

City of Iowa City Traffic Collision Analysis 2015-2017



CITY OF IOWA CITY

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Introduction

This report identifies high collision locations in Iowa City for the years 2015 through 2017. The goal of this report is to increase awareness of high collision locations. As a result, Iowa City will be able to identify and implement countermeasures designed to reduce collisions at these locations. The previous collision study analyzed collisions between years 2013 and 2015, which will be compared to the collisions that occurred between 2015 and 2017.

The data used in this report was sourced from the Iowa Department of Transportation (Iowa DOT). The Iowa DOT obtains copies of collision reports from local jurisdictions to compile a database called the Iowa Crash Analysis Tool. This report utilizes the most complete and current data available from the Iowa DOT for the years 2015 through 2017.

Evaluation Process

Collision frequency was summarized for all intersection and mid-block locations in Iowa City. Locations with **three or more** collisions were evaluated for this report. The total number of intersection locations (locations with three or more collisions) within the Iowa City area is 171. The total number of mid-block collision locations (locations with three or more collisions) is 64. Each location is ranked using the Iowa DOT Office of Traffic Safety weighted formula. The formula has three data inputs: number of collisions (weighted at 25%), crash rate (weighted at 25%), and severity of the collisions (weighted at 50%). The three inputs are explained in more detail below.

Inputs

1. **Number of collisions** – This is the total number of collisions per location obtained from the Iowa Crash Analysis Tool during the years 2015-2017. Based on the number of collisions, each location was given a score. Scores are assigned as shown in **Table 1**.
2. **Crash Rate** – This is the total number of collisions per one-million vehicles divided by the total number of days per Annual Average Daily Traffic (AADT). Crash rates allow each intersection to be evaluated with a common denominator. The crash rate is then assigned a corresponding score as shown in **Table 1**.

Intersection crash rate formula:
$$\frac{(\# \text{ Collisions}) * (1,000,000)}{(\# \text{ Days}) * (\text{Total entering AADT})}$$

Mid-block crash rate formula:
$$\frac{(\# \text{ Collisions}) * (1,000,000)}{(\# \text{ Days}) * (\text{Total AADT}) * (\text{segment length in miles})}$$

3. **Severity** – This is the combined severity of all collisions per location. Collisions are categorized by: property damage only, possible/unknown personal injury, minor personal injury, major personal injury, and fatality. These types of collisions are given a weight of 1, 1, 3, 5, and 12, respectively, and then totaled to give each location a severity raw score. These raw scores are then converted to a total severity score as shown in **Table 1**.

Weighted Formula

After points are assigned for the three categories, the points are entered into the Iowa DOT weighted ranking formula and organized from highest to lowest rank as shown on **Pages 18-23**.

$$\text{Formula: } (\text{Collision Points} * 0.25) + (\text{Crash Rate Points} * 0.25) + (\text{Severity Points} * 0.5)$$

Table 1: Iowa DOT Evaluation Criteria and Associated Points

Evaluation Points					
Number of Collisions		Crash Rate		Severity	
Collisions	Points	Rate	Points	Raw Score	Points
>29	15	>3.5	15	>56	15
27-28	14	3.26-3.5	14	53-56	14
25-26	13	3.01-3.25	13	49-52	13
23-24	12	2.76-3.0	12	45-48	12
21-22	11	2.51-2.75	11	41-44	11
19-20	10	2.26-2.5	10	37-40	10
17-18	9	2.01-2.25	9	33-36	9
15-16	8	1.76-2.0	8	29-32	8
13-14	7	1.51-1.75	7	25-28	7
11-12	6	1.26-1.5	6	21-24	6
9-10	5	1.01-1.25	5	17-20	5
7-8	4	0.76-1.0	4	13-16	4
5-6	3	0.51-0.75	3	9-12	3
4	2	0.26-0.5	2	5-8	2
3	1	<0.25	1	<5	1

Intersection Evaluation

Assumptions

The following assumptions were made for collisions occurring at intersections:

- Collisions occurring within 250 feet (+/- 50) feet from the intersection of streets **will** be included.
- Sideswipes involving Failure to Yield (FTY) **will** be included, whereas sideswipes for vehicles traveling the same direction **will not** be included (i.e. changing lanes, hitting a parked car).
- If the data record is incomplete regarding the manner of the crash, but still involves two vehicles, it **will** be counted.
- If the roadway type is a commercial/residential drive, the crash **will not** be counted.
- If the roadway type is a non-intersection but the manner of the crash is likely caused by the intersection (i.e. rear-end) the crash **will** be counted.
- Collisions involving one vehicle **will** be counted, assuming the accident was most likely caused by the intersection.

Top 10 Intersections

Figure 1 displays the top ten intersections in Iowa City, between 2015 and 2017, with the highest combined score after taking into account the number of collisions, crash rate, and severity of collisions. Three of the ten intersections are located on Riverside Drive and four are sited along the Hwy 1/ Hwy 6 corridor. As shown in **Table 2**, the intersections of E Burlington Street/ S Gilbert Street and S Riverside Drive/ W Benton Street are both ranked sixth as they have the same combined score of 9.25. Similarly, the intersections of Riverside Drive/ Hwy 1 and Hwy 6, Hwy 1/ Mormon Trek Boulevard, and Madison Street/ W Burlington Street are all ranked eighth with a combined score of 8.75.

Figure 1: Top 10 Intersection Collision Locations

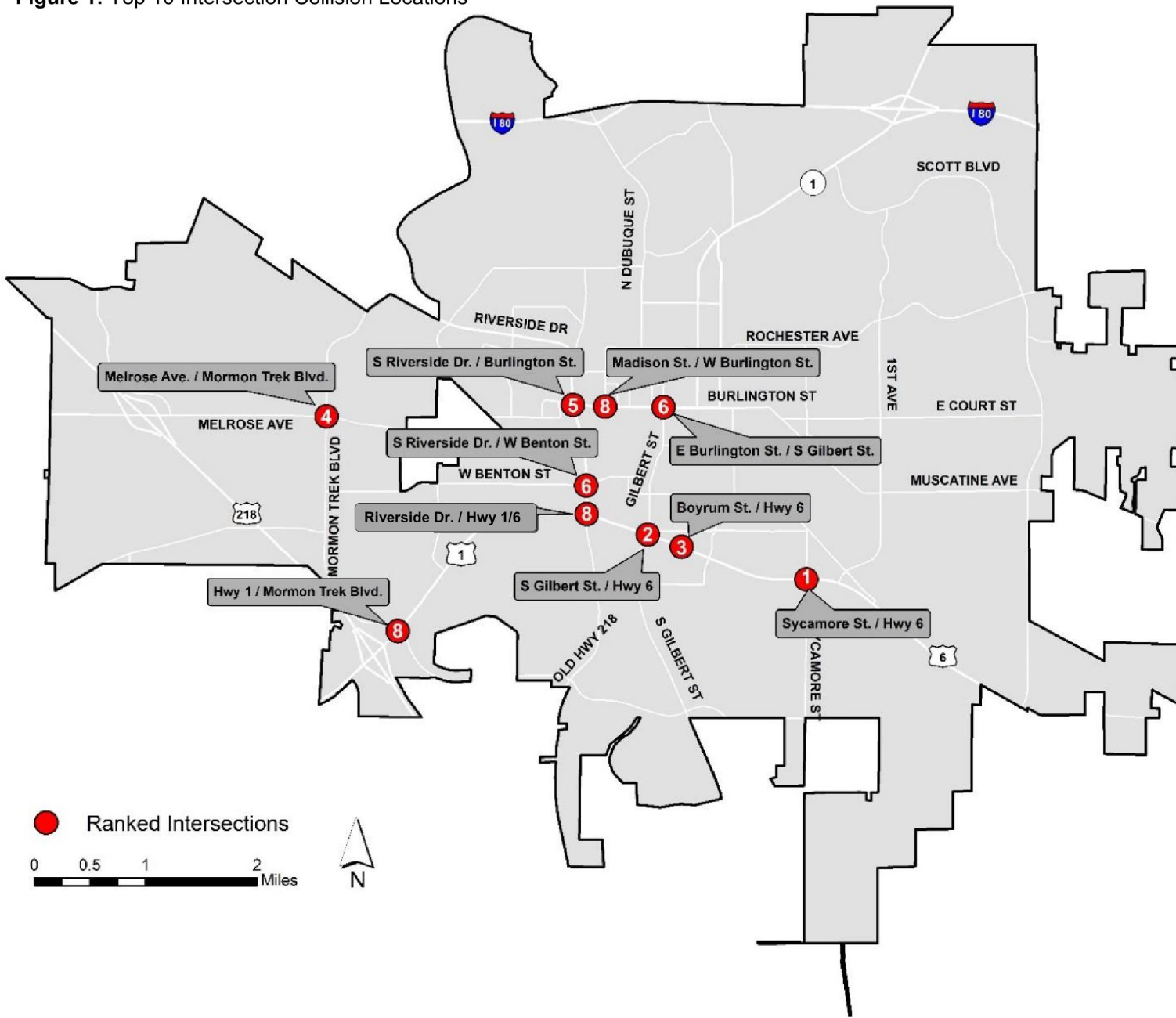


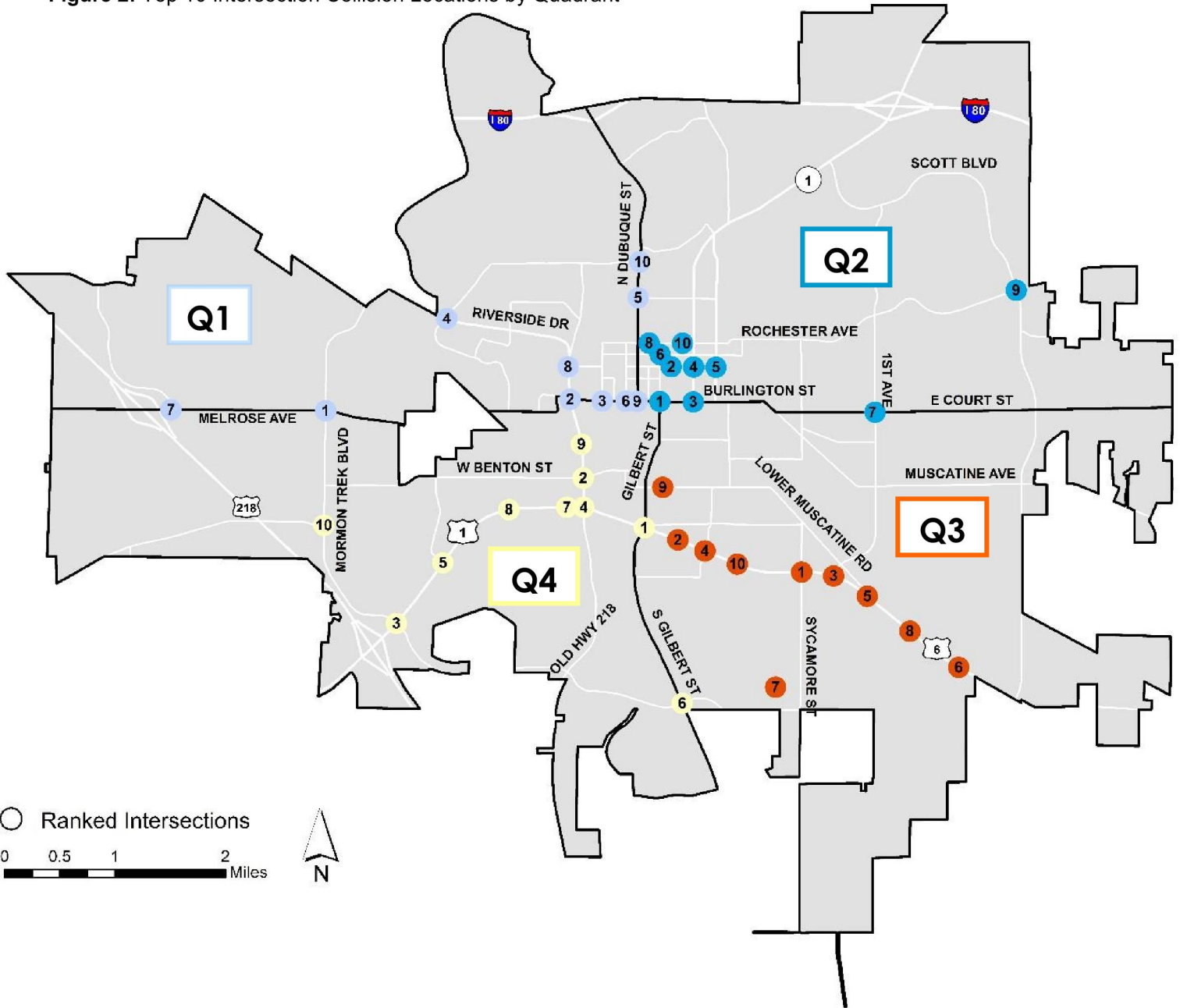
Table 2: Top 10 Intersection Collision Locations

Ten Highest Ranking Intersections		
ID	Intersection Location	Intersection Rank
1	Sycamore St. and Hwy 6	1
2	S Gilbert St. and Hwy 6	2
3	Boyrum St. and Hwy 6	3
4	Melrose Ave. and Mormon Trek Blvd.	4
5	Riverside Dr. and W Burlington St. / Grand Ave.	5
6	E Burlington St. and S Gilbert St.	6
6	S Riverside Dr. and W Benton St.	6
8	Riverside Dr. and Hwy 1 / Hwy 6	8
8	Hwy 1 and Mormon Trek Blvd.	8
10	Madison St. and W Burlington St.	8

Top 10 Intersection Collision Locations by Quadrant

In order to further evaluate the types of intersections with high collision/crash/severity rates, the City was divided into four quadrants defined by major arterials (Dubuque Street, Gilbert Street, Melrose Avenue, Burlington Street and Court Street). **Figure 2** and **Tables 3 and 4** display the top ten intersections with the highest combined score by quadrant.

Figure 2: Top 10 Intersection Collision Locations by Quadrant



When analyzing the collisions by quadrant, it becomes evident that a majority of intersections with the highest combined score are located along major corridors or at intersections with higher volumes.

The highest-ranking intersections in *Quadrant 1* are primarily located along Melrose Avenue and Dubuque Street. In *Quadrant 2* the highest collision locations are situated along Burlington Street and in downtown Iowa City. The majority of intersections with the highest-ranking collisions in *Quadrant 3* are located along the Highway 6 corridor. Lastly, in *Quadrant 4* the highest-ranking intersections are situated along Highway 1.

Table 3: List of Top 10 Intersection Collision Locations for Quadrants 1 and 2

Ten Highest Ranking Intersections by Quadrant		
Intersection Rank	Quadrant	
	1	2
	<i>West of Dubuque St. & North of Melrose Ave</i>	<i>East of Dubuque St. & North of Burlington St./Court St.</i>
1	Camp Cardinal Blvd. and Melrose Ave.	Gilbert St. and Burlington St.
2	Kennedy Pkwy. And Melrose Ave.	Iowa Ave. and Van Buren St.
3	Galway Dr. and Melrose Ave.	Dodge St. and E Burlington St.
4	Dublin Dr. and Melrose Ave.	Dodge St. and Iowa Ave.
5	Hawkeye Park Rd. and Melrose Ave.	Governor St. and Iowa Ave.
6	Melrose Ave. and Westwinds Dr.	E Jefferson St. and N Gilbert St.
7	Melrose Ave. and Mormon Trek Blvd.	E Court St. and S 1 st Ave.
8	Bartlett Rd. and Mormon Trek Blvd.	E Market St. and N Linn St.
9	Cameron Way and Mormon Trek Blvd.	N Scott Blvd. and Rochester Ave.
10	Mormon Trek Blvd. and Westwinds Dr.	E Market St. and Johnson St.

Table 4: List of Top 10 Intersection Collision Locations for Quadrants 3 and 4

Ten Highest Ranking Intersections by Quadrant		
Intersection Rank	Quadrant	
	3	4
	<i>East of Gilbert St. & South of Burlington St./Court St.</i>	<i>West of Gilbert St. & South of Melrose Ave</i>
1	Hwy 6 and Sycamore St.	S Gilbert St. and Hwy 6
2	Hwy 6 and Boyrum St.	S Riverside Dr. and W Benton St.
3	S 1 st Ave. and Hwy 6	Hwy 1 and Mormon Trek Blvd.
4	Keokuk St. and Hwy 6	Hwy 1 and Hwy 6
5	Fair Meadows Blvd. and Hwy 6	Hwy 1 and Sunset St.
6	Heinz Rd. and Hwy 6	McCollister Blvd. and S Gilbert St.
7	Dickenson Ln. and Russell Dr.	Hwy 1 and Orchard St.
8	Industrial Park Rd. and Hwy 6	Hwy 1 and Ruppert Rd.
9	Gilbert Ct. and Kirkwood Ave.	Myrtle Ave and S Riverside Dr.
10	Broadway St. and Hwy 6	Cae Dr. and Rohret Rd.

2013-2015 / 2015-2017 Collision Comparison

In comparing the top ten intersections between 2013 and 2015 to those between 2015 and 2017, the data shows collision numbers, severity of collisions and collision rates continue to remain constant as shown in **Figures 3** and **4**. Two intersections moved into the top ten ranking (Riverside Dr./ Highway 1 and 6 and Highway 1/ Mormon Trek Boulevard) and two intersections moved out of the ranking (Riverside Drive/ Hawkins Drive and Highway 6/ Fair Meadows Boulevard).

Figure 3: Total Collisions

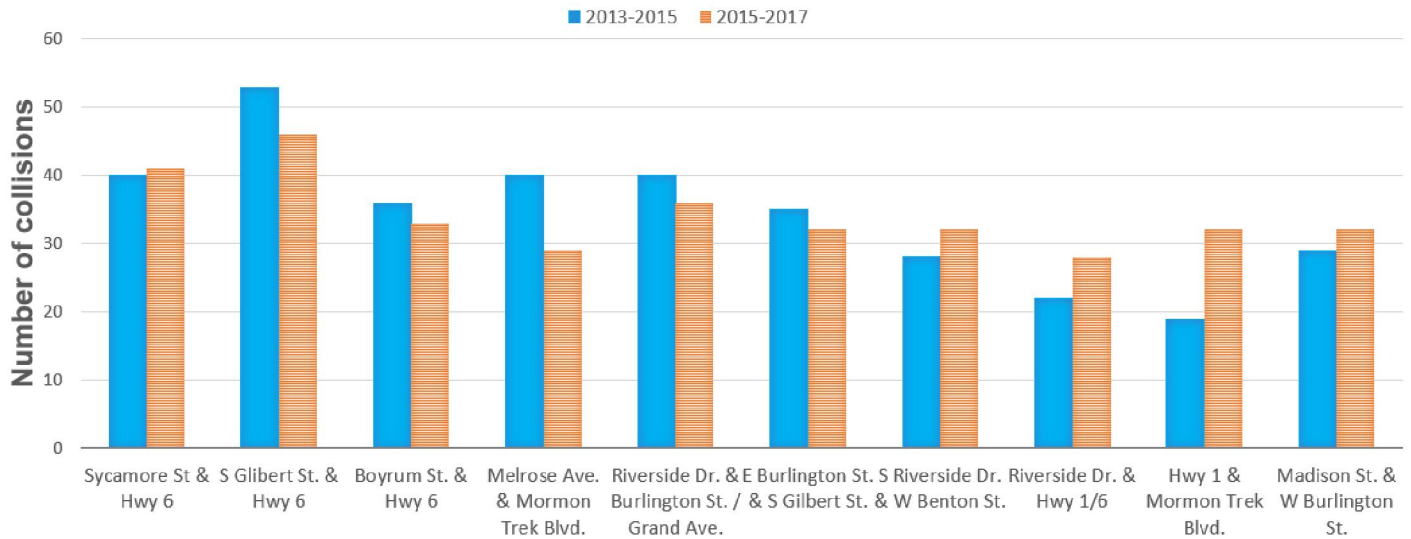


Figure 3 compares the total number of collisions for the top ten intersection locations between 2015 and 2017 to those between 2013 and 2015. Between 2013 and 2017, the intersection with the highest number of total collisions was S Gilbert Street/ Highway 6.

Figure 4: Manner of Collision

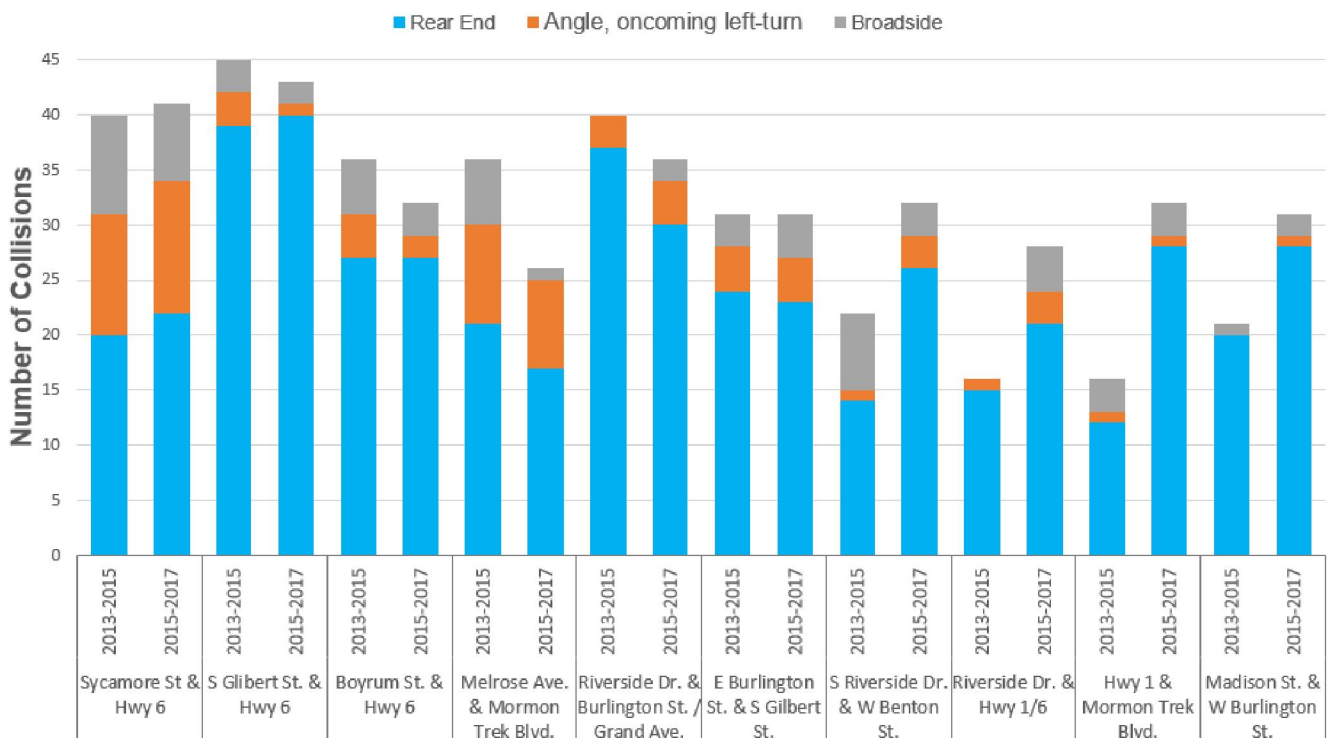


Figure 4 compares the three highest collision types for each intersection between 2013 and 2015 to those between 2015 and 2017. Across the ten intersections, rear-end collisions account for a majority of collisions followed by angle, oncoming left-turn collisions.

2018-2022 Capital Improvement Program Projects

Of the top ten intersection collision locations, two intersections have projects scheduled in Iowa City's 2018-2022 Capital Improvement Program. The Mormon Trek Boulevard four to three lane conversion will be completed in 2019 and will help to reduce the number of rear-end and angle, oncoming left-turn collisions by upwards of 25% because of the dedicated center left-turn lane. The conversion will also improve walkability with fewer lanes for pedestrians to cross, and traffic will be located farther from the sidewalk.

Table 5: CIP Projects

CIP #S3868	Melrose Ave. & Mormon Trek Blvd.
<ul style="list-style-type: none"> • This project includes the installation of a right hand turn lane from Mormon Trek to Benton St, updated roadway lighting, and the conversion of a portion of Mormon Trek from four lane to three lane. • These improvements will help to alleviate traffic back-ups and reduce vehicle accident issues. 	
CIP #S3834	Madison St. & W Burlington St.
<ul style="list-style-type: none"> • Reconstruction of the intersection of Burlington & Madison to add turn lanes on Madison, signal improvements and replacement of water and sewer mains as well as the potential installation of a landscaped median from the Iowa River to Madison St. • Improvements will address pedestrian and traffic flows associated with the University. 	

The Madison Street and Burlington Street intersection will be reconstructed to add turn lanes on Madison Street and signal improvements, amongst others, in order to address pedestrian and vehicle traffic flows. These improvements will also help to reduce the number of rear-end collisions as vehicles will be able to queue in a dedicated turn-lane as compared to queuing in a through/ left-turn lane. Additionally, with only one dedicated through lane the number of broadside collisions may also decrease as opposing vehicles will only need to respond to one-lane of oncoming vehicles. This project will begin in 2019.

Potential Countermeasures

To date, staff reviewed the top ten intersection collision locations and have identified and/or implemented potential countermeasures at multiple intersections.

- Hwy 6 & Sycamore Street: Staff is currently researching the flashing yellow arrow sequence at the intersection.
- Hwy 6 & Gilbert Street: Staff installed a 'Yield to Pedestrian' sign on the northwest corner of the intersection for west to northbound right-turning vehicles. This will remind motorists to yield to pedestrians as they turn right.
- Hwy 6 & Boyrum Street: Staff is reviewing the left-turn traffic signal poles, shields, etc. to determine if any adjustments need to be made.
- Hwy 1/ Hwy 6 corridor: Staff reviewed the signal timings for yellow clearance and will adjust if necessary.

Staff intends to continue to monitor the top ten intersection collision locations to identify potential countermeasures to decrease the number and severity of collisions. An overview of best practice countermeasures is available on **Page 14**.

Mid-Block Evaluation

Assumptions

The following are the assumptions made for collisions at mid-blocks:

- Collisions occurring within 250 feet (+/- 50) feet from the intersection of nodes (nodes only include public streets) **will** be included.
- Types of roadways include: all non-intersection, intersection with bike/pedestrian, other intersection, not reported, T-Intersection, and unknown. Cloverleaf freeway ramps and railroad crossings are not considered intersections. Roundabouts/traffic circles are intersections. Alleyways are not considered intersections, and collisions occurring in the alleyways **will not** be counted. Crashes on exit/entrance ramps for interstate freeways **will not** be counted.
- Major Causes do *not* include: ran traffic signal, FTY at uncontrolled intersection, FTY making right turn on red signal, FTY from yield sign.
- Collisions unlikely caused by the intersection (as ascertained from the crash report) **will be** counted.
- If the roadway type is a commercial/private road (with other roads intersecting it), the crash **will not** be counted. If the roadway is a private commercial/residential driveway, the crash **will** be counted, except if there is a traffic controlling device on it at the main road (i.e. traffic light). Accidents in alleyways/parking lots/institutional roads **will not** be counted. Accidents with vehicles entering or exiting alleyways/parking lots/institutional roads **will** be counted.
- Collisions involving one vehicle **will** be counted.
- Sideswipes while vehicles were traveling the same direction **will** be included (i.e. changing lanes, hitting a parked car), while sideswipes involving FTY at an *intersection* **will not** be included.
- If the data record regarding the manner of the crash is incomplete, but involves at least one vehicle, it **will** be counted.
- If the roadway type is a non-intersection but the manner of the crash is likely caused by the intersection (i.e. rear-end) the crash **will not** be counted.

Top 5 Mid-Block Collision Locations

Figure 5 depicts the top five mid-block collision locations in Iowa City (2015-2017). Two of the five locations are located along the Highway 1 and 6 corridor. The other three locations are located along Riverside Drive, Dubuque Street and North Dodge Street. **Table 6** lists the midblock rankings and their associated ID number.

Figure 5: Top 5 Mid-Block Collision Locations

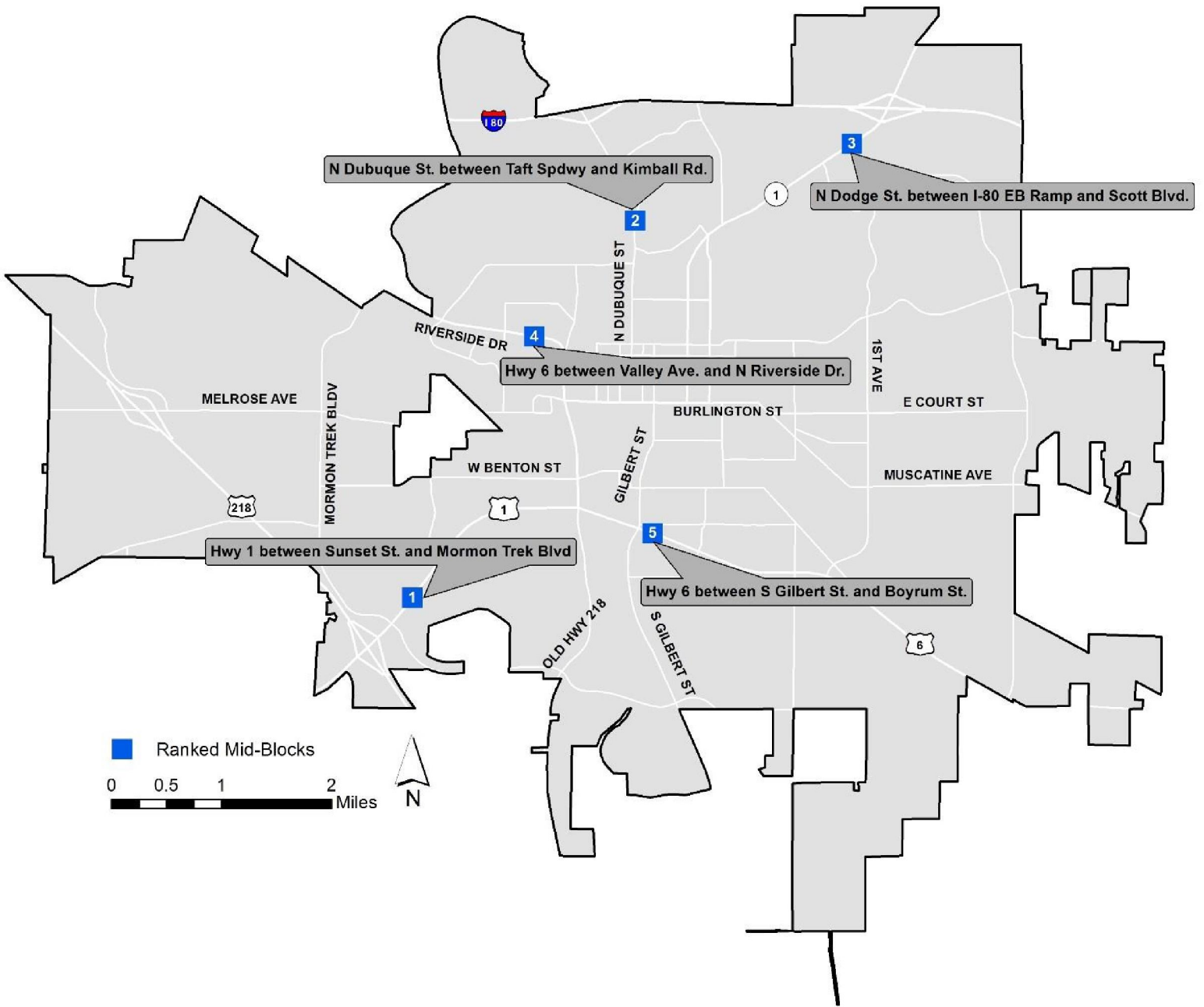


Table 6: Top 5 Mid-Block Collision Locations

Five Highest Ranking Mid-Block Locations		
ID	Mid-Block Location	Mid-Block Rank
1	Hwy 1 between Sunset St. and Mormon Trek Blvd.	1
2	N Dubuque St. between Taft Speedway and Kimball Rd.	2
3	N Dodge St. between I-80 EB Ramp and Scott Blvd.	3
4	Hwy 6 between Valley Ave. and N Riverside Dr.	4
5	Hwy 6 between S Gilbert St. and Boyrum St.	5

Top 5 Mid-Block Collision Locations by Quadrant

Figure 6: Top 5 Mid-Block Collision Locations by Quadrant

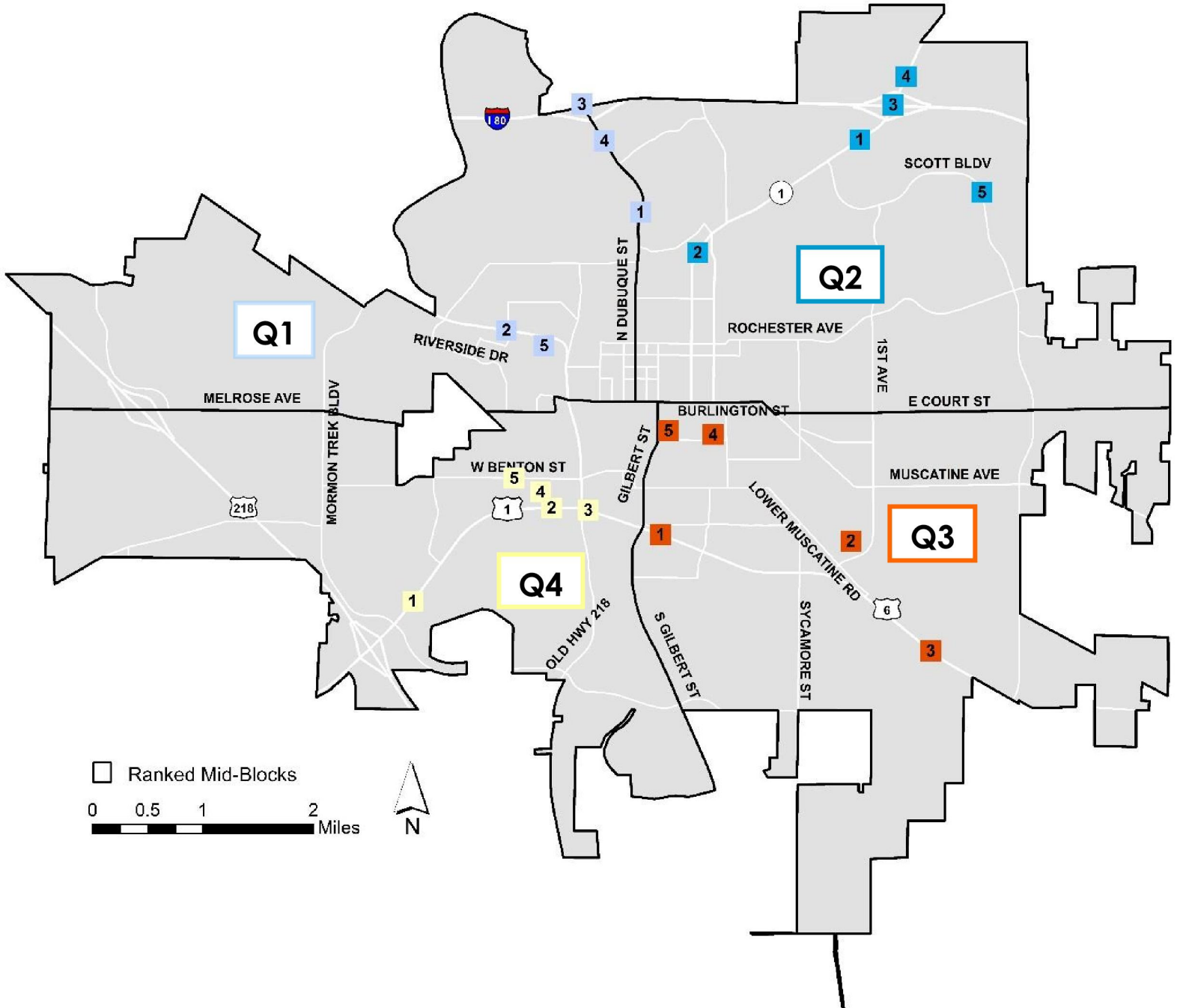


Figure 6 displays the top five mid-block collision locations by quadrant. The four quadrants are defined by major arterial streets, which allows for a comprehensive view of the highest ranking mid-block locations across Iowa City. Specific intersection information can be found in **Tables 7 and 8**. The highest ranking mid-block locations are primarily situated along major arterial and collector streets.

The highest-ranking locations in *Quadrant 1* are primarily located along Dubuque Street. In *Quadrant 2* the highest collision locations are situated along North Dodge Street. In *Quadrant 3* the mid-block collision locations are varied with several located along the Highway 6 corridor. Lastly, in *Quadrant 4* the highest-ranking mid-block locations are situated primarily along Highway 1.

Table 7: List of Top 5 Mid-Block Collision Locations for Quadrants 1 and 2

Ten Highest Ranking Intersections by Quadrant		
Intersection Rank	Quadrant	
	1	2
	<i>West of Dubuque St. & North of Melrose Ave</i>	<i>East of Dubuque St. & North of Burlington St./Court St.</i>
1	N Dubuque St. between Taft Speedway and Kimball Rd.	N Dodge St. between I-80 EB Ramp and Scott Blvd.
2	Hwy 6 between Valley Ave. and N Riverside Dr.	Dodge St. between Governor St. and Brown St
3	N Dubuque St. between I-80 WB Ramp and I-80 EB Ramp	N Dodge St. between I-80 WB Ramp and I-80 EB Ramp
4	N Dubuque St. between I-80 EB Ramp and Meadow Ridge Ln.	N Dodge St. between Northgate Dr. and I-80 WB Ramp
5	Newton Rd. between Woolf Ave. and S Riverside Dr.	Scott Blvd. between N 1 st Ave. and Rochester Ave.

Table 8: List of Top 5 Mid-Block Collision Locations for Quadrants 3 and 4

Ten Highest Ranking Intersections by Quadrant		
Intersection Rank	Quadrant	
	3	4
	<i>East of Gilbert St. & South of Burlington St./Court St.</i>	<i>West of Gilbert St. & South of Melrose Ave</i>
1	Hwy 6 between S Gilbert St. and Boyrum St.	Hwy 1 between Sunset St. and Mormon Trek Blvd.
2	Mall Dr. between Lower Muscatine Rd. and S 1 st Ave.	Hwy 1 between Hudson Ave. / Shirken Dr. and Orchard St.
3	Hwy 6 between Lakeside Dr. and Heinz Rd.	Hwy 6 between S Riverside Dr. and Sturgis Corner Dr.
4	Governor St. between Burlington St. and Bowery St.	Hudson Ave. between Benton St. and Hwy 1
5	Van Buren St. between Burlington St. and Bowery St.	W Benton St. between Greenwood Dr. and Miller Ave.

2013-2015 / 2015-2017 Mid-Block Collision Comparison

In comparing the top five mid-block collision locations between 2013 and 2015 to those between 2015 and 2017, the data shows collision numbers, severity and collision rates continue to remain constant as shown in **Figures 7 and 8**.

Hwy 1 between Sunset Street and Mormon Trek Boulevard experienced a significant increase in the number of collisions between 2015 and 2017 moving it from the third highest ranking location to the first. The midblock location on Hwy 6 between S Gilbert Street and Boyrum Street dropped from fourth to fifth in the intersection ranking and the combined score increased slightly from 8.25 to 8.5. Though the combined score increased slightly, the number of collisions, crash rate, and severity of collisions remained roughly the same. The midblock locations ranked second through fourth between 2015 and 2017 were not in the top five ranking between 2013 and 2015. These locations experienced an increase in collisions, severity, and crash rate.

Figure 7: Total Collisions

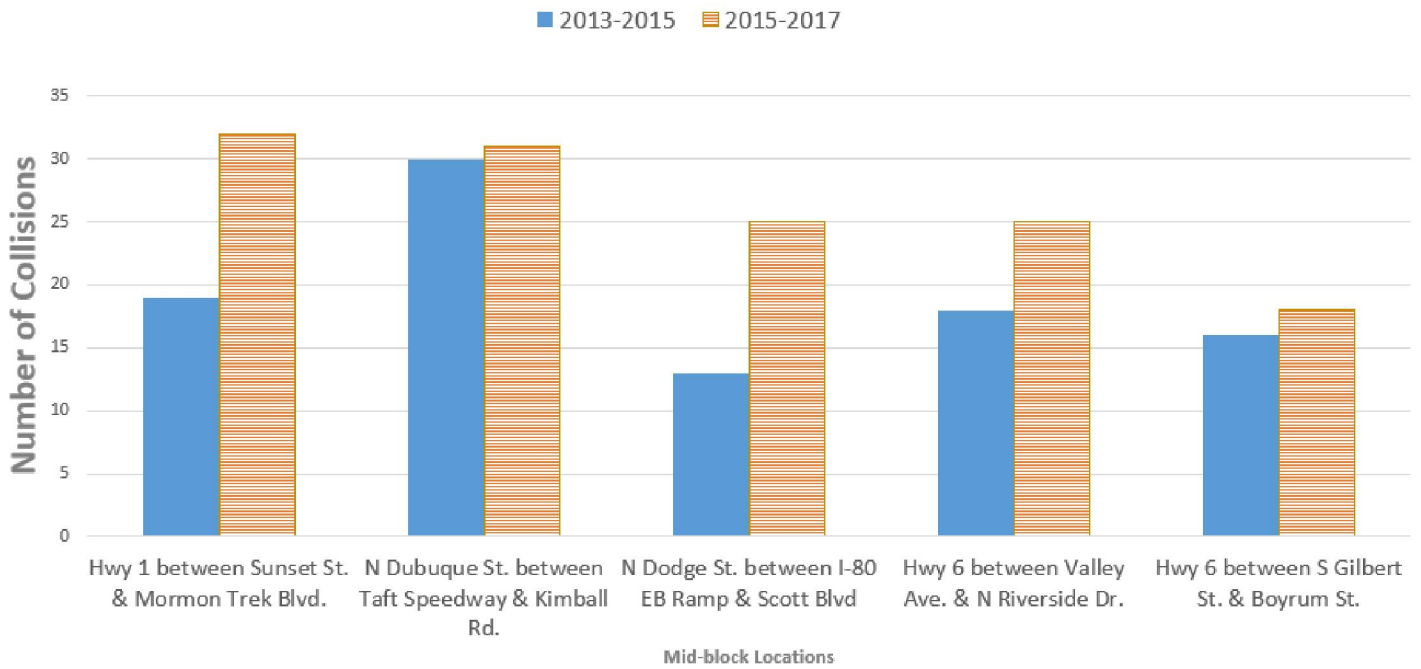
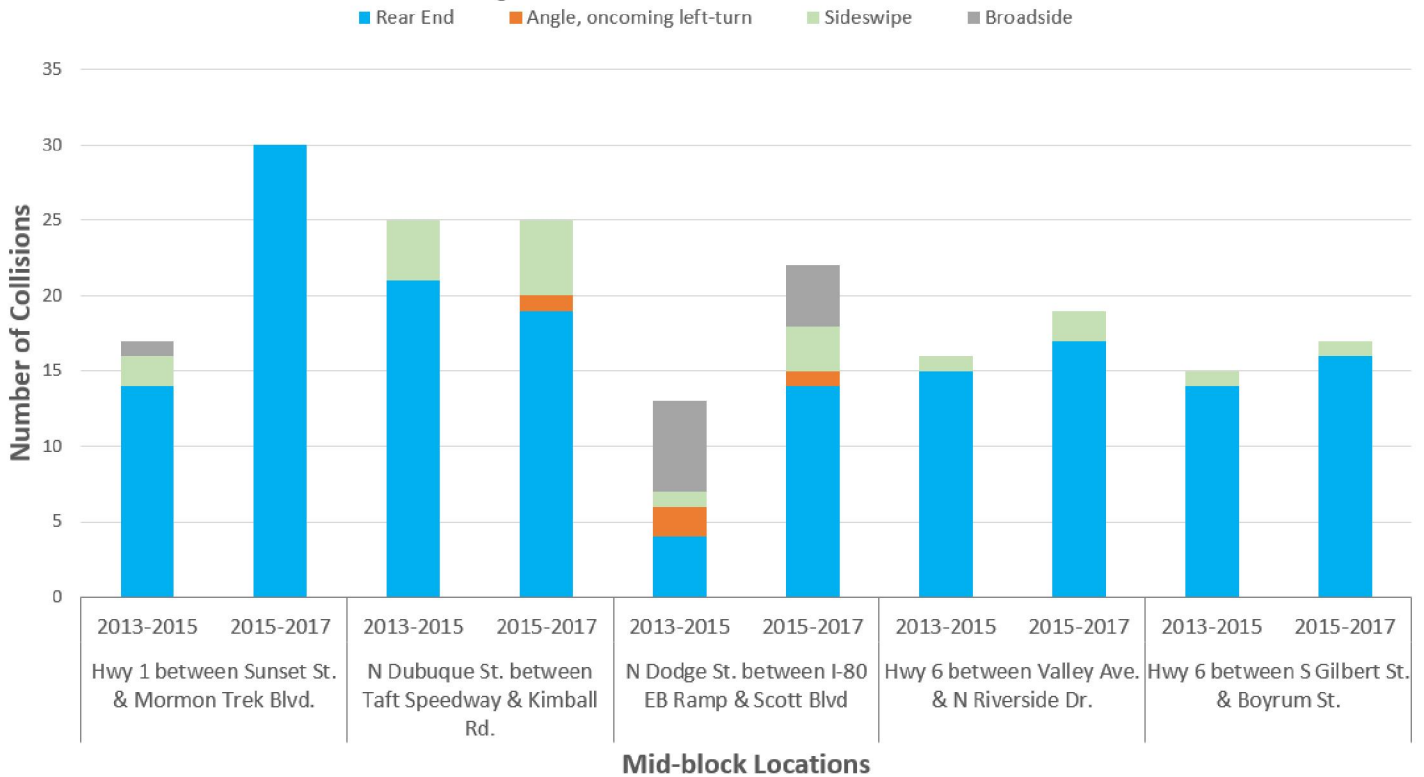


Figure 8 compares the four highest collision manners (rear-end, angle, oncoming left-turn, sideswipe, and broadside) for each mid-block location between 2013 and 2015 to those between 2015 and 2017. Across the five mid-block locations, rear-end collisions account for a majority of collisions followed by sideswipe collisions. All five mid-block locations experienced an increase in the total number of collisions.

Figure 8: Manner of Collision



2018-2022 Capital Improvement Program Projects

Of the top five mid-block collision locations, two locations have projects scheduled in Iowa City's 2018-2022 Capital Improvement Program. The N Dubuque Street project (Gateway Project) involved the reconstruction and elevation of Dubuque Street while also addressing pedestrian and traffic flows. The project is currently in the final stages of completion and may decrease the number of rear-end and angle-oncoming left-turn collisions, with the decrease in the posted speed limit from 30-mph to 25-mph.

A resurfacing project on Highway 6 between Rocky Shore Drive and Hwy 1 and Hwy 6 will be completed in 2019. While the resurfacing may not have direct impacts on the number of collisions, new pavement markings may reinforce driver expectations and reduce collisions.

Potential Countermeasures

Staff intends to review the top five mid-block collision locations to identify potential countermeasures to decrease the number and severity of collisions. An overview of best practice countermeasures is available on **Page 14**.

Table 9: CIP Projects

CIP #3809

N Dubuque St. between Taft Speedway & Kimball Rd.

- This project reconstructs and elevates Dubuque St as well as replaces Park Road Bridge, including multi-modal features and flood protection.
- Secondly, these improvements will address pedestrian and traffic flows.

CIP #S3943

Hwy 6 between Valley Ave. & N Riverside Dr.

- This project is part of the 2018 DOT plan to resurface Hwy 6/Riverside Dr from Rocky Shore Dr to Hwy 1/Hwy 6.

Potential Countermeasures

After identifying the highest ranked collision locations in Iowa City, the next step is to identify potential countermeasures. Countermeasures can be defined as a device, program, policy, or capital investment intended to improve safety and reduce the number of collisions. To follow are best practices available to assist in identifying countermeasures depending on the collision pattern and probable cause. Staff will use these best practices to help identify any countermeasure that could be implemented to reduce the number, rate and severity of collisions.

Collision Pattern	Probable Cause	General Countermeasure
Right angle collisions at unsignalized intersections	Restricted sight distance	Remove sight obstructions Restrict parking near corners Install/improve street lighting Reduce speed approaches* Install signals [see MUTCD] Install stop signs [see MUTCD] Install warning signs [see MUTCD] Install yield signs [see MUTCD] Channelize intersections
	Large total intersection volume	Install signals [see MUTCD] Reroute through traffic
	High approach speed	Reduce speed limit on approaches* Install rumble strips
	Roadway design inadequate	Widen lanes Change from angle to parallel parking Prohibit parking Reroute through traffic
Rear end collisions at unsignalized intersections	Pedestrian crossing	Install/improve signing or marking of pedestrian crosswalk Relocate crosswalk
	Driver not aware of intersection	Install/improve warning signs
	Slippery surface	Overlay pavement Provide adequate drainage Groove pavement Reduce speed limit on approaches* Provide "SLIPPERY WHEN WET" signs
	Large number of turning vehicles	Create Left- or right-turn lanes Prohibit turns Increase curb radii

*Spot speed study should be conducted to justify speed limit reduction

Collision Pattern	Probable Cause	General Countermeasure
Rear end collisions at signalized intersections	Poor visibility of signals	Install / improve advance warning devices Install overhead signals Install 12" signal lenses [see MUTCD] Install visors Install backplates Relocate signals Add additional signal heads Remove obstacles Reduce speed limits on approaches*
	Inadequate signal timing	Adjust amber phase Provide progression through a set of signalized intersections
Fixed object collisions and/or vehicles running off roadway	Slippery surface	Overlay pavement Provide adequate drainage Groove pavement Reduce speed limit on approaches* Provide "SLIPPERY WHEN WET" signs
	Roadway design inadequate for traffic conditions	Widen lanes Relocate islands Close curb lane
	Poor delineation	Improve / install pavement markings Install roadside delineators Install advance warning devices
Sideswipe collisions between vehicles traveling opposite directions or head-on collisions	Roadway design inadequate for traffic conditions	Improve / install pavement markings Channelize intersections Create one-way streets
		Remove constrictions such as parked vehicles Install median divider Widen lanes
Collisions between vehicles traveling in same direction such as sideswipe, turning, or lane changing	Roadway design inadequate for traffic conditions	Widen lanes Channelize intersections Provide turning bays
		Install/improve parking lane lines Remove parking
Collisions with parked cars or cars being parked	Large parking turnover	Prohibit parking Change from angle to parallel parking Reroute through traffic Create one-way streets Create off-street parking Reduce speed limit*

*Spot speed study should be conducted to justify speed limit reduction

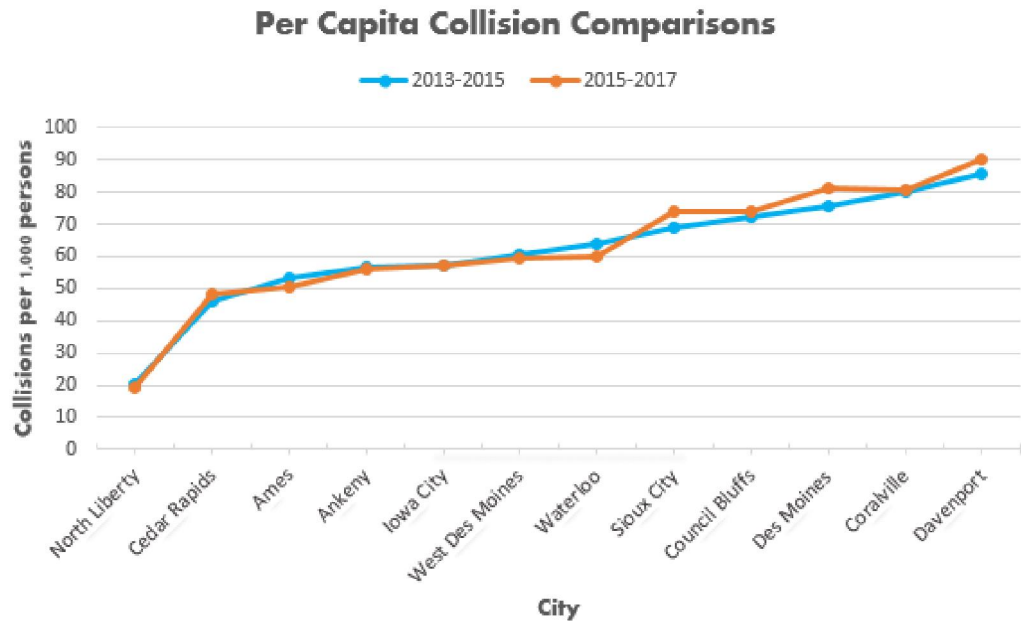
Collision Pattern	Probable Cause	General Countermeasure
Right angle collisions at signalized intersections	Poor visibility of signals	Install/improve advance warning devices Install overhead signals Install 12" signal lenses [see MUTCD] Install visors Install backplates Improve location of signal heads Add additional signal heads Reduce speed limits on approaches*
	Inadequate signal timing	Adjust amber phase Provide all-red clearance phase Add multi-dial controller Install signal actuation Re-time signals Provide progression through a set of signalized intersections
Left-turn collisions at intersections	Large volume of left turns	Provide left turn signal phase Prohibit left turns Reroute left turn traffic Channelize intersections Install stop signs [see MUTCD] Create one-way streets
	Restricted sight distance	Remove obstacles Install warning signs Reduce speed limit on approaches*
Fixed-object collisions	Object near traveled way	Remove obstacles near roadway Install barrier curbing Install breakaway feature to light poles, sign posts, etc. Project objects with guardrails
	Pedestrian crossings	Install/improve signing or markings of pedestrian crosswalks Provide pedestrian "WALK" phase
	Slipper surface	Overlay pavement Provide adequate drainage Groove pavement Reduce speed limit on approaches* Provide "SLIPPERY WHEN WET" signs
	Unwarranted signals	Remove signals [see MUTCD]
	Large turning volumes	Create left- or right-turn lanes Prohibit turns Increase curb radii
Night collisions	Poor visibility	Install/improve street lighting Install/improve delineation markings Install/improve warning signs
Wet pavement collisions	Slippery pavement	Overlay with skid-resistant surface Provide adequate drainage Groove existing pavement Reduce speed limit* Provide "SLIPPERY WHEN WET" signs

*Spot speed study should be conducted to justify speed limit reduction

Per Capita Collision Comparisons

The following data has been included to compare collision trends between 2013 and 2015 to those occurring between 2015 and 2017. The number of collisions per 1,000 people in Iowa City was compared to that of similar sized cities in Iowa.

Between 2013 and 2017, the City of North Liberty had the fewest number of collisions per 1,000 people followed by the City of Cedar Rapids. Iowa City had the fifth lowest number of collisions per 1,000 people as compared to eleven other communities, whereas Davenport had the highest number of collisions.



As shown in **Table 10**, the City of Iowa City averaged 57.3 collisions per 1,000 people from 2015-2017 and 57.1 collisions per 1,000 people from 2013-

2015. While Iowa City's population and total number of collisions increased between these time frames, the per capita collision rate only increased marginally (0.2). As compared to the other communities, Iowa City has one of the lowest numbers of collisions per capita. Of the communities analyzed, the cities of Des Moines and Davenport had the highest rates of collisions per 1,000 persons.

Table 10: Per Capita Collision Comparisons 2013-2017

City	Collisions occurring between 2015-2017			Collisions occurring between 2013-2015		
	Population (2016)	2015-2017 Collisions	Collisions per 1,000 persons	Population (2010)	2013-2015 Collisions	Collisions per 1,000 persons
North Liberty	16,984	330	19.4	13,374	271	20.3
Cedar Rapids	129,537	6,236	48.1	126,326	5,799	45.9
Ames	64,073	3,239	50.6	58,965	3,124	53.0
Ankeny	53,413	3,000	56.2	45,582	2,574	56.5
Iowa City	72,385	4,149	57.3	67,862	3,875	57.1
West Des Moines	61,624	3,655	59.3	56,609	3,428	60.6
Waterloo	68,357	4,091	59.8	68,406	4,369	63.9
Sioux City	82,666	6,100	73.8	82,684	5,687	68.8
Council Bluffs	62,326	4,615	74.0	62,230	4,509	72.5
Coralville	20,078	1,624	80.9	18,907	1,516	80.2
Des Moines	212,859	17,296	81.2	203,433	15,367	75.5
Davenport	102,305	9,244	90.3	99,685	8,556	85.8

Source: 2016 ACS 5-Year Population Estimate and Iowa DOT Crash Analysis Tool

Appendix: Complete Intersection Ranking

ID	Road 1	Road 2	Collisions	Collision Points	Crash Rate	Crash Rate Points	Severity	Severity Points	Combined Score	Rank
1	Sycamore St.	Hwy 6	41	15	1.44	6	53	14	12.25	1
2	S Gilbert St.	Hwy 6	46	15	1.03	5	54	14	12.00	2
3	Boyrum St.	Hwy 6	33	15	0.79	4	41	11	10.25	3
4	Melrose Ave.	Mormon Trek Blvd.	29	15	0.93	4	39	10	9.75	4
5	Riverside Dr.	W Burlington St. / Grand Ave.	36	15	0.72	3	38	10	9.50	5
6	E Burlington St.	S Gilbert St.	32	15	0.99	4	34	9	9.25	6
7	S Riverside Dr.	W Benton St.	32	15	0.82	4	36	9	9.25	6
8	Hwy 1	Hwy 6	28	14	0.61	3	34	9	8.75	8
9	Hwy 1	Mormon Trek Blvd.	32	15	0.90	4	32	8	8.75	8
10	Madison St.	W Burlington St.	32	15	0.94	4	32	8	8.75	8
11	S 1st Ave.	Hwy 6	25	13	0.87	4	31	8	8.25	11
12	Hwy 1	Sunset St.	25	13	0.78	4	27	7	7.75	12
13	Hawkins Dr.	Hwy 6	23	12	0.45	2	27	7	7.00	13
14	Keokuk St.	Hwy 6	21	11	0.59	3	25	7	7.00	13
15	Church St.	N Dubuque St.	20	10	1.02	5	22	6	6.75	15
16	Iowa Ave.	Van Buren St.	11	6	2.27	10	17	5	6.50	16
17	McCullister Blvd.	S Gilbert St.	17	9	1.39	6	19	5	6.25	17
18	Dodge St.	E Burlington St.	20	10	0.92	4	20	5	6.00	18
19	Fair Meadows Blvd.	Hwy 6	17	9	0.85	4	19	5	5.75	19
20	E Burlington St.	S Clinton St.	20	10	0.52	3	20	5	5.75	19
21	Heinz Rd.	Hwy 6	14	7	1.05	5	18	5	5.50	21
22	Hwy 1	Orchard St.	18	9	0.71	3	20	5	5.50	21
23	Hwy 1	Ruppert Rd.	15	8	0.51	3	19	5	5.25	23
24	Myrtle Ave.	S Riverside Dr.	16	8	0.55	3	18	5	5.25	23
25	Industrial Park Rd.	Hwy 6	14	7	0.72	3	20	5	5.00	25
26	Dickenson Ln.	Russell Dr.	5	3	22.60	15	5	1	5.00	25
27	Broadway St.	Hwy 6	15	8	0.60	3	15	4	4.75	27
28	Dodge St.	Iowa Ave.	12	6	1.08	5	14	4	4.75	27
29	Gilbert Ct.	Kirkwood Ave.	11	6	1.06	5	13	4	4.75	27
30	Governor St.	Iowa Ave.	12	6	1.38	6	12	3	4.50	30
31	Camp Cardinal Blvd.	Melrose Ave.	14	7	0.59	3	14	4	4.50	30
32	Cae Dr.	Rohret Rd.	12	6	0.80	4	14	4	4.50	30
33	E Burlington St.	S Dubuque St.	14	7	0.57	3	16	4	4.50	30
34	Iowa Ave.	S Riverside Dr.	16	8	0.45	2	16	4	4.50	30
35	S Gilbert St.	Stevens Dr.	9	5	1.21	5	13	4	4.50	30
36	E Jefferson St.	N Gilbert St.	12	6	0.69	3	14	4	4.25	36
37	N Dubuque St.	Park Rd.	14	7	0.47	2	16	4	4.25	36
38	E Court St.	S 1st Ave.	12	6	0.51	3	14	4	4.25	36
39	Kirkwood Ave.	S Gilbert St.	13	7	0.48	2	13	4	4.25	36
40	Valley Ave.	Hwy 6	11	6	0.50	2	13	4	4.00	40
41	E Market St.	N Linn St.	10	5	1.01	5	10	3	4.00	40

ID	Road 1	Road 2	Collisions	Collision Points	Crash Rate	Crash Rate Points	Severity	Severity Points	Combined Score	Rank
42	N Scott Blvd.	Rochester Ave.	12	6	0.83	4	12	3	4.00	40
43	Muscatine Ave.	S 1st Ave.	11	6	0.36	2	13	4	4.00	40
44	Muscatine Ave.	S 7th Ave.	10	5	1.06	5	10	3	4.00	40
45	E Burlington St.	S Capitol St.	12	6	0.40	2	14	4	4.00	40
46	Bowery St.	Dodge St.	9	5	0.84	4	9	3	3.75	46
47	E Market St.	Johnson St.	8	4	1.16	5	12	3	3.75	46
48	Muscatine Ave.	S Scott Blvd.	9	5	0.77	4	9	3	3.75	46
49	S Gilbert St.	Southgate Ave.	9	5	0.77	4	9	3	3.75	46
50	E Burlington St.	Governor St.	10	5	0.53	3	12	3	3.50	50
51	Taylor Dr.	Hwy 6	8	4	0.34	2	14	4	3.50	50
52	Cameron Way	Mormon Trek Blvd.	10	5	0.62	3	10	3	3.50	50
53	E Market St.	N Dubuque St.	11	6	0.49	2	11	3	3.50	50
54	N Dodge St.	N Scott Blvd.	12	6	0.37	2	12	3	3.50	50
55	Lower Muscatine Rd.	S 1st Ave.	10	5	0.60	3	10	3	3.50	50
56	Greenwood Dr.	W Benton St.	10	5	0.72	3	12	3	3.50	50
57	Mormon Trek Blvd.	W Benton St.	9	5	0.51	3	11	3	3.50	50
58	Mormon Trek Blvd.	Westwinds Dr.	10	5	0.61	3	10	3	3.50	50
59	E College St.	Lucas St.	5	3	1.77	8	5	1	3.25	59
60	E Market St.	N Gilbert St.	7	4	0.61	3	11	3	3.25	59
61	Lower West Branch Rd.	N Scott Blvd.	7	4	0.67	3	11	3	3.25	59
62	N Dodge St.	Northgate Dr.	7	4	0.61	3	11	3	3.25	59
63	E Prentiss St.	S Dubuque St.	6	3	1.34	6	6	2	3.25	59
64	E College St.	S Gilbert St.	8	4	0.53	3	10	3	3.25	59
65	E Court St.	S Scott Blvd.	8	4	0.58	3	10	3	3.25	59
66	N Riverside Dr.	Hwy 6	9	5	0.19	1	11	3	3.00	66
67	E Burlington St.	Lucas St.	7	4	0.48	2	9	3	3.00	66
68	Hawkeye Park Rd.	Melrose Ave.	7	4	0.47	2	9	3	3.00	66
69	Bartlett Rd.	Mormon Trek Blvd.	7	4	0.44	2	9	3	3.00	66
70	Bradford St.	S 1st Ave.	7	4	0.47	2	9	3	3.00	66
71	E Court St.	S Gilbert St.	7	4	0.35	2	9	3	3.00	66
72	Iowa Ave.	S Gilbert St.	8	4	0.49	2	10	3	3.00	66
73	Dodge St.	E Washington St.	7	4	0.68	3	7	2	2.75	73
74	E Jefferson St.	Governor St.	8	4	0.74	3	8	2	2.75	73
75	Melrose Ct.	Melrose Ave.	7	4	0.55	3	7	2	2.75	73
76	Old Highway 218	Ruppert Rd.	5	3	0.30	2	9	3	2.75	73
77	Kirkwood Ave.	Summit St.	8	4	0.52	3	8	2	2.75	73
78	Church St.	Dodge St.	6	3	0.53	3	6	2	2.5	78
79	Hudson Ave.	Hwy 1	7	4	0.28	2	7	2	2.50	78
80	Newton Rd.	Hwy 6	7	4	0.32	2	7	2	2.50	78
81	Bowery St.	Johnson St.	6	3	0.69	3	6	2	2.50	78
82	Iowa Ave.	Lucas St.	4	2	1.29	6	4	1	2.50	78
83	Lower Muscatine Rd.	Mall Dr.	6	3	0.58	3	6	2	2.50	78
84	E Court St.	Muscatine Ave.	7	4	0.47	2	7	2	2.50	78

ID	Road 1	Road 2	Collisions	Collision Points	Crash Rate	Crash Rate Points	Severity	Severity Points	Combined Score	Rank
85	Kimball Ave.	Prairie du Chien Rd.	4	2	0.96	4	6	2	2.50	78
86	Bowery St.	S Gilbert St.	7	4	0.30	2	7	2	2.50	78
87	E Benton St.	S Gilbert St.	7	4	0.43	2	7	2	2.50	78
88	E Washington St.	S Gilbert St.	7	4	0.40	2	7	2	2.50	78
89	N Dubuque St.	SW Ramp Curve	7	4	0.27	2	7	2	2.50	78
90	Capitol St.	W Benton St.	7	4	0.36	2	7	2	2.50	78
91	Dodge St.	E Jefferson St.	6	3	0.48	2	8	2	2.25	91
92	E Burlington St.	Johnson St.	6	3	0.32	2	8	2	2.25	91
93	Dublin Dr.	Melrose Ave.	5	3	0.34	2	7	2	2.25	91
94	E Market St.	N Clinton St.	6	3	0.38	2	6	2	2.25	91
95	B'Jaysville Ln. / Foster Rd.	N Dubuque St.	7	4	0.23	1	7	2	2.25	91
96	E Davenport St.	N Gilbert St.	4	2	1.10	5	4	1	2.25	91
97	N 1st. Ave.	Rochester Ave.	6	3	0.44	2	8	2	2.25	91
98	Friendship St.	S 1st. Ave.	6	3	0.33	2	6	2	2.25	91
99	E Washington St.	S Clinton St.	6	3	0.42	2	6	2	2.25	91
100	Liberty Dr.	S Scott Blvd.	4	2	0.71	3	6	2	2.25	91
101	E Burlington St.	Van Buren St.	6	3	0.34	2	6	2	2.25	91
102	Sturgis Corner Dr.	Hwy 6	6	3	0.18	1	6	2	2.00	102
103	Dodge St.	Market St.	4	2	0.30	2	6	2	2.00	102
104	E Court St.	S 7th Ave.	5	3	0.54	3	5	1	2.00	102
105	E Burlington St.	S Linn St.	5	3	0.22	1	7	2	2.00	102
106	E Burlington St.	Summit St.	4	2	0.29	2	6	2	2.00	102
107	Lower Muscatine Rd.	Sycamore St.	5	3	0.52	3	5	1	2.00	102
108	E Washington St.	Johnson St.	4	2	0.69	3	4	1	1.75	108
109	Iowa Ave.	Johnson St.	4	2	0.67	3	4	1	1.75	108
110	Abbey Ln.	Mormon Trek Blvd.	5	3	0.41	2	5	1	1.75	108
111	Dodge St.	Prairie Du Chien Rd.	5	3	0.33	2	5	1	1.75	108
112	N Dubuque St.	Ronald St.	5	3	0.31	2	5	1	1.75	108
113	Mall Dr.	S 1st Ave.	5	3	0.30	2	5	1	1.75	108
114	Keokuk St.	Southgate Ave.	5	3	0.46	2	5	1	1.75	108
115	E Jefferson St.	Van Buren St.	4	2	0.65	3	4	1	1.75	108
116	Miller Ave.	W Benton St.	5	3	0.41	2	5	1	1.75	108
117	1st Ave	Wayne St.	5	3	0.32	2	5	1	1.75	108
118	E Bloomington St.	Governor St.	4	2	0.48	2	4	1	1.50	118
119	Miller Ave.	Hwy 1	5	3	0.19	1	5	1	1.50	118
120	S Scott Blvd.	Hwy 6	4	2	0.29	2	4	1	1.50	118
121	Brown St.	N Dubuque St.	5	3	0.14	1	5	1	1.50	118
122	Church St.	N Gilbert St.	3	1	0.52	3	3	1	1.50	118
123	E Jefferson St.	N Linn St.	4	2	0.47	2	4	1	1.50	118
124	Hospital Loop Dr.	Stadium Dr.	4	2	0.48	2	4	1	1.50	118
125	S Riverside Dr.	Sturgis Corner Dr.	5	3	0.19	1	5	1	1.50	118
126	Sunset St.	W Benton St.	4	2	0.30	2	4	1	1.50	118
127	Mormon Trek Blvd.	Westside Dr.	4	2	0.30	2	4	1	1.50	118

ID	Road 1	Road 2	Collisions	Collision Points	Crash Rate	Crash Rate Points	Severity	Severity Points	Combined Score	Rank
128	Melrose Ave.	Westwinds Dr.	4	2	0.25	2	4	1	1.50	118
129	S Scott Blvd.	Wintergreen Dr.	4	2	0.46	2	4	1	1.50	118
130	Dodge St.	E Bloomington St.	3	1	0.30	2	3	1	1.25	130
131	Dodge St.	E College St.	3	1	0.28	2	3	1	1.25	130
132	2nd Ave.	E Court St.	3	1	0.36	2	3	1	1.25	130
133	4th Ave.	E Court St.	3	1	0.36	2	3	1	1.25	130
134	E College St.	Governor St.	3	1	0.34	2	3	1	1.25	130
135	Boyrum St.	Hollywood Blvd.	4	2	0.09	1	4	1	1.25	130
136	Maiden Ln.	Kirkwood Ave.	3	1	0.29	2	3	1	1.25	130
137	Governor St.	Market St.	3	1	0.25	2	5	1	1.25	130
138	Emerald St.	Melrose Ave.	4	2	0.21	1	4	1	1.25	130
139	E Burlington St.	Muscatine Ave.	4	2	0.24	1	4	1	1.25	130
140	I-80 WB Ramp	N Dodge St.	4	2	0.18	1	4	1	1.25	140
141	Fairchild St.	N Dubuque St.	4	2	0.25	1	4	1	1.25	140
142	N Riverside Dr.	River St.	3	1	0.35	2	3	1	1.25	140
143	E Benton St.	S Clinton St.	4	2	0.21	1	4	1	1.25	140
144	E Prentiss St.	S Clinton St.	3	1	0.47	2	3	1	1.25	140
145	Highland Ave.	S Gilbert St.	4	2	0.09	1	4	1	1.25	140
146	E Washington St.	S Linn St.	3	1	0.31	2	3	1	1.25	140
147	E Court St.	Summit St.	3	1	0.31	2	3	1	1.25	140
148	Burns Ave.	Sycamore St.	3	1	0.48	2	3	1	1.25	140
149	Bowery St.	Van Buren St.	3	1	0.34	2	3	1	1.25	140
150	S Capitol St.	W Prentiss St.	3	1	0.45	2	3	1	1.25	140
151	N Scott Blvd.	Washington St.	3	1	0.27	2	3	1	1.25	140
152	S 1st Ave.	Washington St.	3	1	0.29	2	3	1	1.25	140
153	W Benton St.	Westgate St.	3	1	0.35	2	5	1	1.25	140
154	Hwy 1	Westport Plaza	4	2	0.16	1	4	1	1.25	140
155	Grand Ave. Ct.	Grand Ave.	3	1	0.11	1	3	1	1.00	155
156	Keokuk St.	Kirkwood Ave.	3	1	0.21	1	3	1	1.00	155
157	Lucas St.	Kirkwood Ave.	3	1	0.21	1	3	1	1.00	155
158	Galway Dr.	Melrose Ave.	3	1	0.18	1	3	1	1.00	155
159	Kennedy Pkwy	Melrose Ave.	3	1	0.18	1	3	1	1.00	155
160	E Jefferson St.	N Clinton St.	3	1	0.23	1	3	1	1.00	155
161	E Bloomington St.	N Dubuque St.	3	1	0.17	1	3	1	1.00	155
162	E Davenport St.	N Dubuque St.	3	1	0.18	1	3	1	1.00	155
163	E Jefferson St.	N Dubuque St.	3	1	0.25	1	5	1	1.00	155
164	Hickory Heights Ln.	N Scott Blvd.	3	1	0.21	1	3	1	1.00	155
165	N 1st Ave.	N Scott Blvd.	3	1	0.17	1	3	1	1.00	155
166	Hwy 1	Naples Ave.	3	1	0.24	1	5	1	1.00	155
167	McCullister Blvd.	Old Highway 218	3	1	0.21	1	3	1	1.00	155
168	Grand Ave.	S Grand Ave.	3	1	0.15	1	3	1	1.00	155
169	N Dubuque St.	Taft Speedway	3	1	0.12	1	3	1	1.00	155
170	Orchard St.	W Benton St.	3	1	0.25	1	3	1	1.00	155
171	Melrose Ave.	Westgate St.	3	1	0.16	1	3	1	1.00	155

Appendix: Complete Mid-Block Ranking

ID	Street	Node 1	Node 2	Collisions	Collision Points	Crash Rate	Crash Rate Points	Severity	Severity Points	Combined Score	Mid-block Rank
1	Hwy 1	Sunset St.	Mormon Trek Blvd.	32	15	3.39	14	34	9	11.75	1
2	N Dubuque St.	Taft Speedway	Kimball Rd.	31	14	3.25	15	35	9	11.50	2
3	N Dodge St.	I-80 EB Ramp	Scott Blvd.	25	13	3.44	14	29	8	10.75	3
4	Hwy 6	Valley Ave.	N Riverside Dr	25	13	2.11	9	31	8	9.50	4
5	Hwy 6	S Gilbert St.	Boyrum St.	18	9	3.59	15	20	5	8.50	5
6	N Dubuque St.	I-80 WB Ramp	I-80 EB Ramp	13	7	5.14	15	24	6	8.25	6
7	Hwy 1	Hudson Ave. / Shirken Dr.	Orchard St.	9	5	4.36	15	20	5	7.50	7
8	N Dubuque St.	I-80 EB Ramp	Meadow Ridge Ln.	17	9	2.49	10	17	5	7.25	8
9	Newton Rd.	Woolf Ave.	S Riverside Dr.	11	6	3.27	14	13	4	7.00	9
10	Hwy 6 W	Newton Rd.	Valley Ave.	11	6	5.04	15	11	3	6.75	10
11	S Clinton St.	Washington St.	Burlington St.	10	5	12.85	15	10	3	6.50	11
12	S Capitol St.	Washington St.	Burlington St.	10	5	85.52	15	10	3	6.50	11
13	Melrose Ave.	Westwinds Dr.	Mormon Trek Blvd.	7	4	4.13	15	7	2	5.75	13
14	Hwy 6	S Riverside Dr.	Sturgis Corner Dr.	8	4	8.23	15	8	2	5.75	13
15	Mall Dr.	Lower Muscatine Rd.	S 1st Ave.	5	3	7.61	15	5	2	5.50	15
16	Iowa Ave.	S Riverside Dr.	Madison St.	5	3	4.06	15	5	2	5.50	15
17	Governor St.	Burlington St.	Bowery St.	6	3	12.08	15	6	2	5.50	15
18	Van Buren St.	Burlington St.	Bowery St.	6	3	24.16	15	6	2	5.50	15
19	Dodge St.	Governor St.	Brown St.	6	3	3.57	15	8	2	5.50	15
20	Johnson St.	Court St.	Bowery St.	6	3	30.23	15	8	2	5.50	15
21	Hudson Ave.	Benton St.	Hwy 1	5	3	182.97	15	5	2	5.50	15
22	S 1st Ave.	J St. / Bradford Dr.	Mall Dr.	5	3	4.43	15	7	2	5.50	15
23	W Benton St.	Greenwood Dr.	Miller Ave.	5	3	4.11	15	5	2	5.50	15
24	Hwy 6	Lakeside Dr.	Heinz Rd.	10	5	2.03	9	16	4	5.50	15
25	Burlington St.	S Riverside Dr.	Madison St.	10	5	2.50	10	12	3	5.25	25
26	Madison St.	Washington St.	Burlington St.	4	2	8.92	15	8	2	5.25	25
27	Westwinds Dr.	Roberts Rd.	Mormon Trek Blvd.	4	2	14.30	15	6	2	5.25	25
28	Melrose Ave.	Dublin Dr.	Hawkeye Park Rd.	4	2	5.25	15	8	2	5.25	25
29	Hwy 1	Westport Plaza	Ruppert Rd.	11	6	1.98	8	11	3	5.00	29
30	S 1st Ave.	Mall Dr.	Lower Muscatine Rd.	7	4	2.47	10	9	3	5.00	29
31	W Benton St.	Oaknoll Dr.	Greenwood Dr.	4	2	15.11	15	4	1	4.75	31
32	Hwy 6	Hawkins Dr.	Newton Rd.	4	2	9.50	15	4	1	4.75	31
33	S Riverside Dr.	Benton St.	Sturgis Corner Dr.	4	2	10.10	15	4	1	4.75	31

ID	Street	Node 1	Node 2	Collisions	Collision Points	Crash Rate	Crash Rate Points	Severity	Severity Points	Combined Score	Mid-block Rank
34	Hawkins Dr.	Finkbine Commuter Dr.	Elliot Dr.	5	3	2.99	12	7	2	4.75	31
35	Emerald St.	Melrose Ave.	Benton St.	3	1	6.87	15	3	1	4.50	35
36	Primrose Ct.	Whispering Meadow Dr.	Cul de Sac	3	1	159.59	15	3	1	4.50	35
37	Williams St.	Muscatine Ave.	Wayne Ave.	3	1	83.56	15	3	1	4.50	35
38	Duck Creek Dr.	Deerfield Dr.	Rohret Rd.	3	1	15.57	15	3	1	4.50	35
39	Taylor Dr.	Tracy Ln.	Sandusky Dr.	3	1	14.60	15	3	1	4.50	35
40	Gilbert St.	Benton St.	Kirkwood Ave.	3	1	4.79	15	3	1	4.50	45
41	S Scott Blvd.	American Legion Rd.	Hampton St.	3	1	5.56	15	3	1	4.50	45
42	Benton St.	S Riverside Dr.	Capitol St.	6	3	2.73	11	8	2	4.50	45
43	S Riverside Dr.	Burlington St.	Myrtle Ave.	10	5	1.61	7	10	3	4.50	45
44	S 1st Ave.	D St.	F St.	4	2	3.20	13	4	1	4.25	44
45	Hwy 6	Heinz Rd.	Scott Blvd. SE	8	4	2.10	9	8	2	4.25	44
46	Melrose Ave.	Camp Cardinal Blvd.	Kennedy Pkwy.	7	4	2.21	9	7	2	4.25	44
47	Melrose Ave	Finkbine Ln.	MacBride Rd.	5	3	3.20	13	7	2	4.10	47
48	N Dodge St.	I-80 WB Ramp	I-80 EB Ramp	6	3	1.94	8	6	2	3.75	48
49	Melrose Ave.	Hawkeye Park Rd.	Westwinds Dr.	6	3	1.81	8	8	2	3.75	48
50	Park Rd.	N Riverside Dr.	Dubuque St.	4	2	2.39	10	4	1	3.50	50
51	N Riverside Dr.	River St.	Hwy 6	3	1	2.63	11	3	1	3.50	50
52	Old Hwy 218	Ruppert Rd.	Imperial Ct.	5	3	1.20	5	9	3	3.50	50
53	S Riverside Dr.	Iowa Ave.	Burlington Dr.	5	3	1.27	6	5	2	3.25	53
54	Hwy 6	Sturgis Corner Dr.	Gilbert St.	8	4	1.06	5	8	2	3.25	53
55	Hwy 1	Ruppert Rd.	Miller Ave.	4	2	1.60	7	6	2	3.25	53
56	Hwy 6	Boyrum St.	Keokuk St.	5	3	1.36	6	5	2	3.25	53
57	Hwy 6	Keokuk St.	Broadway St.	5	3	1.31	6	5	2	3.25	53
58	S Riverside Dr.	Myrtle Ave.	Benton St.	7	4	1.07	5	7	2	3.25	53
59	Hwy 1	Sunset St.	Westport Plaza	5	3	0.94	4	5	2	2.75	59
60	Old Hwy 218	Hwy 1	Ruppert Rd.	3	1	1.58	7	3	1	2.50	60
61	N Dubuque St.	Foster Rd.	Taft Speedway St.	3	1	1.39	6	3	1	2.25	61
62	Mormon Trek Blvd.	1st St.	Hawkeye Park Rd.	4	2	0.69	3	6	2	2.25	61
63	N Dodge St.	Northgate Dr.	I-80 WB Ramp	3	1	0.78	4	3	1	1.75	63
64	Scott Blvd.	N 1st Ave.	Rochester Ave.	3	1	0.39	2	3	1	1.25	64