment,

$\overline{CD}$  = average crash frequency for a road segment,

$\sigma_{CD}^2$  = variance of crash density for a road segment,

$\sigma_{\overline{CD}}^2$  = variance of expected crash density estimate for a road segment,

$S$  = segment length (mi),

$PD$  = number of property-damage-only crashes,

$KA$  = number of fatal and incapacitating crashes,

$BC$  = number of non-incapacitating and possible crashes,

$C_{PD}$  = average PD crash cost,

$C_{KA}$  = average KA crash cost,

$C_{BC}$  = average BC crash cost.

### **3.0 Five Percent List**

The 2011 Five Percent Report identifies road locations with the most severe safety needs through selecting intersections and road segments that are experiencing fatal and severe crashes. The state/local road segments and intersections were then ranked using the crash cost index and the crash frequency index. The five percent selection was determined as follows:

#### **State Roads**

State road intersections and segments were first selected if they experienced at least two fatal or incapacitating injury crashes (KA). The lists were then sorted in descending order first by KA and then by crash cost index ( $I_{CC}$ ). Finally, the lists were sorted by the crash frequency ( $I_{CF}$ ) index. The number of fatal and serious crashes was accumulated for each list until it equaled five percent of the fatal and serious crashes that occurred on state road intersections or segments for the analysis period from 2008 to 2010.

#### **Local Roads**

Local road intersections and segments were selected if they experienced at least two fatal or serious injury crashes. The lists were then sorted in descending order first by KA and then by crash cost index ( $I_{CC}$ ). Finally, the list was sorted by the crash frequency ( $I_{CF}$ ) index. The number of fatal and serious crashes was accumulated for each list until it equaled five percent of the fatal and serious crashes that occurred on local road intersections or segments for the three-year period from 2008 to 2010.

#### **Ramps**

Ramps were selected if they experienced at least two fatal or serious injury crashes. The list is sorted in descending order first by KA and then by crash cost index ( $I_{CC}$ ). Finally, the list was sorted by the crash frequency ( $I_{CF}$ ) index. The number of fatal and serious crashes was accumulated to at least get the sufficient counts (i.e. five percent of total KA crashes) during the analysis period from 2008 to 2010.

## Sites Identified

Table 1 shows total crash counts for three-year period (2008-2010) by all three major types of roadway locations considered (i.e. segment, intersection and ramps).

**Table 1 Distribution of Total Crashes (2008-2010)**

<b>Year</b>	<b>Total Crashes</b>
2008	205,608
2009	189,865
2010	193,092
<i>Total</i>	<i>588,565</i>

Table 2 shows the linked crash counts considered for five percent study by major types of road locations. About 82 percent of total crashes have been linked to network for five percent based on the available geo-coding information.

**Table 2 Distribution of Assigned Crashes (2008-2010)**

<b>Year</b>	<b>Linked crashes</b>			
	<b>Total (% linked)</b>	<b>Segment</b>	<b>Intersection</b>	<b>Ramp</b>
2008	174,516 84.9%	89,428	83,325	1,763
2009	156,681 82.5%	80,464	75,043	1,174
2010	151,086 78.2%	77,493	72,722	871
<b>Total</b>	<b>482,283 81.9%</b>	<b>247,385</b>	<b>231,090</b>	<b>3,808</b>

There were total 10,267 fatal and incapacitating crashes (KA) linked to the network for the analysis year period. The five percent list consists of 185 locations of which there are 21 state intersections, 47 state segments, 72 local intersections and 40 local segments. There were also three ramps listed in the five percent. No bridges met the selection criteria for hazardous locations. These 183 locations represent 5.23% of all linked KA type crashes. Table 3 shows the detailed information of linked crash counts on the roadway network by state/local segments/intersections/ramps and the breakdown of this information for the five percent listed locations.

**Table 3 Severe Crash Counts (KA) by Network and Five Percent Locations**

Location Type	Total Assigned Crashes (KA)	Number of locations in 5% report	Crashes (KA) on 5% listed locations	Percent of Total
State Intersection	975	21	65	6.67%
State Segment	3,186	47	164	5.15%
Local Intersection	3,855	72	192	4.98%
Local Segment	2,157	40	109	5.05%
Ramps	94	3	7	7.45%
<i>Total</i>	<i>10,267</i>	<i>183</i>	<i>537</i>	<i>5.23%</i>

Appendix A shows the five percent list of road locations for 2011.

In addition to the locations identified through the ArcGIS process, the metropolitan planning organization for MACOG which represents Elkhart, St. Joseph, and Marshal counties, identified an additional Eight (8) intersections which met the selection criteria. These intersections are listed in Table A.6 MACOG Investigated Locations Meeting the Five Percent Selection Criteria..

## 4.0 Conclusion

The 2011 Five-percent Report uses a methodology similar to the one described in the previous year's report. Important improvements were applied in this year's report such as: the use of a new crash assignment procedure, testing different network configurations for road segments and intersections, as well as developing safety performance functions for bridges.

In using the new crash assignment method, approximately 82% of reported crashes were assigned to the network. The crash assignment method further defined intersection and segment crashes by crash type and location in relation to the intersection center.

The safety performance functions for state roads were estimated using new 2010 crash data for three levels of crash severities (KA, BC and O). Also the classification trees for crash frequency and cost were revised using the 2010 crash data for local road segments and intersections. Another important improvement is updating the Indiana average crash costs for various types of locations consistent with the screening method. This update has allowed more accurate estimation of economic costs caused by crashes at screening locations.

Crashes on bridges were assigned to corresponding roadway segments. The NBI data, along with the roadway segment data, were utilized in developing the safety performance functions for bridges. The cost and frequency indices were calculated for bridge facilities, however, no bridges met the hazardous location criteria.

The methodology used in selecting Indiana's five percent locations is based on research conducted at Purdue University. The research report is available upon request.

Multiple factors contribute to crash events, and for that reason, different countermeasures to reduce crash risk may be appropriate at different locations. For example, in some cases police enforcement is the most effective measure, while in other road engineering methods, such as road geometry or traffic control improvements, are most advisable. At other locations yet another combination of these treatments works best.

On INDOT jurisdiction roads each location will be evaluated against planned improvements. At those locations where there is no improvement planned or where the improvement is not expected to mitigate the safety problem a safety investigation will be conducted. As a result of the investigation the locations will be assigned a low cost safety improvement or become a project for further investigation, scored and included in the next call for projects.

On LOCAL jurisdiction roads the 5% lists are made available to the appropriate local planning organizations (LPA's) for further investigation. LPA's are encouraged to apply for safety funding.

Possible remedies for these locations include: upgrading or new traffic signals, install flashing beacons, improve or construct channelization, construct roundabouts, centerline and edgeline rumble strips/stripes, improved signage, install median barriers, install lighting, install or improve guardrail, etc.

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## Appendix A: Five Percent Report Lists

### List of Abbreviations used in the tables

No. of Person. Killed in 3 years	KP
No. of Incapacitating Injuries (people) in 3 years	AP
No. of Non-incapacitating Injuries (people) in 3 years	BP
No. of Possible Injuries (people) in 3 years	CP
No. of Fatal and Incapacitating Injury Crashes in 3 years	KA
No. of Non-Incapacitating and Possible Injury Crashes in 3 years	BC
No. of Property-Damage-Only Crashes in 3 years	O
No. of Total Crashes in 3 years	TC
Index of Crash Cost	I <sub>CC</sub>
Index of Crash Frequency	I <sub>CF</sub>

**Table A.1: 2011 Five Percent List for Indiana State Road Intersections**

Table 1: 2011 Five Percent List for Indiana State Road Intersections 1 / 3														
ID	GIS Coordinates	Location	City	County	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Incap. & Possb. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
37219	N41.118248, W85.135170	Intersection of SR 930 (Coliseum Blvd E) at Coldwater Rd (~0.73 mi E of US 27)	Fort Wayne	Allen	0	7	56	14	5	43	219	267	12.71	4.6
37189	N41.118106 W85.148472	Intersection cluster of SR 930 (W Coliseum Blvd) at Industrial Rd (~0.09 mi E of US 27) and at US 27 (Lima Rd)	Fort Wayne	Allen	3	1	34	5	2	25	118	145	9.98	3.74
37229	N41.117948 W85.128470	Intersection of SR 930 (Coliseum Blvd E) at N Clinton St (~1.06 mi E of US 27)	Fort Wayne	Allen	0	5	33	3	5	31	131	167	9.12	3.44
29022	N39.091300 W84.872382	Intersection Cluster of US 50 (WEads Pkwy) at SR 48 (Bielby Rd); at Doughty Rd (~0.22 mi NW of SR 48 (Bielby Rd)) and at 2 driveways (~2.89 and ~2.98 mi W of I-275)	W of Lawrenceburg	Dearborn	0	4	18	6	3	13	55	71	8.43	3.36
29138	N39.094641 W84.864827	Intersection Cluster of US 50 (WEads Pkwy) at SR 1 (Main Street) and 2 Driveways Located on US 50 (~0.78 mi; 0.44 mi and 0.45 mi NW of SR 48 (Bielby Rd))	W of Lawrenceburg	Dearborn	1	3	15	2	2	10	89	101	9.60	3.35
17988	N40.045634 W85.995735	Intersection of SR 32 / SR 38 (Conner St) at Cumberland Rd (~0.08 mi W of SR 37)	Noblesville	Hamilton	1	1	12	179	2	20	115	137	9.91	3.48
17425	N39.849860 W86.395712	Intersection cluster of SR 267 (N Green St) at Twin St and Northgren Pkwy (~0.72 mi and 0.73 mi S of I-74)	Brownsburg	Hendricks	0	2	23	1	2	14	102	118	10.66	3.99

**Table 1: 2011 Five Percent List for Indiana State Road Intersections 2 / 3**

ID	GIS Coordinates	Location	City	County	Fatal Injuries (KF)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Incap. & Possib. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
17433	N39.857094 W86.392391	Intersection of SR 267 (N Green St) at Northfield Dr (~0.19 mi S of I-74)	Brownsburg	Hendricks	1	3	29	2	4	26	140	170	10.77	3.93
18928	N40.486438 W86.133692	Intersection of SR 22 (E/W Sycamore St) at Washington St (~1.41 mi W of US 31/US 35 (Reed Rd))	Kokomo	Howard	0	2	14	4	2	14	52	68	7.8	3.08
11736	N39.549792 W86.086865	Intersection of US 31 at Whiteland Rd (~2.42 mi W of I-65)	Whiteland	Johnson	0	2	36	12	2	34	72	108	8.96	4.07
14025	N41.523035, W87.470639	Intersection of US 41 (S Indianapolis Blvd) at E 53rd Ave (~2.19 mi N of US 30)	Highland	Lake	0	2	58	12	2	51	200	253	12.58	4.8
14132	N41.556135 W87.470640	Intersection of US 41 (S Indianapolis Blvd) at Ridge Rd (~1.30 mi S of I-80 / I-90 (Toll Rd))	Highland	Lake	0	4	27	0	4	19	126	149	9.88	3.39
14263	N41.485636 W87.364836	Intersection of SR 55 (Taft St) at 73rd Ave (~1.00 mi N of US 30 (W Lincoln Hwy))	Merrillville	Lake	1	1	29	3	2	24	85	111	7.78	2.87
30266	N40.066242 W85.652976	Intersection of SR 9 (East St) at Charles St (~0.30 mi N of SR 236)	Anderson	Madison	0	4	18	5	4	15	52	71	7.36	3.04

**Table 1: 2011 Five Percent List for Indiana State Road Intersections 3 / 3**

ID	GIS Coordinates	Location	City	County	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Incap. & Possib. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
11901	N39.693212 W86.148788	Intersection of US 31 (S East St) at E Thompson Rd (~0.38 mi S of I-465 (S Leg))	Indianapolis	Marion	0	8	40	3	8	31	120	159	7.41	3.39
11973	N39.844463 W86.010241	Intersection of US 36 / SR 67 (Pendleton Pike) at N Post Rd (~1.60 mi NE of I-465 (E Leg))	Lawrence / Indianapolis	Marion	1	3	41	6	3	31	58	92	6.39	2.99
10594	N39.408531 W86.423565	Intersection of SR 37 at S Ohio St / E Mahalasville Rd (~1.47 mi NE of SR 39)	Martinsville	Morgan	0	4	49	3	3	33	53	89	6.74	3.08
100149283	N39.612801, W86.374934	Intersection of SR 267 at Main St (0.16 mi N of SR 42 / W/E High St)	Mooresville	Morgan	3	1	0	0	4	10	19	33	5.67	2.78
14779	N41.461084 W87.036653	Intersection of SR 130 (CR 150 E) at Warbler Dr (~0.70 mi N of US 30)	Valparaiso	Porter	0	2	29	1	2	22	63	87	9.11	3.91
25379	N39.523556 W85.742718	Intersection of SR 44 at S CR 200 E (E Range Rd) (~0.38 mi SW of I-74)	E of Shelbyville	Shelby	1	1	16	1	2	14	82	98	9.70	3.70
215	N37.976542 W87.637017	Intersection of SR 62 (W Lloyd Expy) at S Red Bank Rd (~5.09 mi W of US 41)	W of Evansville	Vanderburgh	0	4	21	26	2	30	192	224	10.83	3.18

**Table A.2: 2011 Five Percent List for Indiana State Road Segments**

Table A.2: 2011 Five Percent List for Indiana State Road Segments 1 / 6															
ID	GIS Coordinates Start Point	GIS Coordinates End Point	Location	City	County	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-incap. & Possib. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
24380217	N 39.091883, W 86.033607	N 39.087511, W 86.035764	SR 58 from 6.36 mi ( CR W 750 S) to 6.07 mi W & SW of I-65 (MP 115.90 to MP 116.19)	Ogiliville	BARTHOLOMEW	0	3	3	0	3	0	0	3	1.53	1.72
24466012	N 38.275857, W 85.749408	N 38.269370, W 85.746062	I-65 from the bridge over Market St to the bridge over 7th St 0.34 to 0.84 mi N of the KY / IN State Line (MP 0.34 to 0.84)	Jeffersonville	CLARK	0	5	49	6	6	49	204	259	2.22	2.70
24463549	N 38.328849, W 85.754284	N 38.331808, W 85.754095	I-65 from 1.16 to 0.96 mi S of I-265 (MP 4.55 to 4.75)	Clarksville	CLARK	1	1	9	4	2	9	47	58	3.12	1.96
24465270	N 41.265829, W 85.086692	N 41.273004, W 85.086832	I-69 from 6.91 mi to 7.41 mi N of I-469 / I-69 / US 30 (N Jct) (MP 121.93 to 122.43)	S of Auburn	DE KALB	1	5	7	0	5	2	29	36	2.53	2.20
24466095	N 41.534474, W 85.055771	N 41.518700, W 85.055494	Interchange segment of I-69 at SR 4 on I-69 (MP 139.60 to 140.78)	Ashley	DE KALB	0	2	6	1	2	7	20	29	5.39	2.08
24465333	N 41.469700, W 85.054468	N 41.463929, W 85.054235	I-69 from 1.68 to 2.08 N of US 6 (Grand Army of the Republic Hwy) (MP 135.84 to 136.24)	N of Waterloo	DE KALB	1	3	1	0	4	1	12	17	1.18	1.92
24465323	N 41.413036, W 85.057625	N 41.407652, W 85.060322	I-69 from 2.26 mi to 1.86 mi S of US 6 (Grand Army of the Republic Hwy) (MP 132.05 to 132.45)	N of Auburn	DE KALB	0	3	4	0	3	3	11	17	1.20	1.70

**Table A.2: 2011 Five Percent List for Indiana State Road Segments 2 / 6**

ID	GIS Coordinates Start Point	GIS Coordinates End Point	Location	City	County	Fatal Injuries (KF)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-incap. & Possib. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
24465661	N 38.312267, W 85.846865	N 38.309268, W 85.843865	Interchange segment I-265 at Paoli Pike / State St on Paoli Pike from 0.13 mi SE to 0.12 mi NW of I-265 (MP 0.84)	New Albany	FLOYD	1	1	19	1	2	11	59	72	8.49	2.72
24466031	N 38.340931, W 85.808294	N 38.344608, W 85.788629	Interchange segment at I-265 and SR 311 / Charlestown Rd on I-265 from 0.57 mi W to 0.55 mi E of SR 311 (MP 3.55 to MP 4.67)	New Albany	FLOYD	0	3	50	8	2	37	77	116	1.44	2.02
24466022	N 38.289071, W 85.914302	N 38.286212, W 85.910782	Interchange segment of SR 62 / SR 64 at I-64 on SR 62 / SR 64 from 0.18 mi NW to 0.10 mi SE of I-64 (MP 4.26 to 4.36 (SR 62) and MP 4.63 to 4.81 (SR 64))	New Albany	FLOYD	0	2	9	6	2	7	38	47	2.39	1.73
24369359	N 38.380880, W 87.723672	N 38.375846, W 87.714656	SR 64 from 2.66 mi (CR 850 W) to 2.06 mi (CR 800 W) NE of SR 65 (MP 2.15 to 2.75)	Princeton	GIBSON	1	3	3	2	3	3	42	48	6.29	2.04
24465954	N 39.947670, W 86.014723	N 39.960861, W 86.005098	Interchange segment on I-69 at E 116th St from 4.21 to 5.21 mi N of I-465 (N Leg) (MP 4.21 to 5.21)	Fishers	HAMILTON	0	6	59	3	5	42	197	244	7.04	4.20
24390574	N 39.945033, W 86.016655	N 39.947670, W 86.014723	I-69 / SR 37 from 3.99 to 4.19 mi N of I-465 (N Leg) (MP 3.99 to 4.19)	Fishers	HAMILTON	0	2	24	2	2	19	81	102	5.68	2.87
24390557	N 39.937118, W 86.022444	N 39.942396, W 86.018588	I-69 from 2.12 mi to 1.71 mi SW of SR 37 (MP 3.36 to 3.77)	Fishers	HAMILTON	0	2	16	0	2	12	57	71	2.97	1.96
24464388	N 39.972148, W 85.967389	N 39.975999, W 85.959381	I-69 from 2.05 mi to 2.55 mi NE of SR 37 / I-69 jct (MP 7.50 to 8.00)	Fishers	HAMILTON	2	4	15	2	3	6	38	47	2.18	1.87

**Table A.2: 2011 Five Percent List for Indiana State Road Segments 3 / 6**

ID	GIS Start Point	Coordinates End Point	Location	City	County	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-Incap. & Possib. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
24465723	N 39.820951, W 85.782398	N 39.821294, W 85.759563	Interchange segment of I-70 at SR 9 on I 70 from 0.66 mi W to 0.55 mi E of SR 9 (MP 102.97 to MP 104.18)	Greenfield	HANCOCK	3	3	21	4	6	13	57	76	0.19	1.79
24460726	N 38.238440, W 86.245357	N 38.234678, W 86.235494	I-64 from 5.15 mi to 4.55 mi W of SR 337 (MP 98.54 to 99.14)	W of Corydon	HARRISON	1	2	1	0	3	1	9	13	0.59	1.64
24381063	N 39.717612, W 86.357636	N 39.721883, W 86.346982	US 40 W (E Main St) from 5.43 mi (Perry Rd) W to 4.77 mi (Clover Dr / Williams Trace) W of I-465 (W Leg) (MP 66.22 to 66.88)	Plainfield	HENDRICKS	1	6	3	1	6	19	112	137	9.59	4.20
24465843	N 41.136931, W 87.265750	N 41.151930, W 87.266373	Interchange segment of I-65 at SR 10 on I-65 from 0.52 mi S to 0.52 mi N of SR 10 (MP 229.04 to 230.08)	Roselawn	JASPER	2	5	20	6	5	10	59	74	2.80	2.18
24465857	N 41.702700, W 87.524425	N 41.697852, W 87.519277	Interchange segment on US 12 / US 20 / US 41 (S Indianapolis Blvd) at I-90 (Toll Rd) WB exit ramp (MP 0.06 to 0.49)	Hammond	LAKE	0	2	24	13	2	30	107	139	4.99	3.87
24465632	N 41.572679, W 87.356295	N 41.564642, W 87.356068	Interchange segment at I-80 / I-94 at Grant St from 0.31 mi S to 0.24 mi N on Grant St (MP 8.96)	Gary	LAKE	1	2	24	8	3	17	74	94	9.66	3.43
24465880	N 41.567336, W 87.327137	N 41.567511, W 87.345806	Interchange segment of I-80 / I-94 (Borman Expy) and SR 53 (Broadway) on I-80 from 0.48 mi W to 0.48 mi E of SR 53 (MP 9.45 to 10.41)	Gary	LAKE	2	8	73	2	8	45	327	380	3.00	2.94
24462151	N 41.563787, W 87.470742	N 41.559219, W 87.471266	US 41 (S Indianapolis Blvd) from 1.18 mi to 0.88 mi S of I-80 / I-94 (Borman Expy) (MP 268.01 to 268.31)	Highland	LAKE	0	4	12	2	4	11	27	42	3.33	2.66

**Table A.2: 2011 Five Percent List for Indiana State Road Segments 4 / 6**

ID	GIS Coordinates Start Point	GIS Coordinates End Point	Location	City	County	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-Incap. & Possib. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
24465849	N 41.570605, W 87.292820	N 41.573406, W 87.277912	Interchange segment I-80 / I-94 (Borman Expy) at Central Ave on I-80 from 0.43 mi to 1.22 mi E of I-65 (MP 12.17 to MP 12.98)	Lake Station	LAKE	1	1	26	2	6	37	283	326	2.65	2.53
24462159	N 41.470837, W 87.470130	N 41.466641, W 87.470101	US 41 (S Indianapolis Blvd) from 1.62 mi to 1.32 mi S of US 30 (MP 261.61 to MP 261.91)	St. John	LAKE	1	1	10	14	2	10	11	23	2.27	2.10
24465631	N 41.507316, W 87.321934	N 41.507244, W 87.317390	Interchange segment of I-65 at 61st Ave on 61st Ave 0.12 mi E to 0.12 mi W of I-65 (MP 255.25)	Merrillville	LAKE	1	1	7	0	2	7	27	36	5.94	2.08
24465848	N 41.598438, W 87.308390	N 41.595182, W 87.296784	Interchange segment of US 12 / US 20 at I-80 / I-90 (Toll Road) and at I-65 termination on US 12 / US 20 from 0.12 mi W to 0.55 mi W of I-80 / I-90 (Toll Road) (MP 15.25 to 15.92)	Gary	LAKE	1	3	23	3	4	15	44	63	1.00	2.03
24462170	N 41.642234, W 87.480641	N 41.645135, W 87.480706	US 12 / US 20 (S Indianapolis Blvd) from 0.88 mi to 0.69 mi S of SR 912 (Cline Ave)(MP 4.83 to MP 5.03)	East Chicago	LAKE	1	5	2	0	3	0	15	18	3.21	1.86
24462199	N 41.492470, W 87.320067	N 41.488210, W 87.320624	I-65 from 1.18 mi to 1.49 mi N of US 30 (W/E Lincoln Hwy) (MP 253.96 to 254.26)	Merrillville	LAKE	0	3	10	1	3	6	34	43	1.72	1.82
24465870	N 41.573835, W 87.446939	N 41.569835, W 87.420890	Interchange segment of I-80 / I-94 (Borman Expy) at SR 912 (Cline Ave) from 0.80 mi W to 0.60 mi E of SR 912 (MP 4.12 to MP 5.52)	Hammond	LAKE	1	9	84	5	10	52	203	265	0.46	1.74
24465452	N 41.646214, W 87.435436	N 41.644095, W 87.432983	SR 912 ( Cline Ave ) from 0.55 mi to 0.75 mi N of US 12 (Cesar Chavez Memorial Dr / Industrial Dr) (MP 5.10 to 5.29)	East Chicago	LAKE	0	4	0	0	4	0	1	5	-0.25	1.73

**Table A.2: 2011 Five Percent List for Indiana State Road Segments 5 / 6**

ID	GIS Start Point	Coordinates End Point	Location	City	County	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-Incap. & Possb. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
24393918	N 41.687400, W 86.874460	N 41.687466, W 86.865429	US 20 from 1.18 mi (S Woodland Ave) to 1.65 mi (Long_Wood Dr) E of US 421 (Franklin St) (MP 41.23 to 41.66)	Michigan City	LAPORTE	1	2	0	1	3	4	3	10	1.31	1.9
24393693	N 41.732666, W 86.793757	N 41.737349, W 86.786337	I-94 from 2.96 mi to 3.46 mi N of US 20 / US 35 (E Michigan Blvd) (MP 42.91 to 43.41)	E of Michigan City	LAPORTE	0	3	8	0	3	6	17	26	1.67	1.77
24367201	N 38.828828, W 86.505696	N 38.824141, W 86.516205	US 50 (Mitchell Rd) from 0.66 mi W (at Old Us 50 / Dixie Hwy) then to NB SR 37 Bridge over US 50 (MP 64.02 to 64.66)	Bedford	LAWRENCE	1	1	22	3	2	10	10	22	2.69	2.13
24465647	N 39.905192, W 86.047732	N 39.905171, W 86.042154	Interchange segment of I-69 at E 82nd on E 82nd St from 0.11 mi W to 0.19 mi E of I-465 (MP 0.84)	Indianapolis	MARION	0	2	39	2	2	26	124	152	12.3	4.69
24465648	N 39.910933, W 86.075796	N 39.907725, W 86.077375	Interchange segment of I-465 (N Leg) at Allisonville Rd on Allisonville Rd from 0.12 mi S to 0.12 mi N of I-465 (MP 35.31)	Indianapolis	MARION	0	2	25	0	2	18	38	58	7.59	3.13
24380556	N 39.700417, W 86.263270	N 39.698801, W 86.265245	SR 67 (Kentucky Ave) from 0.31 mi (Norcroft Dr) to 0.15 mi SW of I-465 (S Leg) (MP 104.22 to 104.38)	Indianapolis	MARION	0	2	19	1	2	12	33	47	3.80	2.59
24380507	N 39.823780, W 86.222186	N 39.823825, W 86.218371	I-65 from 4.35 mi to 4.15 mi SE of I-465 (W leg) (MP 118.57 to 118.77)	Indianapolis	MARION	0	2	13	2	2	13	63	78	4.69	2.41
24381889	N 39.703956, W 86.098047	N 39.703815, W 86.092724	I-465 (S Leg) from 0.54 mi to 0.83 mi E of I-65 (MP 52.36 to 52.65)	Indianapolis	MARION	0	2	15	4	2	12	66	80	3.26	2.04

**Table A.2: 2011 Five Percent List for Indiana State Road Segments 6 / 6**

ID	GIS Coordinates Start Point	GIS Coordinates End Point	Location	City	County	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-Incap. & Possb. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
24465769	N 39.798220, W 86.275216	N 39.812503, W 86.275605	Interchange segment of I-465 (W Leg) at I 74 / Crawfordsville Rd on I-465 from 0.50 mi S to 0.50 mi N of I-74 (MP 15.28 to MP 16.28)	Indianapolis	MARION	0	3	14	4	3	12	105	120	2.56	1.88
24462625	N 39.924346, W 86.198322	N 39.924408, W 86.194604	I- 465 from 1.60 mi to 1.80 mi E of US 421 (Michigan Rd) (MP 28.41 to 28.61)	Indianapolis	MARION	0	4	5	3	4	6	10	20	0.15	1.88
24377974	N 39.148536, W 86.573003	N 39.144451, W 86.572978	Interchange Segment on SR 37 at SR 45 from 0.22 mi S to 0.04 mi N of SR 45 (MP 99.27 to MP 99.53)	Bloomington	MONROE	0	1	9	6	4	16	37	57	2.35	2.64
24376567	N 38.511910, W 86.372700	N 38.511360, W 86.365846	US 150 from 6.54 mi (S CR 475 E) to 6.15 mi SE of SR 37 / SR 50 / US 150 (MP 140.43 to 140.81)	E of Chambersburg	ORANGE	0	3	1	0	3	1	0	4	1.27	1.74
24370892	N 38.394922, W 87.220384	N 38.391713, W 87.217996	SR 61 (N Main St) from 3.66 mi to 3.40 mi (E CR 175 S) SE of SR 56 (MP 36.67 to 36.93)	N of Winslow	PIKE	0	3	0	0	3	0	0	3	1.45	1.72
24395676	N 41.722535, W 86.274393	N 41.722554, W 86.272392	I-80/I-90 (Toll Rd) from 1.23 mi to 1.02 mi W of SR 933 (MP 75.48 to 75.69)	South Bend	ST JOSEPH	0	5	7	1	5	8	49	62	4.95	2.7
24373180	N 39.724623, W 87.398308	N 39.717306, W 87.398292	SR 63 from 4.67 mi (E CR 1100 S) to 5.18 mi N of SR 163 (MP 49.58 to 50.08)	N of Clinton	VERMILLION	0	3	0	0	3	0	0	3	0.51	1.67
24460459	N 39.402340, W 87.404122	N 39.400092, W 87.401874	US 41 / US 150 from 3.22 mi to 2.26 mi (Barbara Ln) S of I-70 (MP 107.46 to 107.66)	Terre Haute	VIGO	0	4	11	4	4	7	30	41	3.87	2.57

**Table A.3: 2011 Five Percent List for Indiana Local Road Intersections**

Table A.3: 2011 Five Percent List for Indiana Local Road Intersections 1 / 11														
ID	GIS Coordinates	Location	CITY	COUNTY	Fatal Injuries (KF)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-incap. & Possib. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
100131639	N41.003647, W85.168970	Intersection of Bluffton Rd at Airport Expy (~3.39mi N of I-469 / US 24 / US 33 / SR 1)	Fort Wayne	Allen	0	2	1	0	2	10	30	42	6.39	2.67
100507774	N41.119048, W85.099970	Intersection of St Joe Rd/ Hobson Rd at Crescent Ave (~0.67 mi N of SR 930 / Coliseum Blvd)	Fort Wayne	Allen	0	2	0	0	2	0	81	83	8.63	2.66
100051284	N38.649542, W87.175519	Intersection of S Meridian St at Hayes Ave (~0.38 mi N of SR 57)	Washington	Daviess	3	0	0	3	3	19	0	22	4.66	2.94
100009729	N41.724249, W85.987501	Intersection of CR 7 at CR 6 (0.49 mi S of I-80/I-90(Toll Rd))	N of Elkhart	Elkhart	3	2	0	0	4	17	34	55	7.13	3.32
100004258	N41.683876, W85.983660	Intersection of W Lexington Ave at Socorro St (~1.04 mi E of SR 19 / S Nappanee St)	Elkhart	Elkhart	0	2	2	0	2	23	4	29	5.36	3.21
100001956	N41.685876, W85.983660	Intersection of N Riverside Dr at Strong Ave (~1.03 mi E of SR 19 / S Nappanee St)	Elkhart	Elkhart	0	3	0	0	3	23	2	28	5.26	3.21
100231558	N41.659484, W85.915269	Intersection of CR 18 at CR 13 (~0.20 mi N of US 20 / St Joseph Valley Pkwy)	Elkhart	Elkhart	1	1	1	0	2	6	49	57	7.27	2.66
100233505	N41.659756, W85.879555	Intersection of CR 117 at CR 18 (~0.50 mi S of US 20/ St Joseph Valley Pkwy)	E of Elkhart	Elkhart	0	4	7	0	4	9	16	29	5.01	2.62

**Table A.3: 2011 Five Percent List for Indiana Local Road Intersections 2 / 11**

ID	GIS Coordinates	Location	CITY	COUNTY	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-incap. & Possb. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
100005219	N39.912613, W85.987369	Intersection of E 86th St at Fall Creek Rd (~2.83 mi E of I-69)	Fishers	Hamilton	0	2	0	0	2	25	6	33	5.49	3.36
100009098	N39.796942, W85.990538	Intersection of N Miethoefer Rd at E 21st St (~0.34 mi S of I-70)	Indianapolis	Hancock	0	2	1	0	2	16	75	93	9.19	3.72
100143161	N39.748308, W86.380957	Intersection of S Dan Jones Rd at E County Rd 100S (~1.00 mi S of E US 36 (Rockville Rd))	Avon	Hendricks	0	2	0	0	2	10	112	124	11.1	3.97
100148856	N 39.697424, W86.355615	Intersection of Stafford Rd at Perry Rd (~0.86 mi E of SR 267 / Quaker Blvd)	Plainfield	Hendricks	1	5	0	0	4	10	43	57	7.49	3.06
100215356	N41.566496, W87.508950	Intersection of Calumet Ave at Broadmoor Ave (~0.52 mi S of I-80 / I-94 (Toll Rd))	Munster	Lake	0	2	3	0	2	1	68	71	8.18	2.60
100000250	N39.834959, W86.121798	Intersection of N Keystone Ave at Binford Blvd (~2.69 mi N of I-70)	Indianapolis	Marion	0	2	0	0	2	22	77	101	9.62	4.16

**Table A.3: 2011 Five Percent List for Indiana Local Road Intersections 3 / 11**

ID	GIS Coordinates	Location	CITY	COUNTY	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-incap. & Possb. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (Icf)	Index of Crash Cost (Icc)
100169671	N39.824020, W86.234937	Intersection of 38th St at Lafayette Rd (~0.36 mi W of I-65)	Indianapolis	Marion	0	7	7	0	7	1	155	163	12.6	4.06
100145640	N39.824894, W86.156851	Intersection of W 38th St at N Meridian St (~2.47 mi E of I-65)	Indianapolis	Marion	0	2	0	0	2	10	97	109	10.39	3.73
100268288	N39.897147, W86.215757	Intersection of Michigan Rd at W 79th Street (~1.95 mi SE of I-465 (N Leg))	Indianapolis	Marion	0	2	0	0	2	1	142	145	11.68	3.72
100145387	N39.823807, W86.256173	Intersection of W 38th St at Moller Rd (~1.03 mi E of I-465 (W Leg))	Indianapolis	Marion	0	4	2	0	3	10	102	115	10.67	3.72
100006453	N39.858450, W86.094007	Intersection of Binford Blvd at Kessler Blvd E Dr (~3.29 mi SW of I-465 (W Leg))	Indianapolis	Marion	0	3	4	0	3	25	30	58	7.54	3.68
100000323	N39.836306, W86.118822	Intersection of Binford Blvd at N Temple Ave / E Fall Creek Pky N Dr (~5.32 mi SW of I-465 (W Leg))	Indianapolis	Marion	0	2	0	0	2	22	39	63	7.67	3.65
100274962	N39.905121, W86.078648	Intersection of Allisonville Rd at E 82nd St (~0.31 mi SW of I-465 (N Leg))	Carmel	Marion	0	2	5	0	2	1	136	139	11.42	3.63

**Table A.3: 2011 Five Percent List for Indiana Local Road Intersections 4 / 11**

ID	GIS Coordinates	Location	CITY	COUNTY	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-incap. & Possb. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (Icf)	Index of Crash Cost (Icc)
100000699	N39.853601 W86.211948	Intersection of W 56th St/ Kessler Blvd at Cooper Rd (~2.81 mi E of I-65)	Indianapolis	Marion	0	6	2	0	4	22	37	63	7.88	3.63
100004482	N39.833833, W85.972183	Intersection of N German Church Rd at E 42nd St (~2.13 mi N of I-70)	Indianapolis	Marion	1	1	3	0	2	25	23	50	6.99	3.63
100135962	N39.752851, W86.250184	Intersection of W Washington St at Lynhurst Dr (~0.82 mi NE of I-465 (W Leg))	Indianapolis	Marion	0	2	2	0	2	10	86	98	9.85	3.56
100008369	N39.826282, W85.991069	Intersection of E 38th St at N Mitthoeffer Rd (~2.18 mi E of I-465 (W Leg))	Indianapolis	Marion	0	2	0	0	2	16	60	78	8.34	3.49
100000619	N39.855421, W86.005823	Intersection of E 56th St at Park Pl / Harrison Park Dr (~2.19 mi E of I-465 (E Leg))	Indianapolis	Marion	0	2	1	0	2	22	19	43	6.24	3.35
100135451	N39.787434, W86.239523	Intersection of Crawfordsville Rd at W 16th St / Georgetown Rd (~2.26 mi SE of I-465 (W Leg))	Indianapolis	Marion	0	2	0	0	2	10	70	82	9.04	3.32
100004472	N39.841160, W85.972391	Intersection of E 46th St at N German Church Road (~2.42 mi E of US 36 / SR 67 (Pendleton Pike))	Indianapolis	Marion	0	3	3	1	3	23	16	42	5.84	3.31

**Table A.3: 2011 Five Percent List for Indiana Local Road Intersections 5 / 11**

ID	GIS Coordinates	Location	CITY	COUNTY	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-incap. & Possb. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (lcf)	Index of Crash Cost (lcc)
100000659	N39.854972, W86.032624	Intersection of E 56th St at Boy Scout Rd (~0.76 mi E of I-465 (E Leg))	Indianapolis	Marion	0	3	3	0	3	22	13	38	6.07	3.28
100166481	N39.824724, W86.180839	Intersection of W 38th St at W Dr Martin Luther King Jr St (~1.22 mi E of I-65)	Indianapolis	Marion	1	4	3	0	5	1	92	98	9.85	3.25
100002288	N39.740200, W86.008630	Intersection of S Post Rd at E Raymond St (~0.41 mi S of US 52)	Indianapolis	Marion	0	4	0	0	3	23	6	32	4.94	3.18
100009278	N39.840397, W86.046064	Intersection of E 46th St at N Shadeland Ave (~0.30 mi W of I-465 (E Leg))	Indianapolis	Marion	0	3	1	0	2	16	33	51	7.08	3.16
100002314	N39.838770, W86.156971	Intersection of N Meridian St at Meridian Pl (~3.85 mi N of I-65)	Indianapolis	Marion	0	3	3	0	3	23	0	26	4.82	3.16
100231176	N39.853273, W86.240040	Intersection of W 56th St at Georgetown Rd (~1.33 mi E of I-65)	Indianapolis	Marion	0	2	2	0	2	1	99	102	9.89	3.11
100006943	N39.846936, W86.145763	Intersection of N College Ave at E 52nd St (~4.39 mi N of I-65)	Indianapolis	Marion	0	2	1	0	2	16	30	48	6.86	3.11

**Table A.3: 2011 Five Percent List for Indiana Local Road Intersections 6 / 11**

ID	GIS Coordinates	Location	CITY	COUNTY	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-incap. & Possb. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
100162952	N39.635608, W86.117097	Intersection County Line Rd at Madison Ave (~0.52 mi E of US 31)	Indianapolis	Marion	0	5	1	0	5	1	83	89	8.97	3.10
100163712	N39.650247, W86.122037	Intersection of E Stop 11 Rd at Madison Ave (~0.80 mi E of US 31/S East St)	Indianapolis	Marion	0	3	0	0	3	1	93	97	9.79	3.05
100174654	N39.694590, W86.082420	Intersection of S Emerson Ave at E Thompson Rd (~0.63 mi S of I-465 (W leg))	Indianapolis	Marion	0	4	2	0	3	1	86	90	9.44	2.96
100260067	N39.882010, W86.244193	Intersection of W 71st St at Georgetown Rd (~1.33 mi E of I-465 (W Leg))	Indianapolis	Marion	1	2	0	0	2	1	92	95	9.30	2.91
100010304	N39.839146, W86.187690	Intersection of N Michigan Rd at Cold Spring Rd (~2.00 mi NW of I-65)	Indianapolis	Marion	0	2	0	0	2	17	13	32	5.40	2.9
100143032	N39.708488, W86.120310	Intersection of S Keystone Ave at E Hanna Ave (~0.50 mi S of I-65)	Indianapolis	Marion	0	7	0	0	5	10	15	30	5.40	2.89
100163222	N39.6511895, W86.082604	Intersection of E Stop 11 Rd at Emerson Ave (~0.45 mi W of I-65)	Indianapolis	Marion	0	2	3	0	2	1	82	85	9.17	2.84

**Table A.3: 2011 Five Percent List for Indiana Local Road Intersections 7 / 11**

ID	GIS Coordinates	Location	CITY	COUNTY	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-incap. & Possib. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (Icf)	Index of Crash Cost (Icc)
100169161	N39.636437, W86.082737	Intersection of County Line Road at S Emerson Ave (~0.46 mi W of I-65)	Greenwood	Marion	0	2	1	0	2	1	80	83	9.05	2.81
100268571	N39.884776, W86.209790	Intersection of Michigan Rd at W 73rd St (~2.86 mi SE of I-465 (N Leg))	Indianapolis	Marion	0	3	2	0	3	1	71	75	8.16	2.68
100163291	N39.680639, W86.082530	Intersection of E Edgewood Ave at S Emerson Ave (~1.00 mi E of I-65)	Indianapolis	Marion	0	7	0	0	5	1	38	44	6.57	2.68
100161425	N39.840218, W86.113115	Intersection of Binford Blvd at E 46th St (~4.92 mi SW of I-465 (W leg))	Indianapolis	Marion	0	7	1	0	3	10	21	34	5.74	2.65
100145396	N39.825181, W86.256204	Intersection of Moller Rd at Gateway Dr (Starting at W 38th St and I-465 (W Leg)) ~1.03 mi on W 38th St then N 0.10 mi on Moller Rd)	Indianapolis	Marion	0	3	1	0	3	10	20	33	5.73	2.65
100009206	N39.845236, W86.046138	Intersection of N Shadeland ave at E 49th St (~0.32 mi S of I-465 (W leg))	Lawrence	Marion	0	2	4	0	2	16	2	20	4.15	2.65
100177647	N39.825755, W86.045889	Intersection of E 38th St at N Shadeland Ave (~0.73 mi W of I-465 (W leg))	Indianapolis	Marion	1	1	0	0	2	1	68	71	8.37	2.61

**Table A.3: 2011 Five Percent List for Indiana Local Road Intersections 8 / 11**

ID	GIS Coordinates	Location	CITY	COUNTY	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-incap. & Possib. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
100180503	N39.804016, W86.009588	Intersection of N Post Rd at E 25th St (~0.23 mi N of I-70)	Indianapolis	Marion	0	3	4	0	3	1	62	66	7.60	2.56
100274409	N39.890699, W86.046116	Intersection of E 75th St at N Shadeland Ave (0.17 mi E of I-465 (W leg))	Indianapolis	Marion	0	3	0	0	2	1	70	73	8.04	2.55
100277598	N39.867465, W86.045730	Intersection of Fall Creek Rd at N Shadeland Ave (~0.08 mi E of I-465 (W leg))	Indianapolis	Marion	0	9	0	0	5	1	27	33	5.03	2.51
100117219	N39.135979, W86.528775	Intersection of E Winslow Rd at S Walnut Street Pike (~2.37 mi E of SR 37)	Bloomington	Monroe	0	3	0	0	3	10	41	54	7.27	2.92
100116443	N39.161464, W86.546136	Intersection of W Bloomfield Rd / W 2nd St at S Walker St (~1.80 mi NE of SR 37)	Indianapolis	Monroe	0	3	0	0	3	13	3	19	3.90	2.59
100106691	N39.163728, W86.538652	Intersection of S Rogers St at W Prospect St (~1.57 mi S of SR 46)	Bloomington	Monroe	3	0	0	0	3	13	1	17	4.02	2.58
100220997	N41.535446, W87.066188	Intersection of Meridian Rd at W CR 700 N (~1.00 mi S of US 6)	N of Valparaiso	Porter	1	2	1	0	2	15	17	34	5.13	2.74

**Table A.3: 2011 Five Percent List for Indiana Local Road Intersections 9 / 11**

ID	GIS Coordinates	Location	CITY	COUNTY	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-incap. & Possib. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
100182987	N41.521165, W87.026864	Intersection of E CR 600 N at N CR 200 E (~0.08 mi E of SR 49)	N of Valparaiso	Porter	2	0	4	0	2	12	16	30	5.45	2.6
100025569	N37.930200, W87.890958	Intersection of Locust St at E Water St (~0.21 mi S of SR 62 / E 4th St)	Mount Vernon	Posey	0	2	0	0	2	17	0	19	4.34	2.72
100057830	N39.100813, W87.403352	Intersection of E Depot St at Watson St (Starting at US 41 / US 150, ~1.10 mi E on W Wolfe St, then 0.17 mi S on N Broad St then 0.09 mi NE on Watson St)	Sullivan	Sullivan	2	0	2	0	2	19	0	21	4.46	2.86
100034892	N37.962698 W87.529670	Intersection of Washington Ave at S Weinbach Ave (~0.73mi E of US 41)	Evansville	Vanderburgh	0	3	1	0	3	17	55	75	8.16	3.45
100028434	N37.985750, W87.600452	Intersection of St Joseph Ave at W Maryland St (~0.55 mi N of SR 62 / W Lloyd Expy)	Evansville	Vanderburgh	0	2	1	1	2	17	38	57	7.48	3.30
100018912	N37.993821, W87.542628	Intersection of N Fares Ave at Maxwell Ave (~0.25 mi W of US 41 / SR 66)	Evansville	Vanderburgh	1	1	0	0	2	17	20	39	6.16	3.02
100028124	N37.983962, W87.574947	Intersection of N 1st Ave at W Delaware St (~0.46 mi N of SR 62 / Lloyd Expy)	Evansville	Vanderburgh	0	3	0	0	2	17	5	24	4.49	2.77

**Table A.3: 2011 Five Percent List for Indiana Local Road Intersections 10 / 11**

ID	GIS Coordinates	Location	CITY	COUNTY	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-incap. & Possib. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
100018565	N37.956528, W87.554160	Intersection of Raveswood Dr at S Linwood Ave (~0.63 mi W of US 41)	Evansville	Vanderburgh	0	2	0	0	2	17	2	21	4.16	2.73
100069062	N39.651138, W87.406580	Intersection of S 8th St at Eureka St (~0.41 mi S of SR 163 / Elm St)	Clinton	Vermillion	0	3	0	0	3	13	0	16	3.51	2.49
100065161	N39.506736, W87.360319	Intersection of Fort Harrison Rd at N Fruitridge Ave (~2.49 mi E of US 41)	Terre Haute	Vigo	0	2	2	0	2	19	21	42	5.84	3.09
100059382	N39.457343, W87.388243	Intersection of S 19th St at Park St (~0.82 mi S of US 40 / Wabash Ave)	Terre Haute	Vigo	0	6	3	0	3	19	2	24	4.49	2.92
100064733	N39.446257, W87.399036	Intersection of S 12th St at Foulkes Dr (Starting at US 41 / US 150 / SR 63 (S Third St) then ~0.80 mi W on Hulman St then 0.14 mi S on 12th St)	Terre Haute	Vigo	0	2	1	0	2	19	0	21	4.27	2.84
100065272	N39.499729, W87.392435	Intersection of Lafayette Ave at Florida Ave (~2.21 mi NE of US 41 / N 3rd St)	Terre Haute	Vigo	0	2	5	0	2	16	8	26	4.82	2.75

**Table A.3: 2011 Five Percent List for Indiana Local Road Intersections 11 / 11**

ID	GIS Coordinates	Location	CITY	COUNTY	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-incap. & Possib. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (lcf)	Index of Crash Cost (lcc)
100066322	N39.477336, W87.386519	Intersection of N 21st St at Locust St (~1.47 mi E of US 41 / Third St)	Terre Haute	Vigo	0	2	0	0	2	16	2	20	4.32	2.67
100067168	N39.462908, W87.397648	Intersection of Poplar St at S 13th St (~0.87 mi E of US 41 / US 150 (Third St))	Terre Haute	Vigo	0	2	1	0	2	13	20	35	5.22	2.65
100001811	N39.843972, W84.917102	Intersection of NWL St at NW 11th St (Williamsburg Pike) (~1.50 mi W of US 27 / Chester Blvd)	Richmond	Wayne	0	2	2	0	2	22	4	28	5.16	3.13

**Table A.4: 2011 Five Percent List for Indiana Local Road Segments**

Table A.4: 2011 Five Percent List for Indiana Local Road Segments 1 / 6															
ID	GIS Start Point	Coordinates End Point	Location	City	County	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-incap. & Possib. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
100470906	N40.648391, W84.964381	N40.648438, W84.959294	Parkway St from 0.51 mi W of US 27 (S CR 150 W) then E 0.27 mi to Entrance to South Adams Jr.-Sr. High School	Berne	Adams	0	2	0	0	2	2	8	12	3.37	1.64
100500056	N41.002147, W85.190586	N41.002147, W85.185671	Airport Expy starting at 4.20 mi E of I-69 then E 0.26 mi to Baer Rd (0.13 mi E to 0.13 mi W of Ardmore Rd)	Fort Wayne	Allen	0	2	0	0	2	3	18	23	4.73	1.84
100574092	N40.902826, W85.261212	N40.909723, W85.261284	N CR 200 W from 3.62 mi S of I 469 (W CR 1100 ) then N 0.48 mi	SW of Fort Wayne	Allen	0	3	0	0	3	0	2	5	1.75	1.73
100500206	N41.045608, W85.209129	N41.045597, W85.203183	Engle Rd / Aboite Center Rd from 2.32 mi E of I-69 at Smith Rd then E 0.31 mi	Fort Wayne	Allen	0	3	0	0	2	1	4	7	2.5	1.53
100125575	N39.250388, W86.401614	N39.244642, W86.404449	N Shuffle Creek Rd from 1.28 mi N of SR 45 then N 0.44 mi to Midview Dr	S of Lake Lemon	Brown	0	3	0	0	3	1	0	4	1.52	1.77
100127613	N39.088447, W86.155952	N39.085815, W86.149026	Hamilton Creek Rd from 0.88 mi NE of SR 135 on Christiansburg Rd then SE 0.44 mi to Bob Allen Rd	SE of Nashville	Brown	0	3	0	0	3	0	0	3	1.25	1.72
100394603	N39.234103, W84.979021	N39.234143, W84.976148	N Dearborn Rd from 2.05 mi W of SR 1 then E 0.15 mi to Kline Creek Ln	E of New Alsace	Dearborn	0	3	0	0	3	0	0	3	1.70	1.73

**Table A.4: 2011 Five Percent List for Indiana Local Road Segments 2 / 6**

ID	GIS Coordinates Start Point	GIS Coordinates End Point	Location	City	County	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-incap. & Possib. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
100515181	N41.352341, W85.059553	N41.348828, W85.061285	CR 427 starting at 1.32 S of SR 8 / W 7th St (at driveway) then N 0.26 mi to Auburn Dr	Auburn	DeKalb	0	3	0	0	3	0	4	7	2.53	1.77
100574933	N41.396143, W85.098594	N41.403367, W85.098712	CR 19 from 2.03 mi N of SR 8 at CR 36 / CR 36A then N 0.50 mi	NW of Auburn	DeKalb	0	3	0	0	3	0	1	4	1.60	1.73
100544552	N38.347197, W86.911573	N38.354710, W86.909813	S CR 25 W from 1.12 mi S of SR 162 then N 0.58 mi	SE of Jasper	Dubois	0	3	0	0	3	0	0	3	0.45	1.68
100490542	N41.499669, W85.796332	N41.498258, W85.789180	CR 46 from 1.96 mi E of SR 15 then E 0.39 mi to CR 127	E of New Paris	Elkhart	3	0	0	0	3	0	0	3	1.05	1.71
100400998	N39.585592, W85.092695	N39.584331, W85.082893	E CR 375 S / E CR 400 S from 0.59 mi E of SR 1 then E 0.56 mi to S CR 300 E	SE of Connersville	Fayette	3	0	0	0	3	0	0	3	1.03	1.71
100408805	N39.436727, W84.910783	N39.444028, W84.910637	N Big Cedar Rd from 1.74 mi N of SR 252 at Seal Rd then N 0.52 mi to Riley Pike	E of Brookville	Franklin	0	3	0	0	3	0	0	3	1.29	1.72
100422348	N40.009598, W85.862224	N40.016900, W85.862271	Atlantic Ave from 0.92 mi S of SR 38 at W CR 650 S-48 then N 0.50 mi to E 156th St	E of Noblesville	Hamilton	0	3	3	0	3	0	0	3	1.13	1.71

**Table A.4: 2011 Five Percent List for Indiana Local Road Segments 3 / 6**

ID	GIS Coordinates Start Point	GIS Coordinates End Point	Location	City	County	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-incap. & Possib. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
100549359	N39.793084, W86.342453	N 39.793164, W86.336152	E CR 200 N from 3.64 mi W of I-465 (W Leg) at Nowling Ln then E 0.33 mi to N CR 1050 E	W of Indianapolis	Hendricks	0	2	1	0	2	8	7	17	3.75	1.99
100140795	N39.740974, W86.381066	N39.734965, W86.380805	S Dan Jones Rd starting 1.75 mi N of US 40 (Avon High School Drive) then N 0.42 mi to E CR 150 S	Avon	Hendricks	0	7	1	0	2	4	14	20	4.25	1.85
100141067	N39.718520, W86.418758	N39.718615, W86.408339	E CR 300 S from 1.03 mi W of SR 67 at S CR 600 E / Vestal Rd then E 0.47 mi to S CR 625 E	N of Plainfield	Hendricks	0	3	0	0	3	0	3	6	1.28	1.71
100147447	N39.777867, W86.376330	N39.778041, W86.366881	E CR 100 N from 1.25 mi E of SR 267 then E 0.50 mi	NE of Avon	Hendricks	0	2	2	0	2	4	1	7	1.59	1.63
100100234	N39.731256, W86.514018	N39.731253, W86.504762	E CR 200 S from 0.50 mi E of SR 39 then E 0.50 mi to Cartersburg Rd / CR 101 E	S of Danville	Hendricks	2	0	0	0	2	1	1	4	1.63	1.48
100280317	N40.446612, W86.203062	N40.4467293 W86.193636	WCR 200 S (starting at ~ 3.0 mi S of SR 22 and ~ 4.25 mi W of US 31) at S CR 400 W then E 0.50 mi to S CR 350 W	SW of Kokomo	Howard	0	3	0	0	3	0	0	3	-0.18	1.62
100129717	N39.574078, W86.244743	N39.576217, W86.242900	Old SR 37 N from 0.68 mi NE of SR 144 then NE 0.18 mi to WCR 700N	NE of Waverly	Johnson	0	3	0	0	3	0	0	3	1.27	1.71

**Table A.4: 2011 Five Percent List for Indiana Local Road Segments 4 / 6**

ID	GIS Coor Start Point	dinates End Point	Location	City	County	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-incap. & Possb. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
100042532	N38.633723, W87.455827	N38.628273, W87.447727	S Middle Hart Street Rd / SE CR 100 E from 3.60 mi SE of US 41 at SE CR 300 S then SE 0.58 mi to SE CR 400 S	SE of Vincennes	Knox	0	3	0	0	3	0	0	3	1.21	1.72
100575170	N41.525568, W85.437965	N41.525608, W85.431000	W CR 800 S-44 / W CR 1200 N-57 from 3.71 mi W of SR 9 at S CR 075 W-44) then E 0.37 mi	E of Wolcottville	Lagrange	0	3	0	0	3	0	0	3	1.32	1.72
100006299	N39.811586, W85.990872	N39.811639, W85.987179	E 30th from at 2.13 mi E of I-465 (E Leg) at N Mitthoeffer Rd then E 0.20 mi to Bavarian Dr	Indianapolis	Marion	1	1	2	0	2	7	29	38	6.13	2.24
100256708	N39.926284, W86.222286	N39.931828, W86.222312	Shelbourne Rd W from 0.17 mi N of I-465 (N Leg) at W 96th St then N 0.39 mi to Zonda Blvd / Innbrook Blvd	Indianapolis	Marion	0	3	0	0	3	0	1	4	1.73	1.73
100129768	N39.838414, W86.256450	N39.841757, W86.256553	Moller Rd from 0.28 mi S of I-65 at W 46th St then N 0.23 mi to W 51st St	Indianapolis	Marion	9	0	3	0	3	0	0	3	1.59	1.73
100156112	N39.676584, W86.082547	N39.680639, W86.082530	S Emerson Ave from 1.87 mi S of I-465 (S Leg) at Copper Ln then N 0.28 mi to E Edgewood Ave	S of Indianapolis	Marion	1	1	0	0	2	2	9	13	3.51	1.66
100267321	N40.000231, W86.074053	N40.000226, W86.070538	E 146th St from 2.82 mi E of US 31 at Dover Dr then E 0.19 mi to Hazel Dell Pkwy	NE of Carmel	Marion	0	2	0	0	2	1	0	3	1.63	1.48

**Table A.4: 2011 Five Percent List for Indiana Local Road Segments 5 / 6**

ID	GIS Coordinates Start Point	GIS Coordinates End Point	Location	City	County	Fatal Injuries (KF)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-incap. & Possib. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
100112906	N39.164547, W86.550797	N39.162700, W86.550512	S Adams St from 1.52 mi NE of SR 37 on W Bloomfield Rd then N 0.17 mi to S Patterson Dr	Bloomington	Monroe	1	3	0	0	4	6	19	29	5.32	2.45
100099474	N39.146823, W86.515083	N39.148274, W86.515105	S Maxwell St (starting at ~ 3.72 mi E of SR 37 and ~ 2.65 mi S of SR 45 / SR 46) at E Miller Dr then N 0.10 mi to Thornton Dr	Bloomington	Monroe	0	3	0	0	3	0	1	4	1.96	1.74
100100407	N39.107736, W86.462302	N39.112465, W86.465842	E Moores Creek Rd (starting from ~ 4.00 mi S of SR 46 and 5.00 mi E of SR 37 at Swartz Ridge Rd then NW 0.38 mi	SE of Bloomington	Monroe	0	3	6	0	3	0	0	3	1.10	1.71
100131420	N39.600795, W86.463733	N39.600872, W86.457291	Keller Hill Rd / W CR 1200 N from 0.84 mi E to 1.19 mi E (driveway) of SR 39	NE of Monrovia	Morgan	0	3	0	3	3	0	1	4	1.44	1.72
100136650	N39.479649, W86.418473	N39.485424, W86.417241	Blue Bluff Rd / N CR 150 E from 3.02 mi S of SR 67 then N 0.41 mi to IPL Plant entrance	N of Martinsville	Morgan	3	0	0	0	3	0	2	5	1.30	1.71
100220580	N41.552370, W87.066353	N41.561298, W87.066478	Meridian Rd from 0.17 mi N of US 6 at W Tyson Rd then N 0.62 mi to W Shakespeare	N of Valparaiso	Porter	0	2	0	0	2	2	4	8	1.92	1.55

**Table A.4: 2011 Five Percent List for Indiana Local Road Segments 6 / 6**

ID	GIS Coordinates Start Point	GIS Coordinates End Point	Location	City	County	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-incap. & Possb. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
100022778	N37.982585, W87.681883	N37.982466, W87.677376	Hogue Rd from the intersection with University Parkway 1.07 mi N of SR 62 then W 0.16 mi to Rossener Rd then E 0.25 mi Eickhoff Rd	W of Evansville	Posey	0	2	1	0	2	2	2	6	2.14	1.55
100542161	N39.069409, W87.442226	N39.074994, W87.442169	S CR 175 W (starting at ~ 1.77 mi W of US 41 / US 150 and 2.31 mi S of SR 154) at WCR 100 S then N 0.38 mi	SW of Sullivan	Sullivan	0	6	6	0	3	0	0	3	1.44	1.72
100221870	N40.326523, W86.864379	N40.332123, W86.860978	S CR 200 E (starting ~ 2.00 mi E of US 231 on CR 800 S then 1.78 mi N on CR 200 E at 0.10 mi S of Tranquil Ln then NE 0.44 mi to 0.44 mi S of Wea School Rd	S of Lafayette	Tippecanoe	0	3	3	0	3	0	0	3	0.63	1.69
100542986	N39.473041, W87.474245	N39.470273, W87.472514	Hill Rd / W Paris Ave from 1.71 mi W of US 150 then S 0.22 mi	NW of West Terre Haute	Vigo	3	0	0	0	3	0	0	3	1.48	1.72
100542766	N39.419681, W87.369142	N39.419544, W87.360223	E Moyer Dr from 1.94 mi W of SR 46 at S Fagin St then E 0.48 mi to 0.49 mi W of Riley Rd	SE of Terre Haute	Vigo	3	0	0	0	3	0	0	3	0.53	1.68
100034972	N37.965066, W87.398062	N37.967065, W87.397382	Old Indiana 261 from 0.88 mi SW of SR 66 at Alexandra Ln then NE 0.15 mi to Maple Ln	N of Newburgh	Warrick	3	0	0	0	3	0	0	3	0.87	1.71

**Table A.5: 2011 Five Percent List for Indiana Ramps**

Table A.5: 2011 Five Percent List for Indiana Ramps 1 / 1															
ID	GIS Start Point	Coordinates End Point	Location	City	County	Fatal Injuries (KP)	Incapac. Inj. (AP)	Non-incapacitating Injuries (BP)	Possible Injuries (CP)	Fatal & Incap. Inj. Crash (KA)	Non-incap. & Possib. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)	Index of Crash Frequency (ICF)	Index of Crash Cost (ICC)
809	N39.821303, W85.762848	N39.822081, W85.769910	Ramp from WB I-70 onto NB SR 9 (Ramp C) Interchange 104 on I-70	Greenfield	Hancock	0	2	6	1	2	4	1	7	1.84	1.68
1992	N39.801148, W86.034559	N39.799572, W86.030271	Ramp from SB I-465 (E Leg) onto WB I-70 (Directional Ramp E) Interchange 044 on I-465 (E leg) and Interchange 090 on I-70	Indianapolis	Marion	0	3	4	0	3	1	0	4	2.00	1.8
2071	N39.824375, W86.212560	N39.825246, W86.211593	Ramp from WB 38th St / NB I-65 onto Kessler Blvd. (Loop H) Interchange 005 on Kessler and Interchange 119 on I-65	Indianapolis	Marion	0	2	5	0	2	1	7	10	3.16	1.62

**Table A.6 MACOG Investigated Locations Meeting the 2011 Five Percent Selection Criteria**

Table A.6 MACOG Investigated Locations Meeting the 2011 Five Percent Selection Criteria 1/1								
Jurisdiction	GIS Coordinates	Location	CITY	COUNTY	Fatal & Incap. Inj. Crash (KA)	Non-incap. & Possb. Inj. Crash (BC)	PDO Crash (O)	Total Crash (TC)
INDOT	N 41.708622, W 86.250295	Intersection of SR 933 (S Dixie Highway) at Douglas Road (~ 0.97 mi S of I-80/I-90 (Toll Rd))	South Bend	St Joseph	2	14	45	61
INDOT	N 41.661112, W 86.179283	Intersection of SR 933 (Lincoln Way) at Church St (~ 2.12 mi W of SR 331 (Capital Ave))	Mishawaka	St Joseph	4	11	35	47
INDOT	N 41.723985, W 86.178097	Intersection of SR 23 (Cleveland Rd) at Main St / Gumwood Rd (~ 0.63 mi NE of I-80/I-90 (Toll Rd) on South bend Ave then ~ 0.62 mi E on Cleveland Rd)	N of Mishawaka	St Joseph	2	17	81	102
MACOG	N 41.673980, W 85.970348	Intersection of W Indiana Ave at Benham Ave (~ 1.70 mi E of SR 19)	Elkhart	Elkhart	3	6	10	17
MACOG	N 41.686964, W 85.974965	Intersection of Jackson Blvd and 2nd St (Starting at SR19 (Bristol St) and Main ST then S ~0.67 mi then SSE ~ 0.40 mi then W ~0.08 mi)	Elkhart	Elkhart	2	8	19	28
MACOG	N 41.522833, W 85.770198	Intersection of CR 42 at CR 31 (~ 0.41 mi E of US 33 (Lincolnway))	SE of Goshen	Elkhart	2	5	10	16
MACOG	N 41.659693, W 85.887377	Intersection of CR 17 at CR 18 (~0.50 mi S of US 20 (St Joseph Valley Parkway))	NW of Goshen	Elkhart	6	17	31	48
MACOG	N 41.687426, W 86.216265	Intersection of Ironwood Dr at Corby Blvd and Rockne Dr. (~ 0.86 mi S of SR 23 (South Bend Ave))	NE of South Bend	St Joseph	2	4	10	14