TOOLE DESIGN

CRASH ANALYSIS REPORT

CITY OF DUNWOODY
ROAD SAFETY ACTION PLAN

August 18, 2023

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List of Abbreviations & Key Terms

DUI	Driving Under the Influence
HIN	High Injury Network
AADT	Annual Average Daily Traffic
KABCO	Injury Severity Scale: **K:** Fatal **A:** Incapacitating **B:** Non-Incapacitating **C**: Not visible but complains of pain **O:** Uninjured or Property Damage Only
KSI	Killed or serious injury (K and A on KABCO scale)
KSI Rate	The % of crashes that resulted in KSI or, KSI Crashes / Total Number of
Vulnerable Roadway User	Pedestrian, Bicyclists, and Motorcyclist
FHWA	Federal Highway Administration

Crash Analysis Methodology

Descriptive Crash Analysis

As a first step toward understanding the safety performance of a roadway network, it is important to perform a high-level descriptive crash analysis of the study area. This involves collecting and consolidating multiple years of historical crash data, summarizing and visualizing it to identify notable patterns and valuable insights that may help guide future analyses and planning efforts.

In support of the City of Dunwoody Road Safety Action Plan, Toole Design performed a comprehensive descriptive crash analysis which is summarized in the following sections of this document. The analysis, conducted for the City of Dunwoody, includes the study period of 2017-2021 and utilizes crash data downloaded from GDOT Numetric Crash Query application.[1]

The descriptive analysis was conducted for the full study area based on the provided data. The data was consolidated, processed, and contextualized before being used to perform the analysis. A series of high-level descriptive summaries, tables, and figures capture the relationships between crash data, infrastructure data, and contextual variables. These tables explore overall crash trends and patterns that can be used to guide future analyses, the development of new or revised agency policies, or the selection of countermeasures for project development.

Crash Analysis Data Sources

Table 1: Data Sources and Consolidated Data

Data Set	Data Source
Crash Data	GDOT Numetric Crash Query application
AADT	GDOT Numetric Crash Query application
Land Use	Open Data Dunwoody
Parks	City Provided Data
Transit routes/stops	City Provided Data
Schools	GDOT Numetric Crash Query application
Posted Speed Limit	City Provided Data
Street Centerline	City Provided Data
Intersections	Toole Design derived from Street Centerline
Roadway Ownership	City Provided Data
Roadway Context ▪ Functional road classification ▪ Number of travel lanes ▪ Intersection control devices	City Provided Data

[1] https://gdot.aashtowaresafety.com/crash-query#/metrics

Overview of State Crash Report Form and Guidance

Georgia Crash Report uses Form DOT-523 to document and report crash incidents.[2] The Georgia Uniform Vehicle Accident Report Instruction Guide provides detailed guidelines on the types of information to be recorded in the form.

Geocoding Crash Data

Geocoded crash data are critical to understanding collision patterns. Crash reports completed by the police are the primary source for crash data. While this data only captures crashes reported to authorities, it is often the most complete data source and provides most of the details of a crash, such as the location of the collision and dynamics between the primary parties involved in the crash. [3] Crashes downloaded from GDOT are already geocoded.

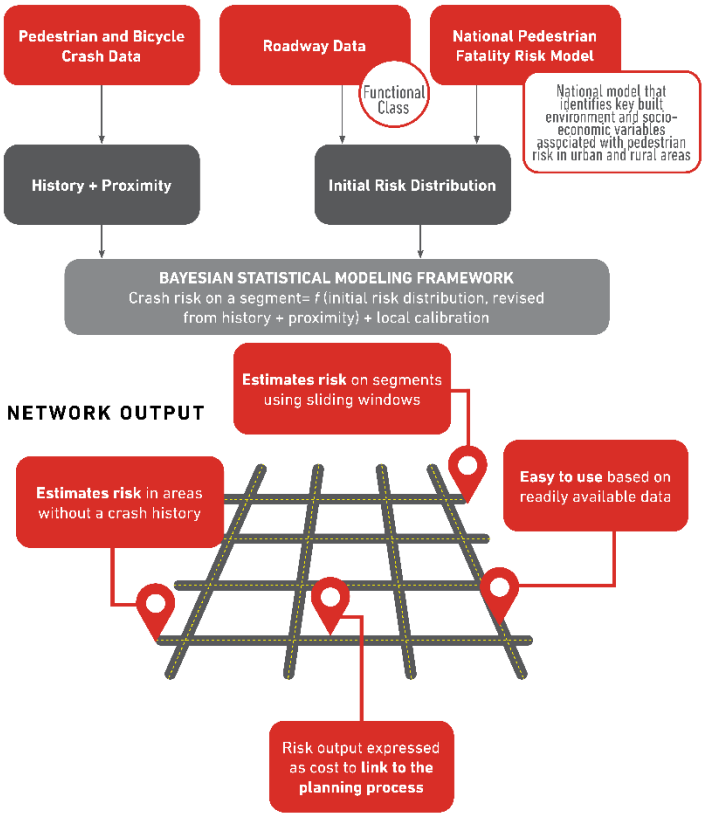
[2] https://one.nhtsa.gov/nhtsa/stateCatalog/states/ga/georgia.html

[3] Stutts, J., & Hunter, W. (1998). Police reporting of pedestrians and bicyclists treated in hospital emergency rooms. Transportation Research Record: Journal of the Transportation Research Board, (1635), 88-92.

Safer Streets Priority Finder (SSPF) Tool Background

Toole Design, in collaboration with the City of New Orleans, University of New Orleans Transportation Institute, and New Orleans Regional Transit Authority developed the Safer Streets Priority Finder Tool[4] (i.e., SSPF Tool). The SSPF Tool is a free, interactive, open-source resource available at the national scale that can help transportation practitioners identify a street network that is similar to a High Injury Network for bicyclists and pedestrians. The tool goes further than a typical High Injury Network by not only taking into consideration areas where a disproportionate share of fatal and serious injury crashes has already occurred, but also areas that have factors present that are likely to contribute to future risk.

Figure 1: Safer Streets Priority Tool Methodology. Source: Toole Design Group.



The SSPF produces two main outputs:

1. Sliding Windows Analysis (all modes) (typically how High Injury Networks are defined)
2. Safer Street Model: Estimated Future Societal Costs (bicycle and pedestrian crashes only)

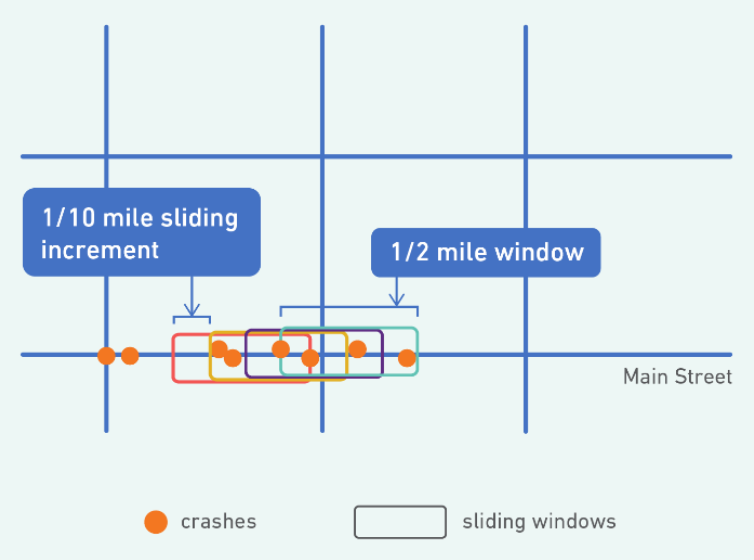
The following sections will provide high level summaries for each analytical methodology and the results from each analysis. For more detailed information on the methodologies for each analysis, please see SSPF Technical Report and/or https://www.saferstreetspriorityfinder.com/.

[4] https://www.saferstreetspriorityfinder.com/tool/

Sliding Window Analysis Methodology

A sliding window analysis helps us understand crashes throughout a transportation network and identify segments with the highest crash density and weighted by crash severity. For Dunwoody, the analysis is done by determining the number and severity of crashes in a **half-mile window** on a roadway and shifting that virtual "window" along the roadway **1/10 of a mile** at a time, counting the number of crashes by severity and mode that occurred within each successive half-mile segment. An example of a sliding window analysis is shown below.

Figure 2: Example of the Sliding Window Analysis. Source: Toole Design Group



The sliding window scores weight the most severe crashes more heavily than lower severity crashes. The Sliding Windows score is calculated by multiplying the number of Fatal (K) and Serious/Suspected Serious Injury (A) crashes by 9, multiplying the number of Suspected Minor Injury (B), Possible Injury (C) by 3, and No Injury (O) crashes by 1. This ratio allows for inclusion of less severe crashes in the analysis while still focusing on corridors with more severe crashes. For instance, with KSI crashes weighted at three times moderate injury crashes, a corridor with two KSI crashes will have the same weighted total as a corridor with six moderate injury crashes. Moderate injury crashes were included in this analysis to augment the relatively small dataset of KSI crashes and in response to research that has found a significant percentage of pedestrian and bicyclist injuries to be underreported and/or misclassified between injury levels.

Once the weights are established and applied to the crashes, the total number of crashes is aggregated along a corridor while incorporating the crash severity weighting. Each segment is scored and those scored results are found in the attached sliding window maps for pedestrian, bicyclists, motorcyclists, and motor vehicles accordingly.

Safer Streets Model

The Safer Streets Model brings the segmented road network window segments (produced in the Sliding Windows Analysis) into a Bayesian statistical framework to estimate crash risk throughout the system. This framework calculates expected crashes by incorporating external information about number of predicted crashes (called a Bayesian prior), alongside the observed crash history.

The model estimates crash risk rates per mile for each road segment and each crash mode (pedestrian and bicyclist only) and severity. These values are then converted to crash cost estimates based on the costs assigned to each crash severity.

Given enough data points, the Safer Streets Model is only available to model bicycle and pedestrian crashes. The model cannot estimate or model future motor vehicle or motorcycle crashes at this time.

Key Output: corridors with highest potential risk for bicycle and pedestrian crashes to occur in the future using both historical crash data and a statistical model based on roadway functional classification.

Study Limitations

- Comprehensive network-level vehicle, pedestrian, and bicycle volumes were not available at the time of the analysis; the crash data included intersection AADT for some of the crashes, which are included in tables below.
- Roadway ownership attributes were provided by the City. Peachtree Industrial Boulevard access roads, Cotillion Drive, and freeway ramps were state owned.
- Crashes on Interstate 285 and the SR 141/Peachtree Industrial Boulevard mainline were excluded from this analysis.
- For each crash record, person-, unit-, and vehicle-level data were combined to the crash-level. For non-vehicular modes, the project team was unable to match direction of travel, movement/location before crash to the respective units involved in crash.
- Additional datasets could be analyzed to help identify or refine crash risk factors:
    - Crosswalk style
    - Street width
    - Traffic signal phasing
    - Transit frequency and boarding/alighting counts
    - Location of fixed objects (raised medians, barriers, utility poles, etc.)
    - Marked crosswalks and crosswalk enhancements
    - Bike facilities (with installation dates)
    - Sidewalks
    - Bicycle, pedestrian, motorcycle exposure data

  Installation dates for the roadway infrastructure is important to understand crash frequencies and crash rates more accurately at locations with existing safety countermeasures.
- Crash data from GDOT has limited demographic information on the users involved in crashes. This limits the ability to understand the equity implication of crashes since crash reports do not capture users' demographics beyond age.

Crash Trends

Summary of Key Findings

- **Year of crash data**: 2017-2021
- **Total crashes**: 5,451
- **Total fatal (K) crashes**: 5
- **Total serious injury (A) crashes**: 40
- **Crashes along limited access freeways:** I-285 and the SR 141/Peachtree Industrial Boulevard mainline were excluded from this analysis.
- **Crashes by year:** 2020 and 2021 see a decrease in overall number of crashes but an increase in KSI crashes.
- **Crashes by mode:** 98% of crashes are vehicle-to-vehicle crashes.
- **Injury severity by mode:**
    - 22 bicycle crashes did not result in any KSI cases.
    - 56 pedestrian-involved crashes resulted in 6 KSI cases.
    - 25 motorcycle-involved crashes resulted in 3 KSI cases.
    - 5,348 vehicle-only crashes resulted in 36 KSI cases.
- **Crash type:** 45% of all crashes are rear end crashes, although the resulted injury levels are usually not as severe. Left angle crashes (22%) and crashes involving vulnerable road users (31%) take up more than half of KSI crashes. Head-on crashes are more likely to result in KSI, when comparing to other crash types, with 3.5% of head-on crashes resulting in KSI.
- **Crash location**: 86% of all crashes are within 150 feet of intersections. Though midblock crashes only make up 14% of total crashes, they account for 29% of all KSI crashes.
- **Intersection control type**: Among the 4,702 intersection crashes, 71% happened at signalized locations, 26% at two-way stop-controlled locations, and the remaining 3% at all-way stop controlled locations.[5]
- **Posted speed limit:** crashes on roads with 35 mph speed limit and above account for 94% of all crashes, and 96% of KSI crashes.
- **Functional class:** Crashes on collector streets are more likely to result in fatality or severe injury. Arterials and interstate ramp have more frequent overall crashes and KSI crashes.
- **Number of lanes**: 2-lane roadways see 37% of all crashes and 36% of KSI crashes.
- Some **behavioral factors** that contributed to crashes include:

[5] Intersections within 100 feet of signal locations provided by the City are considered signalized intersections, intersections where local streets intersect are assumed to be all-way stop intersections, and the remainder intersections are considered to be two-way stop controlled.

    - Following too closely account for 38% of all crashes, which corresponds with high shares of rear end crashes.
    - Failure to yield contributed to 31% of all KSI crashes.
    - Driver losing control and improper turning are more likely to result in KSI crashes than other behavioral causes.
- **Behavioral violations**: Impaired Driving, Aggressive Driving, and Speeding each account for less than 2.5% of overall crashes but are more likely to result in KSI. Behavior contributions are included as reported within crash records; contribution factors may need additional investigation.
- **Young driver** (aged 20 to 24) involved crashes made up around 21.6% of all crashes in Dunwoody. Nearly 30% of KSI's for Dunwoody involve a young driver; this rate is 11.6% at the regional level.
- **Time of day:** Over 30% of all crashes and KSI crashes occurred in the early afternoon hours between 12 – 4 PM. However, crashes were more severe during the night and early morning.
- **Lighting condition:** While 80% of crashes happened during daylight conditions, crashes occurring in dark, not lighted conditions were more likely to lead to KSI.
- **Land use:** crashes in densely developed areas with high traffic volumes are more likely to be KSI crashes.
    - Residential land use encompasses for 68% of city's roadway mileage but only 32% of all crashes and 22% of KSI crashes.
    - Dunwoody Village contains 1.4% of the city's roadways but 9.4% of all crashes and 18% of KSI crashes, leading to the highest crash per roadway mile and KSI per roadway mile.
    - Perimeter Center contains 18% of the city's roadways but 39% of all crashes and 33% of KSI crashes, leading to the second highest crashes per roadway mile following Dunwoody Village.
- **Proximity to destinations:**
    - 6% of crashes happened within ¼ mile of schools and 6% within 500 feet of parks. Crashes near parks and schools did not result in higher KSI rates.
    - Crashes within 500 feet of transit stops are more likely to result in KSI crashes than those away from transit stops. However, transit stops are often located on collector and arterials roads, which tend to have overall higher crash and KSI rates.

Crashes by Year

Similar to regional trends, the total crashes in Dunwoody decreased in 2020 and 2021, but the KSI crashes increased.[6] This may be related to the reduced travel, underreporting of non-KSI crashes, or healthcare system capacity at treating traffic injuries during the pandemic.

Table 2: Crashes by Year, 2017-2021

Year	Total Crashes	Noninjury Crashes	KSI Crashes	KSI%	KSI Rate
2017	1358	1040	5	11.1%	0.4%
2018	1207	960	3	6.7%	0.3%
2019	1270	995	12	26.7%	0.9%
2020	721	539	10	22.2%	1.4%
2021	895	668	15	33.3%	1.7%
Total	**5451**	**4202**	**45**	**100.0%**	**0.8%**

Injury Severity

77% of the crashes in the city resulted in property damage only and no injuries. A total of 45 crashes resulted in KSI.

Table 3: Crashes by Injury Severity, 2017-2021

Injury Severity	# Crashes	% Crashes
Fatal (K)	5	0.1%
Incapacitating (A)	40	0.7%
Non-Incapacitating (B)	248	4.5%
Not visible but complains of pain (C)	956	17.5%
Uninjured (O)	4202	77.1%
Total	**5451**	**100%**

Crashes by Mode

While bicycle crashes did not result in any KSI cases, pedestrian and motorcycle involved crashes resulted in 6 and 3 KSI cases, respectively. This shows that pedestrian and motorcyclists are more vulnerable to severe injuries than motorists. 13.3% of KSI crashes involved bicyclists or pedestrians in Dunwoody, consistent with the regional pattern.[7]

[6] Regional Safety Strategy, 2022 Atlanta Regional Commission, Page 4
[7] Regional Safety Strategy, 2022 Atlanta Regional Commission, Page 26

Table 4: Crashes by Injury Severity and Mode, 2017-2021

Injury Severity	Bicycle	Pedestrian	Motorcycle	Motor Vehicle	Total
Fatal (K)	0	1	0	4	**5**
Incapacitating (A)	0	5	3	32	**40**
Non-Incapacitating (B)	6	25	9	208	**248**
Not visible but complains of pain (C)	6	20	5	925	**956**
Uninjured (O)	10	5	8	4179	**4202**
Total	**22**	**56**	**25**	**5348**	**5451**
KSI Rate	0%	10.7%	12%	0.7%	8.3%

Driver Age

When looking at the drivers involved in crashes, 38% drivers were aged 20-34; these drivers were also involved in 49% of all KSI crashes. When comparing driver age with age distribution of the populations in Dunwoody, drivers aged 20-29 are over-represented in crashes, when comparing to the citywide average.

Table 5: Parties by Age, 2017-2021

Age	# of Drivers	% of Drivers	# of KSI Drivers	% of KSI Drivers	Population[8]	% of Population	Driver: Population Ratio
15-19	778	7%	6	8%	3134	6.1	0.25
20-24	1246	12%	15	19%	2542	5.0	0.49
25-29	1434	14%	11	14%	3344	6.5	0.43
30-34	1225	12%	12	16%	4699	9.2	0.26
35-39	1050	10%	6	8%	4489	8.8	0.23
40-44	863	8%	1	1%	3952	7.7	0.22
45-49	818	8%	7	9%	3390	6.6	0.24
50-54	738	7%	7	9%	3076	6.0	0.24
55-59	548	5%	3	4%	2923	5.7	0.19
60-64	418	4%	3	4%	1956	3.8	0.21
65-69	305	3%	1	1%	1750	3.4	0.17
70-74	253	2%	1	1%	1966	3.8	0.13
75-79	164	2%	1	1%	1433	2.8	0.11
80-84	101	1%	3	4%	1000	2.0	0.10
85+	66	1%	0	0%	869	1.7	0.08
Unknown	605	6%	0	0%	NA	NA	NA
Total	**10614**	**100%**	**77**	**100%**	**40523**	**79.3**	**0.26**

Note: Table 5 summarizes the ages of the first two *drivers* involved in each crash, if available. As a result, this table is not directly comparable to Table 11: Crashes by Reported Young Driver Involved, 2017-2021, which summarizes number of *crashes* involving young drivers.

[8] American Census Survey 5-year Estimates, Table S0101 Age and Sex (2021).

Crash Causation

Crash Types

Table 6 summarizes crash patterns by crash types. Rear end crashes are the leading crash type, accounting for 45% of overall crashes, although the crash injuries are usually not as severe. Most crashes involving vulnerable road users (pedestrians, bicyclists, and motorcyclists) are categorized as “not a collision with motor vehicle”, hence the high share of KSI crashes. In addition, left angle crashes contributed to 22% of KSI crashes in the city, and head-on crashes are more likely to result in KSI as shown in the KSI rate.

Table 6: Crash Types, 2017-2021

Crash Type	# of Crashes	% of Crashes	KSI Crashes	KSI%	KSI Rate
Rear End	2464	45.2%	5	11.1%	0.2%
Angle (Other)	941	17.3%	6	13.3%	0.6%
Sideswipe-Same Direction	743	13.6%	4	8.9%	0.5%
Left Angle Crash	662	12.1%	10	22.2%	1.5%
Not a Collision with Motor Vehicle	312	5.7%	14	31.1%	4.5%
Right Angle Crash	123	2.3%	1	2.2%	0.8%
Head On	113	2.1%	4	8.9%	3.5%
Sideswipe-Opposite Direction	86	1.6%	0	0.0%	0.0%
Unknown	7	0.1%	1	2.2%	14.3%
Total	**5451**	**100.0%**	**45**	**100.0%**	**0.8%**

Cause of Crash

A review of the behavioral causes to crashes in Table 7 shows that Following Too Close is the leading cause of crashes, which corresponds with a high share of rear end crashes. 31% of KSI crashes are caused by Failure to Yield to other vehicles or other roadway users. Driver Losing Control and Improper Turning are more likely to result in KSI than other behavioral causes. 105 of all crashes and 5 KSI crashes did not have behavioral causes specified in the crash report (listed as "Unspecified" below). The "Other" behavioral cause category collapsed 22 categories with low number of crashes.

Table 7: Top Behavioral Causes of Crash by All Modes, 2017-2021

Behavioral Cause	# of Crashes	% of crashes	KSI Crashes	KSI%	KSI Rate
Following Too Close	2083	38.2%	3	6.7%	0.1%
Failure to Yield	988	18.1%	14	31.1%	1.4%
No Contributing Factors	753	13.8%	4	8.9%	0.5%
Changed Lanes Improperly	599	11.0%	4	8.9%	0.7%
Other	262	4.8%	4	8.9%	1.5%
Improper Turn	168	3.1%	5	11.1%	3.0%
Misjudged Clearance	133	2.4%	0	0.0%	0.0%
Improper Backing	125	2.3%	0	0.0%	0.0%
Disregard Stop Sign/Signal	123	2.3%	1	2.2%	0.8%
Driver Lost Control	112	2.1%	5	11.1%	4.5%
Unspecified	105	1.9%	5	11.1%	4.8%
Total	**5451**	**100.0%**	**45**	**100.0%**	**0.8%**

Behaviors

Driving under the Influence

Table 8 summarizes the crashes reported by Driving under the Influence (DUI). The Georgia Code § 40-6-391 (2020) defines driving under the influence as:

A. A person shall not drive or be in actual physical control of any moving vehicle while:
   1. Under the influence of alcohol to the extent that it is less safe for the person to drive;
   2. Under the influence of any drug to the extent that it is less safe for the person to drive;
   3. Under the intentional influence of any glue, aerosol, or other toxic vapor to the extent that it is less safe for the person to drive;
   4. Under the combined influence of any two or more of the substances specified in paragraphs (1) through (3) of this subsection to the extent that it is less safe for the person to drive;
   5. The person's alcohol concentration is 0.08 grams or more at any time within three hours after such driving or being in actual physical control from alcohol consumed before such driving or being in actual physical control ended; or
   6. Subject to the provisions of subsection (b) of this Code section, there is any amount of marijuana or a controlled substance, as defined in Code Section 16-13-21, present in the person's blood or urine, or both, including the metabolites and derivatives of each or both without regard to whether or not any alcohol is present in the person's breath or blood.

Most crashes did not include alcoholic impairment (98.7%), although the impaired driving crashes resulted in a much higher KSI rate, meaning DUI crashes are more likely to result in KSI. Only 4.4% of all KSI crashes involved impaired driving in Dunwoody; at the regional level, this rate is at 8.6%.[9]

Table 8: Crashes by Reported DUI, All Modes, 2017-2021

Impaired	# of Crashes	% of Crashes	# of KSI	% KSI	KSI Rate
No	5380	98.7%	43	95.6%	0.8%
Yes	71	1.3%	2	4.44%	2.8%
Total	**5451**	**100.0%**	**45**	**100.0%**	0.8%

Hit and Run

Table 9 summarizes the crashes reported as a hit and run for all modes. The Georgia Code, O.C.G.A. 40-6-270 (2010) 40-6-270 Hit and run; duty of driver to stop at or return to scene of accident, defines a hit and run as when a driver is involved in an accident resulting in either injury, death, or damage to an occupied vehicle and they fail to stop at the scene and: give name, address, and the registration number of the vehicle, show their driver's license to the other driver involved in the accident if possible, render assistance to the injured driver if possible, and failure to contact emergency medical services if driver appears non responsive. A small number of crashes involved hit and run and the KSI rate for hit and runs are also low at 0.2%.

[9] Regional Safety Strategy, 2022 Atlanta Regional Commission, Page 26

Table 9: Crashes by Reported Hit and Run, All Modes, 2017-2021

	# of Crashes	% of crashes	KSI Crashes	KSI%	KSI Rate
No	4866	89.3%	44	97.8%	0.9%
Yes	585	10.7%	1	2.2%	0.2%
Total	**5451**	**100.0%**	**45**	**100.0%**	**0.8%**

Aggressive Driving

Table 10 summarizes crash reports related to aggressive driving. Georgia Code (Code 1981, §40-6-397, enacted by Ga. L. 2001, p. 208, § 1-7) defines a person accused of aggressive drive as when he or she operates any motor vehicle with the intent to annoy, harass, molest, intimidate, or obstruct another person. Aggressive driving has a KSI rate of 2.3%, with 2.4% of all crashes in Dunwoody involving aggressive driving. 6.7% of all KSI crashes in Dunwoody involved aggressive driving; this rate is 4.5% at the regional level.[10]

Table 10: Crashes by Reported Aggressive Driving, 2017-2021

	# of Crashes	% of crashes	KSI Crashes	KSI%	KSI Rate
No	5320	97.6%	42	93.3%	0.8%
Yes	131	2.4%	3	6.7%	2.3%
Total	**5451**	**100.0%**	**45**	**100.0%**	**0.8%**

Young Driver Involved

Crashes involving young drivers aged 20 to 24 make up around 21.6% of all crashes in Dunwoody. These crashes also have a KSI rate of 1.1%. Nearly 30% of KSI's for Dunwoody involve a young driver; this rate is 11.6% at the regional level [11]

Table 11: Crashes by Reported Young Driver Involved, 2017-2021

	# of Crashes	% of crashes	KSI Crashes	KSI%	KSI Rate
No	4272	78.4%	32	71.1%	0.7%
Yes	1179	21.6%	13	28.9%	1.1%
Total	**5451**	**100.0%**	**45**	**100.0%**	**0.8%**

In comparison, there are fewer crashes involving teenage drivers aged 15 to 19 in Dunwoody. These crashes also have a lower KSI rate at 0.7%.

Table 12: Crashes by Reported Teen Driver Involved, 2017-2021

	# of Crashes	% of crashes	KSI Crashes	KSI%	KSI Rate
No	4716	86.5%	40	88.9%	0.8%
Yes	735	13.5%	5	11.1%	0.7%
Total	**5451**	**100.0%**	**45**	**100.0%**	**0.8%**

[10] Regional Safety Strategy, 2022 Atlanta Regional Commission, Page 26
[11] Regional Safety Strategy, 2022 Atlanta Regional Commission, Page 26

Speeding

Table 13 summarizes crashes that were reported as involving speeding. *Georgia Code O.C.G.A. 40-6-180 (2010) 40-6-180* states: "no person shall drive a vehicle at a speed greater than is reasonable and prudent under the conditions and having regard for the actual and potential hazards then existing."

According to the National Safety Council, speeding was a factor in 29% of US traffic fatalities in 2021.[12] In Dunwoody, the crash data analyzed showed that speeding was only listed as a factor in 1.5% of crashes but was more likely to result in KSI crashes than non-speeding crashes.

Table 13: Crashes by Reported Speeding, 2017-2021

	# of Crashes	% of crashes	KSI Crashes	KSI%	KSI Rate
No	5370	98.5%	44	97.8%	0.8%
Yes	81	1.5%	1	2.2%	1.2%
Total	**5451**	**100.0%**	**45**	**100.0%**	**0.8%**

[12] https://injuryfacts.nsc.org/motor-vehicle/motor-vehicle-safety-issues/speeding/

Roadway Characteristics

Crash Location (Intersection vs. Segment)

Table 14 summarizes crash frequencies for all mode types. Crashes were categorized as an intersection crash if the data point is geolocated within 150 feet of the intersection, and if the closest segment is a part of that intersection (i.e. preventing a crash along a highway to be to categorized as an intersection crash on a nearby frontage road). Crashes not assigned as an intersection crash were categorized as segment crashes. Crashes occurred most often at intersections (86.3% of all crashes, 71.11% of KSI crashes). When comparing to regional trends, intersection crashes in the ARC region only account for 60.2% of all KSI crashes, while in Dunwoody, 71.1% of KSI crashes happened at intersections.[13] The number of crashes at intersections that result in a KSI is roughly 0.7%. While there were a lower number of segment crashes compared to intersection crashes, segment crashes had a slightly higher rate of resulting in a KSI (1.74%).

Table 14: Crashes by Location, All Modes, 2017-2021

Crash Location	# of Crashes	% of Crashes	# of KSI	% KSI	KSI Rate
Intersection	4702	86.3%	32	71.11%	0.7%
Segment	748	13.7%	13	28.89%	1.7%
Total	**5450***	**100%**	**45**	**100%**	**0.8%**

* One collision is considered off-roadway.

Traffic Volume

Table 15 summarizes crashes by AADT for all modes. The AADT volumes are reported in the crash data for 67% of the records. Among the crashes with documented AADT, 38% of KSI crashes and 41% of all crashes happened on roadways with AADT between 15,000 and 29,999. Without comprehensive AADT for all city streets the analysis did not calculate crashes or rates per mile.

Table 15: Crashes by AADT, All Modes, 2017-2021

AADT[14]	# of Crashes	% of Crashes	# of KSI	% KSI	KSI Rate
<15,000	788	14.5%	5	11.1%	0.6%
15,000-29,999	2210	40.5%	17	37.8%	0.8%
30,000+	653	12.0%	3	6.7%	0.5%
No AADT Estimates	1800	33.0%	20	44.4%	1.1%
Total	**5451**	**100.0%**	**45**	**100.0%**	**0.8%**

[13] Regional Safety Strategy, 2022 Atlanta Regional Commission, Page 26

[14] Because the AADT information only exists at the crash level, not the roadway network level, the project team is unable to normalize crashes by roadway miles in each AADT category.

Functional Classification

Table 16 shows crash patterns by roadway functional class. Segment crashes are assigned the functional class of the road the crash is on; intersection crashes are assigned the highest functional class if multiple classes are present at the intersection. Crashes on collector streets are more likely to result in fatality or severe injury. When normalizing crashes by total roadway miles for each functional class, arterials and interstate ramp have more frequent overall crashes and KSI crashes, likely due to the high volume and speed on these roads.

Table 16: Crashes by Functional Classification, All Modes, 2017-2021

Highest Roadway Classification at Intersection	# of Crashes	% of Crashes	# of KSI	% KSI	KSI Rate	Crashes per Mile	KSI Crashes per Mile	Roadway Miles
Arterial	3545	65.0%	26	57.78%	0.73%	152.37	1.12	23.3
Collector	998	18.3%	13	28.89%	1.30%	46.32	0.60	21.5
Interstate Ramp	626	11.5%	5	11.11%	0.80%	187.43	1.50	3.3
Local	256	4.7%	1	2.22%	0.39%	1.72	0.01	149.1
Freeway	25	0.5%	0	0.00%	0.00%	22.73	0.00	1.1
Unknown	1	0.0%	0	0.00%	0.00%	NA	NA	NA
Total	**5451**	**100.0%**	**45**	**100.00%**	**0.83%**	**27.49**	**0.23**	**198.3**

Roadway Ownership

The City of Dunwoody owns most roads in the city; the state owns Cotillion Drive, Peachtree Industrial Boulevard access roads, limited access freeways and ramps. Interstate 285 and Peachtree Industrial Boulevard were excluded from this analysis.

Crashes happened on ramps, Cotillion Drive, PIB access roads, or within 50 feet of these roads, are considered crashes related to state roads. The remainder were classified as local crashes. 765 crashes occurred on state roads, accounting for 14% of all crashes in Dunwoody. 10 out of 765 state road crashes resulted in KSI. 35 out of 4651 local crashes resulted in KSI. The higher rate of KSI on state roads were likely related to higher speed on access roads and at ramps.

Posted Speed Limit

Table 17 summarizes crash patterns by posted speed limit, as documented in the crash data. 56% of all crashes and 56% of KSI crashes happened on roadways with 35 miles per hour (mph) posted speed limit. 45 mph and above roads also experience relatively high shares of overall crashes, and KSI crashes in the city, leading to the highest crashes per mile (328.8), and KSI per mile. Given the small percentage of roadways with 30 and 40 mph speed limit, there were fewer crashes on these roads.

Table 17: Crashes by Posted Speed Limit, All Modes, 2017-2021

Posted Speed Limit (MPH)	# of Crashes	% of Crashes	# of KSI	% KSI	KSI Rate	Crashes per Mile	KSI per Mile	Roadway Miles
25	297	5.4%	1	2.2%	0.3%	2.0	0.0	151.3
30	35	0.6%	1	2.2%	2.9%	15.9	0.5	2.2
35	3032	55.6%	25	55.6%	0.8%	88.1	0.7	34.4
40	114	2.1%	1	2.2%	0.9%	63.3	0.6	1.8
45+	1973	36.2%	17	37.8%	0.9%	328.8	2.8	6
Total	**5451**	**100.0%**	**45**	**100.0%**	**0.8%**	**27.9**	**0.2**	**198.7**

Number of lanes

Table 18 shows crash patterns by total number of lanes on a roadway. Number of lanes were calculated based on the centerline data that the City provided. For street segments that were missing number of lane attribute, the project team assumed two lanes per direction for interstate ramp and access roads, and one lane each direction for local roads. Crashes at midblock locations were then assigned number of lanes based on the road the crash is on; intersection crashes were assigned the maximum number of lanes, if the intersecting legs have different number of lanes.

37% of all crashes and 35.6% of KSI crashes happened on four-lane roadways. Crashes on 6-lane and more roads are more likely to result in KSI injuries. When normalizing crashes by roadway miles, we see crashes per mile and KSI per mile increase as the number of lanes go up.

Given the small share of streets with four or more lanes per direction, the crash per mile and KSI per mile metrics may not be representative of the conditions on these roads.

Table 18 Crashes by Number of Lanes, All Modes, 2017-2021

Number of Lanes	# of Crashes	% of crashes	KSI Crashes	KSI%	KSI Rate	Crashes per Mile	KSI per Mile	Roadway Miles
2	1349	24.7%	11	24.4%	0.8%	7.7	0.1	174.7
4	2021	37.1%	16	35.6%	0.8%	120.1	1.0	16.8
6+	2080	38.2%	18	40.0%	0.9%	410.3	3.6	5.1
Unknown	1	0.0%	0	0.0%	0.0%	NA	NA	NA
Total	**5451**	**100.0%**	**45**	**100.0%**	**0.8%**	**27.5**	**0.2**	**198.6**

Intersection control devices

Table 19 summarizes crash patterns for intersection crashes by intersection control type. Intersections within 100 feet of signal locations provided by the City are considered signalized intersections, intersections where local streets intersect are assumed to be all-way stop intersections, and the remainder intersections are considered to be two-way stop controlled. Among the 4,702 intersection crashes, 70% all crashes, including 75% KSI crashes, happened at signalized intersections, resulting in a higher KSI rate at signalized intersections than at two-way stop-controlled intersections.

Table 19 Crashes by Presence of Intersection Control Type

Row Labels	# of Crashes	% of crashes	KSI Crashes	KSI%	KSI Rate
All-way Stop	121	2.6%	0	0.00%	0.00%
Signalized	3338	71.0%	24	75.00%	0.72%
Two-way Stop	1243	26.4%	8	25.00%	0.64%
Total	**4702**	**100.0%**	**32**	**100.00%**	**0.68%**

Environmental Characteristics

Time of Day

Table 20 shows that the majority of crashes happened between 12-8 PM, although crashes occurred late at night (12-4 AM) resulted in higher chance of fatal or severe injury cases.

Table 20 Crashes by Time of Day, All Modes, 2017-2021

Time of Day	# of Crashes	% of Crashes	# of KSI	% KSI	KSI Rate
12 - 4 AM	113	2.1%	4	8.9%	3.5%
4 - 8 AM	667	12.2%	4	8.9%	0.6%
8 AM - 12 PM	1200	22.0%	6	13.3%	0.5%
12 - 4 PM	1750	32.1%	14	31.1%	0.8%
4 - 8 PM	1410	25.9%	13	28.9%	0.9%
8 PM - 12 AM	311	5.7%	4	8.9%	1.3%
Total	**5451**	**100.0%**	**45**	**100.0%**	**0.8%**

Lighting Condition

Table 21 summarizes crash patterns by lighting conditions documented in the crash data. While most crashes happened during daylight conditions, crashes occurred in dark, not lighted conditions resulted in a higher share of KSI.

Table 21 Crashes by Reported Lighting Condition, All Modes, 2017-2021

Reported Lighting Condition	# of Crashes	% of Crashes	# of KSI	% KSI	KSI Rate
Daylight	4385	80.4%	31	68.9%	0.7%
Dark-Lighted	779	14.3%	9	20.0%	1.2%
Dark-Not Lighted	162	3.0%	4	8.9%	2.5%
Dusk	83	1.5%	0	0.0%	0.0%
Dawn	40	0.7%	0	0.0%	0.0%
Unknown	2	0.0%	1	2.2%	50.0%
Total	**5451**	**100.0%**	**45**	**100.0%**	**0.8%**

Land Use and Context Characteristics

Primary Land Use

Table 22 summarizes crash patterns by land use.[15] Perimeter Center and Residential areas have the most crashes and are also the largest areas in the city.

When normalizing crashes by roadway miles for each land use category, Dunwoody Village has the highest crash density, with 184 crashes per mile and 2.9 KSI crashes per mile. Perimeter Center, Georgetown-Shallowford Road also have relatively high crashes per mile and KSI crashes per mile. These are important to consider because they show a condensed area of crashes and KSI's around major retail and planned developments along major corridors.

When looking at KSI rates, crashes in Dunwoody Village and Georgetown-Shallowford Road areas are more likely to result in a KSI. This further reflects the need for specific countermeasures within the denser and newly developed areas of Dunwoody.

Table 22 Crashes by Primary Land Use, All Modes, 2017-2021

Primary Land Use Type	# of Crashes	% of Crashes	# of KSI	% KSI	KSI Rate	Crashes Per Mile	KSI Per Mile	Roadway Miles
Perimeter Center	2141	39.3%	15	33.3%	0.7%	60.2	0.4	35.5
Residential	1740	31.9%	10	22.2%	0.6%	12.6	0.1	137.6
Georgetown-Shallowford Road	681	12.5%	8	17.8%	1.2%	59.2	0.7	11.5
Dunwoody Village	513	9.4%	8	17.8%	1.6%	184.0	2.9	2.8
Mixed-use/Other	376	6.9%	4	8.9%	1.1%	25.8	0.3	14.6
Total	5451	**100.0%**	**45**	**100.0%**	**0.8%**	**27.0**	**0.2**	**202.0**

* Other land uses include Community Facility/Water Treatment, Jett Ferry Gateway, Winters Chapel, and Institutional/Campus. Crashes per mile appear high due to low roadway miles. Given the overall small size of these land use categories, the crash patterns are not representative of the overall conditions in the area.

Crash Type by Land Use

Table 23 and Table 24 provided summaries of crash types for Perimeter Center and Residential land uses. These two land uses encompass large shares of crashes that occurred in Dunwoody and reflect two significantly different built environment forms within the city. In both areas, rear end crashes accounted for the largest share of crashes but were less likely to result in KSI.

In Perimeter Center, left angle crashes and crashes not involving another motor vehicle contributed to 26.7% of all KSI crashes, respectively. Head-on crashes and crashes not involving another motor vehicle were more likely to result in KSI crashes than other crash types.

[15] Land use data came from the character area data from the City's Comprehensive Plan.

Table 23 Crash Type in Perimeter Center

Crash Type	Total Crashes	% of crashes	KSI Crashes	KSI%	Crashes Resulted in KSI
Rear End	910	42.5%	2	13.3%	0.2%
Sideswipe-Same Direction	451	21.1%	3	20.0%	0.7%
Angle (Other)	409	19.1%	0	0.0%	0.0%
Left Angle Crash	192	9.0%	4	26.7%	2.1%
Not a Collision with Motor Vehicle	93	4.3%	4	26.7%	4.3%
Right Angle Crash	44	2.1%	0	0.0%	0.0%
Head On	26	1.2%	2	13.3%	7.7%
Sideswipe-Opposite Direction	15	0.7%	0	0.0%	0.0%
Unclassified	1	0.0%	0	0.0%	0.0%
Total	**2141**	**100.0%**	**15**	**100.0%**	**0.7%**

In Residential areas, left angle crashes accounted for 40% of all KSI crashes, while rear end accounted for 30%. Sideswipe of opposite directions and left angle crashes were more likely to lead to KSI, with 3.6% of sideswipe of opposite directions, and 2.6% of left angle crashes resulted in KSI.

Table 24 Crash Type in Residential Areas

Crash Type	Total Crashes	% of crashes	KSI Crashes	KSI%	Crashes Resulted in KSI
Rear End	922	53.0%	3	30.0%	0.3%
Sideswipe-Same Direction	236	13.6%	0	0.0%	0.0%
Angle (Other)	178	10.2%	0	0.0%	0.0%
Left Angle Crash	155	8.9%	4	40.0%	2.6%
Not a Collision with Motor Vehicle	118	6.8%	1	10.0%	0.8%
Right Angle Crash	51	2.9%	0	0.0%	0.0%
Head On	49	2.8%	1	10.0%	2.0%
Sideswipe-Opposite Direction	28	1.6%	1	10.0%	3.6%
Unclassified	3	0.2%	0	0.0%	0.0%
Total	**1740**	**100.0%**	**10**	**100.0%**	**0.6%**

Schools

Table 25 summarizes crashes by proximity to schools for all modes. KSI crashes occurred most often beyond ¼ mile from schools. Only 5.8% of crashes occurred within a quarter mile, with a KSI rate of 0.6%. Crashes were flagged for within ¼ mile from schools in the crash data source.

Table 25 Crashes by Proximity to Schools, All Modes, 2017-2021

Proximity to School	# of Crashes	% of Crashes	# of KSI	% KSI	KSI Rate
Within ¼ mile	**314**	5.8%	2	4.4%	0.6%
Greater than ¼ mile	**5137**	94.2%	43	95.6%	0.8%
Total	**5451**	**100.0%**	**45**	**100.0%**	**0.8%**

Transit Stops

Table 26 summarizes crashes by proximity to transit stops for all modes. Most crashes occurred within the 500 feet of a transit stop (58.9% of all crashes). The KSI rate for crashes proximate to transit stops is 1.1%. Since most transit stops are along arterials in Dunwoody, the high KSI rate near transit stops may be correlated to high KSI rate along arterials.

Table 26 Crashes by Proximity to Transit Stops, All Modes, 2017-2021

Proximity to Transit Stop	# of Crashes	% of Crashes	# of KSI	% KSI	KSI Rate
Within 500 feet	3208	58.9%	34	75.6%	1.1%
Greater than 500 feet	2243	41.1%	11	24.4%	0.5%
Total	**5451**	**100.0%**	**45**	**100.0%**	**0.8%**

Parks and Open Space

Table 27 summarizes crashes by proximity to parks for all modes. Crashes occurred most often beyond 500 feet from a park. Only 4.4% of crashes occurred within a 500-foot boundary of schools. Most KSI's occurred outside of the 500-foot park boundary. Crashes were flagged for within 500 feet of parks based on the parks and open space data the City provided.

Table 27 Crashes by Proximity to Parks and Open Space

Proximity to Parks	# of Crashes	% of Crashes	# of KSI	% KSI	KSI Rate
Within 500 feet	328	6.0%	2	4.4%	0.6%
Greater than 500 feet	5123	94.0%	43	95.6%	0.8%
Total	**5451**	**100.0%**	**45**	**100.0%**	**0.8%**

Crash Maps

To build an effective and roadway safety program, it is critical to understand crash patterns at the network level. Through a variety of data-driven analyses, we can identify individual roadway segments, corridors, and intersections with the greatest potential for safety improvement and begin to connect these locations to practical safety infrastructure improvements and policy changes. Part of the safety management process defined in the Highway Safety Manual, these screening processes are centered around producing actionable solutions, empowering agencies to achieve goals of reducing severe crashes and improving safety for all road users.

Using the methodologies outlined in **Crash Analysis Methodology** section, the project team produced the crash map results based on the sliding window analysis and Safer Streets Model. Outcomes in this section set the foundation for high injury network development.

Figure 3: Pedestrian Sliding Window Analysis

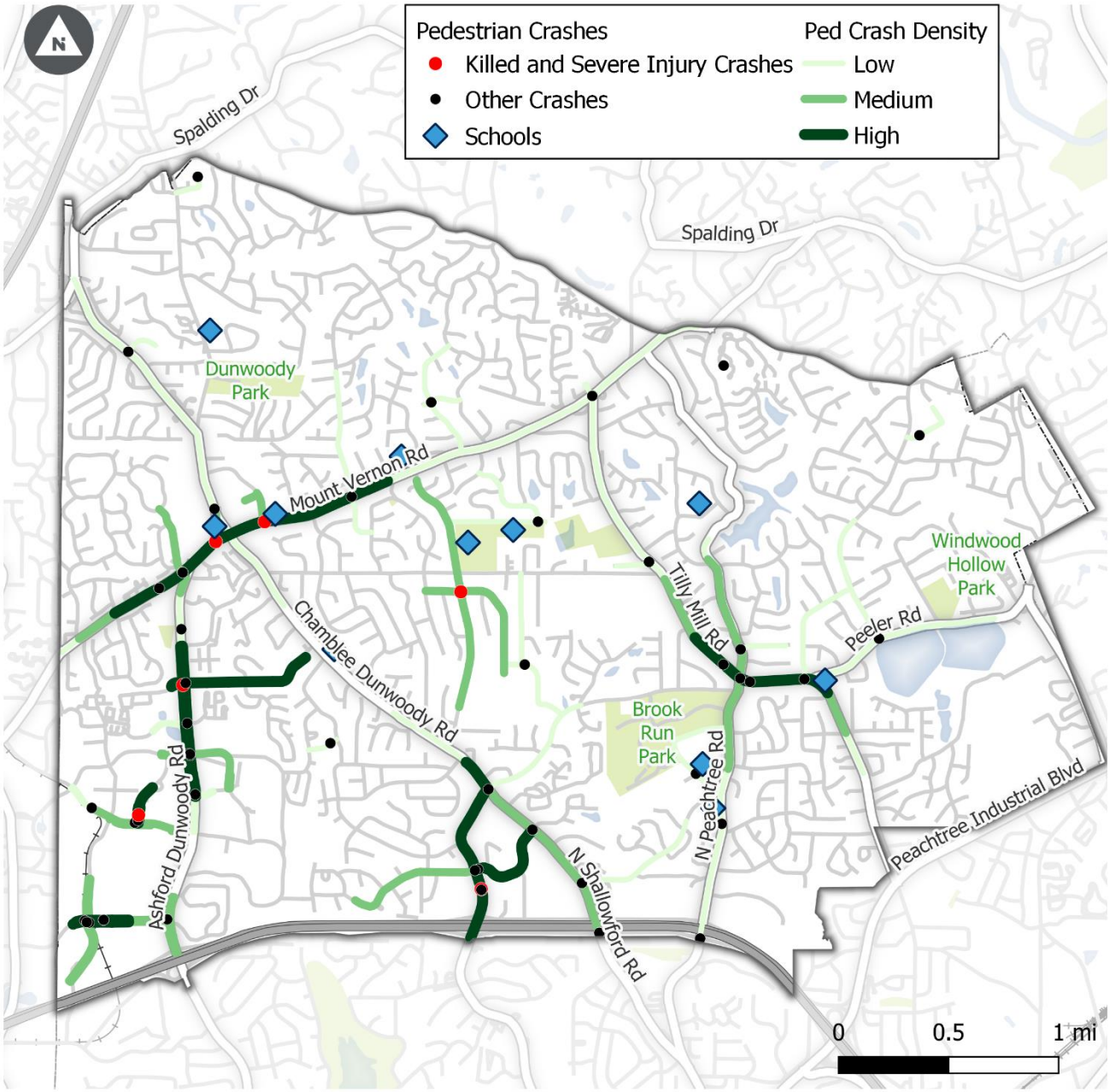
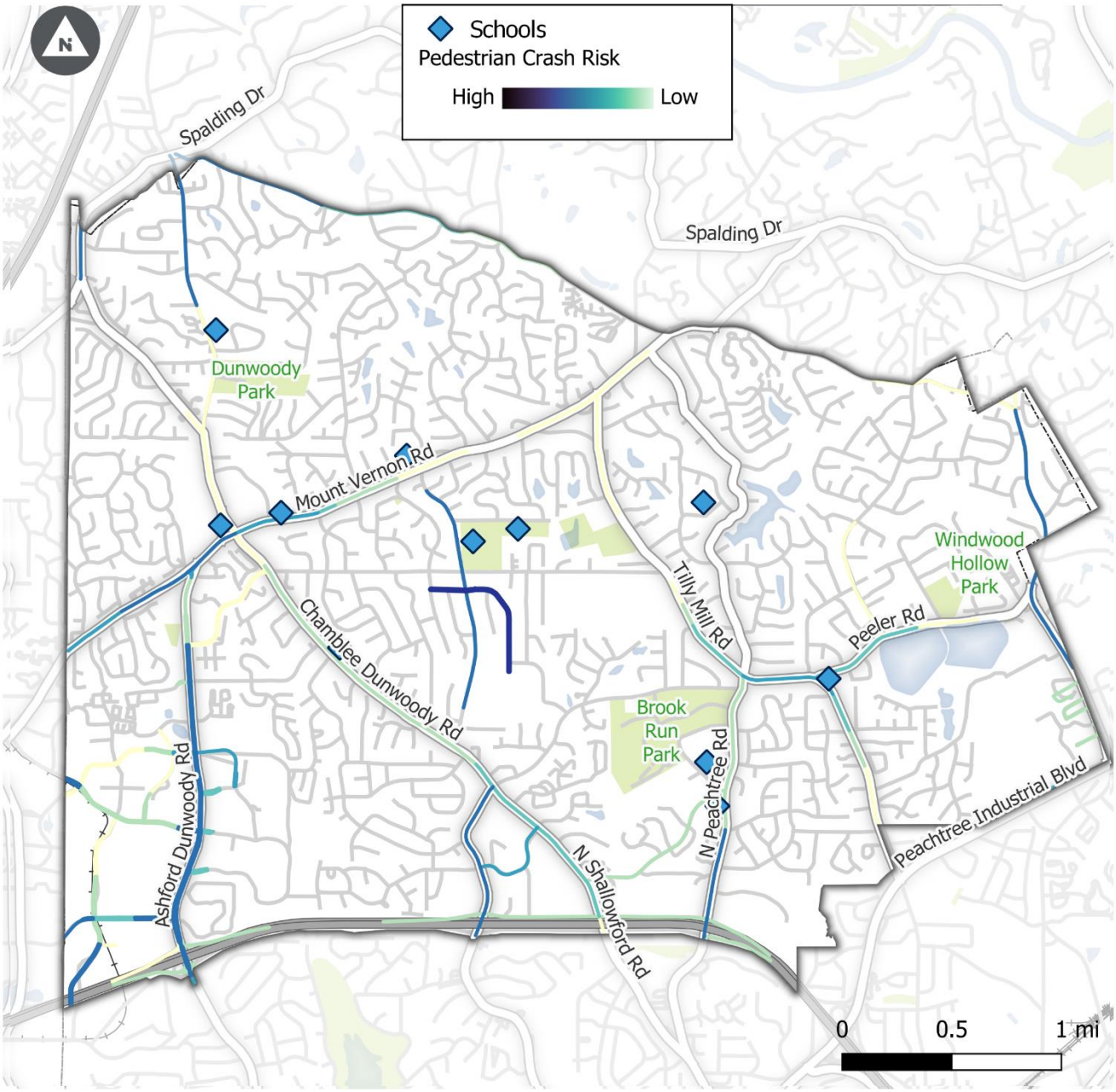
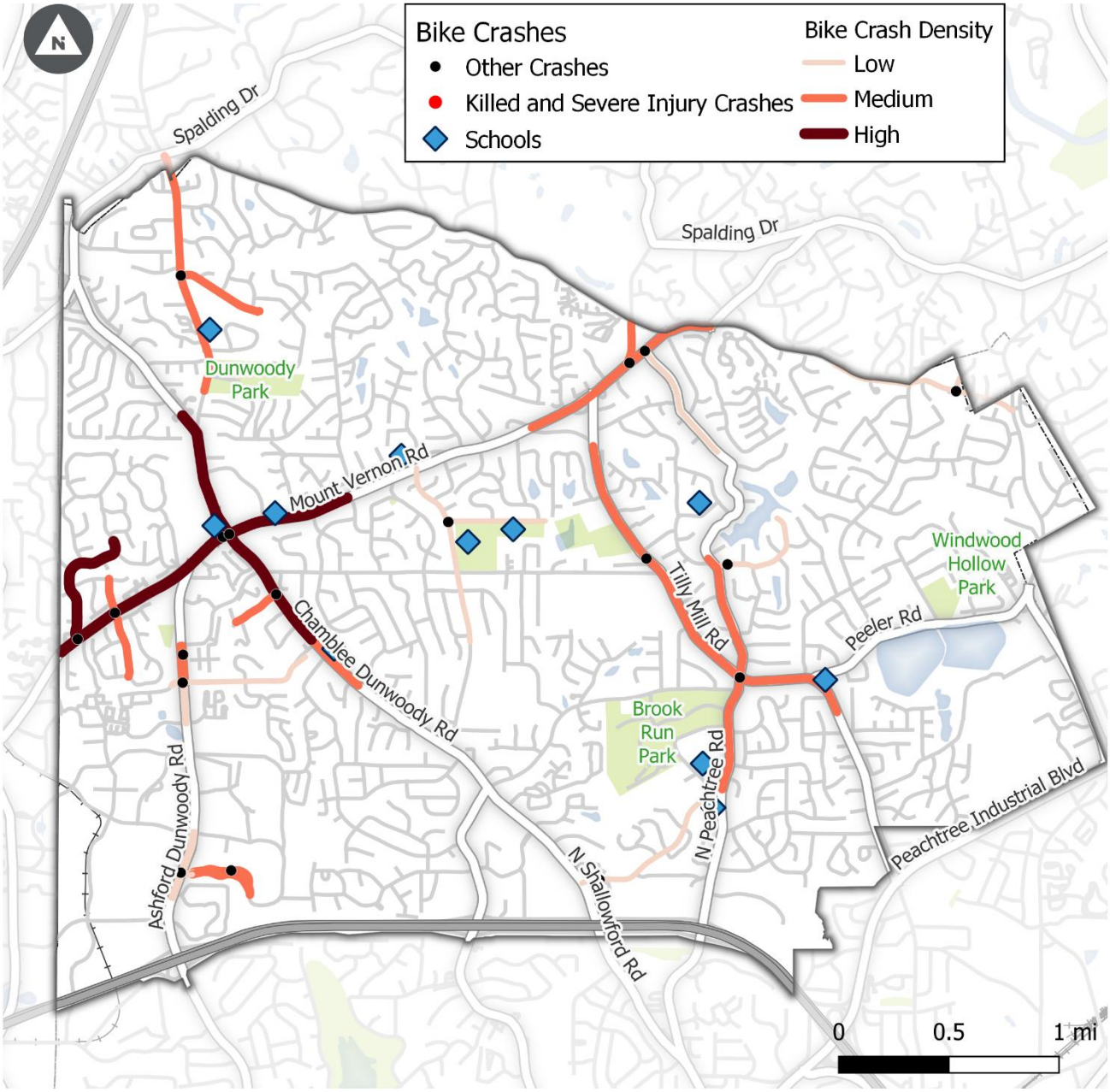


Figure 4: Pedestrian Safer Streets Model



Note: The Safer Streets Model estimates pedestrian crash risks throughout the system. The framework identifies corridors with highest potential risk for pedestrian crashes to occur in the future using both historical crash data and a statistical model based on roadway functional classification. See pages 7-9 for more information.

Figure 5: Bicyclist Sliding Window Analysis



Note: due to the small number of bicycle crashes and no KSI bicycle crashes, the Safer Streets bicycle crash model does not have enough data to generate bicycle crash risk assessment.

Figure 6: Motorcyclist Sliding Window Analysis

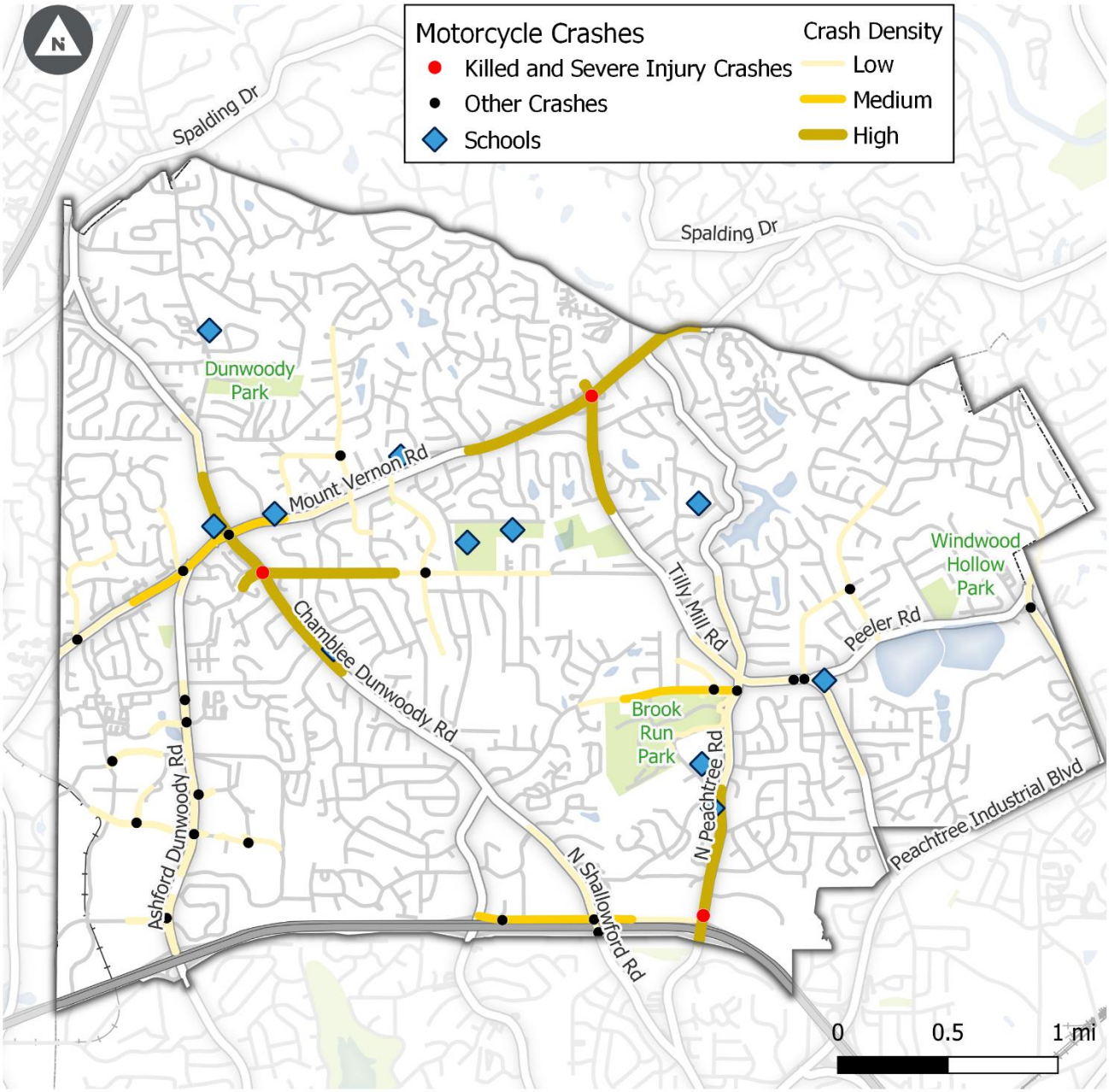
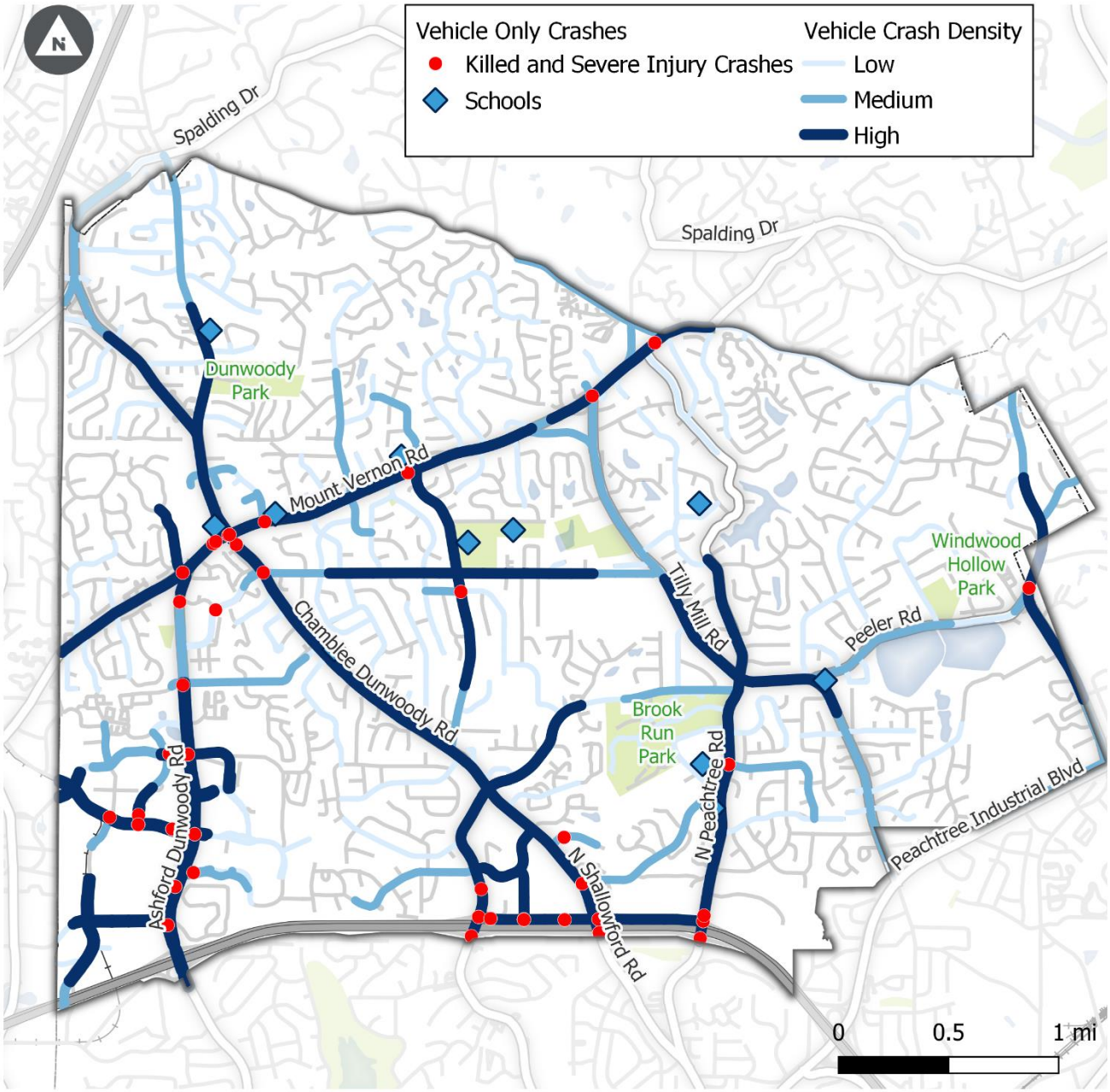


Figure 7: Vehicle Sliding Window Analysis



Development of High Injury Network

The draft High Injury Network is developed based on the results of the crash density maps from the sliding window analysis. Both intersection and segment crashes were included in this evaluation, as the focus is on overall corridor conditions. The HIN aims to help identify corridors that may warrant special attention. Identification of these streets helps a city prioritize investment in the areas where crash history demonstrates the most serious problems and easily communicate those priorities to the community.

Developing an HIN is an iterative process. It is expected that the City of Dunwoody will review the HINs produced during this task and recommend additional streets to be considered for inclusion or specific streets to be removed from the current draft HIN. The HIN development process relies on historical crash data, which is imperfect and incomplete because not every crash is reported to the police. As such, this process requires engineering judgement as well as local knowledge. The following process was used to develop the mode-specific HINs and the overall HIN:

1. Map the Sliding Windows analysis results for each mode (pedestrian, bicycle, motorcycle, and motor vehicle) individually. (See Crash Maps for sliding window analysis results.)
2. For each mode, determine the threshold of the Sliding Window score required to be included in the HIN. This step eliminates streets that have a lower crash density thereby prioritizing streets that have higher crash severities and frequencies.
3. Review and manually adjust for false-positive segments that have a high crash score due to a single intersection crash but do not have any other crashes along the corridor.

Major intersections along the high injury network will also be considered for intersection recommendations.

High Injury Network Thresholds

The goal of the minimum HIN threshold setting process is to settle on a minimum sliding window score for each mode independently that will create a network that covers a selective set of the city streets but a relatively large share of crashes with an emphasis on KSI crashes.

Thresholds for each mode included in the HIN are listed below. These thresholds were picked so that about 15%-20% of the segments were selected for modal HINs. A segment that meets or exceeds the weighted crash score threshold noted below for each mode were included in each mode-specific HIN and the overall HIN. The weighted crash score thresholds for areas included in the HIN do not exactly follow the weighted crash score ranges from the sliding windows, as the HIN is a compilation of the highest weighted crash scores.

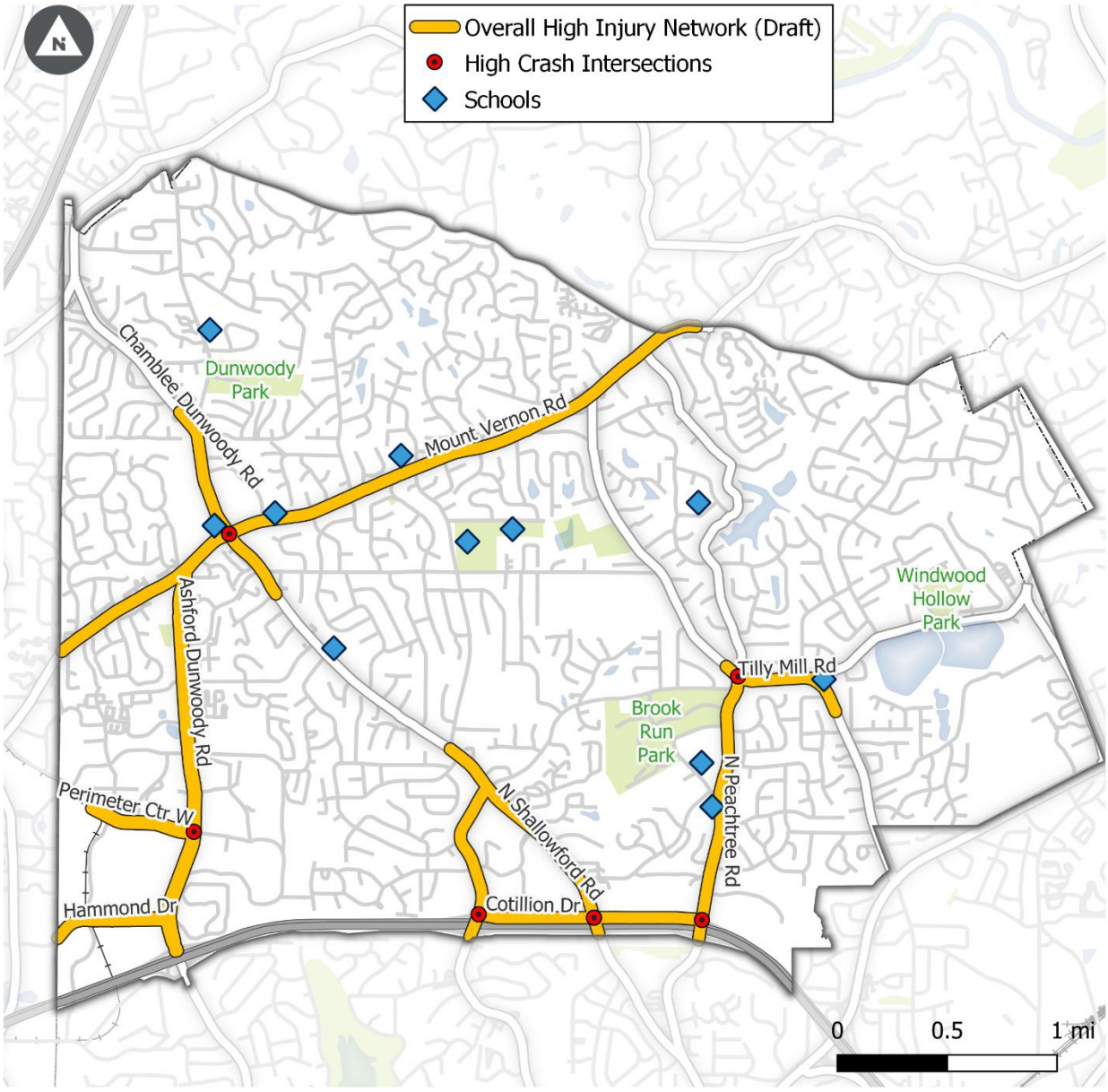
- **Pedestrian**: 10
- **Bicycle**: 6
- **Motorcycle**: 10
- **Motor Vehicle**: 75

Overall High Injury Network Manual Context Adjustments

The following corridor extents were manually adjusted based on review by the project team to account for unique street contexts the automated Sliding Windows Analysis did not account for. The following corridors were manually adjusted based on the following reasons:

- From vehicle high injury network, removed Hammond Dr, Perimeter Ctr N, Perimeter Ctr Pl, Meadow Lane Rd as the intersection crashes on these corridors were already accounted for in other HIN segments.
- From pedestrian high injury network,
    - removed Perimeter Ctr Pl because the severe crash was with construction equipment (collision id= 7612733),
    - removed Dunwoody Park as the intersection crashes on these corridors were already accounted for in other HIN segments, and
    - connected high crash density segment on Hammond Drive to the intersection with Ashford Dunwoody Road to meet the minimum ½ mile corridor length.
- From bike high injury network, removed Hidden Branches Drive and Chamblee Dunwoody Road as intersection crashes on these corridors were already accounted for in other HIN segments.
- For overall HIN, per client advice,
    - trimmed back the following streets as roadway configurations change:
        - northern end of N Peachtree Road to Tilly Mill Road,
        - eastern end of Perimeter Ctr W to Ashford Dunwoody Road,
        - western end of Tilly Mill Road to 370 feet west of the intersection at N Peachtree Road,
        - northern end of N Shallowford Road to Vernack Road,
        - southern end of Chamblee Dunwoody Road to Magnet Way,
        - northern end of Chamblee Dunwoody Road to Magnolia Walk Circle;
    - removed Valley View Road as crashes are clustered on the two ends of the corridor, and are accounted for on Chamblee Dunwoody Road and Ashford Dunwoody Road,
    - connected northern end of Ashford Dunwoody Road to Mount Vernon Road, and
    - connected Mount Vernon Road within city limits.

Figure 8: All Modes High Injury Network



The resulted HIN accounted for 9% of the city's roadway miles but covered 75% of all crashes and 84% of KSI crashes in the city.

Table 28: Roadway Miles and Crash Summary Comparison - HIN vs. Citywide

	Roadway Miles	Total Crashes	KSI Crashes
HIN	15	4,076	38
Citywide Total*	162.9	5,451	45
HIN/Citywide (%)	9%	75%	84%

* Excluding private roads and limited-access freeways.

High Injury Network

Table 29: High Injury Network Corridors

Corridor Name	From	To
Mt Vernon Rd	Lisa Lane NE	Saffon Drive
N Peachtree Rd	Tilly Mill Rd	Cotillion Drive
Tilly Mill Rd	370’ west of N Peachtree Rd	Dunkerrin Lane
Cotillion Drive	Chamblee Dunwoody Rd	N Peachtree Rd
N Shallowford Rd	Cotillion Dr	Chamblee Dunwoody Rd
Chamblee Dunwoody Rd	Manget Way	Magnolia Walk Cir
Hammond Drive	Western City Limit	Ashford Dunwoody Rd
Perimeter Ctr W	Perimeter Ctr Way	Ashford Dunwoody Rd
Ashford Dunwoody Rd	Mount Vernon Rd	I-285 WB On/Off Ramp
Chamblee Dunwoody Rd	Vermack Rd	Cotillion Dr

Table 30: High Injury Network Intersections

Intersection Name
Chamblee Dunwoody Rd & Mount Vernon Rd
N Peachtree Rd & Tilly Mill Rd
Cotillion Dr & N Peachtree Rd
Ashford Dunwoody Rd & Perimeter Ctr W
Chamblee Dunwoody Rd & Cotillion Dr
Cotillion Dr & N Shallowford Rd

Crash Types along High Injury Network Corridors

ID	Corridor Name	From	To	Unclassified	Angle (Other)	Head On	Left Angle Crash	Not a Collision with MV	Rear End	Right Angle Crash	Sideswipe-Opposite Direction	Sideswipe-Same Direction	Total Crashes	KSI Crashes
1	Ashford Dunwoody Rd	Mount Vernon Rd	I-285 WB On/Off Ramp	1	213	12	102	50	632	22	6	333	1371	7
2	Chamblee Dunwoody Rd	Manget Way	Magnolia Walk Cir	0	64	5	72	16	280	11	5	58	511	5
3	Cotillion Dr	Chamblee Dunwoody Rd	N Peachtree Rd	0	92	16	84	12	223	13	3	39	482	9
4	Hammond Dr	Western City Limit	Ashford Dunwoody Rd	0	131	3	52	17	202	7	3	119	534	1
5	Mount Vernon Rd	Lisa Lane NE	Saffon Drive	0	80	16	111	31	388	14	9	71	720	10
6	N Peachtree Rd	Tilly Mill Rd	Cotillion Drive	1	50	11	42	16	195	7	7	39	368	4
7	N Shallowford Rd	Cotillion Dr	Chamblee Dunwoody Rd	1	44	22	69	18	219	7	8	22	410	3
8	Perimeter Ctr W	Perimeter Ctr Way	Ashford Dunwoody Rd	0	65	8	31	10	137	8	0	57	316	6
9	Tilly Mill Rd	370’ west of N Peachtree Rd	Dunkerrin Lane	0	8	7	9	10	87	2	1	10	134	0
10	Chamblee Dunwoody Rd	Vermack Rd	Cotillion Dr	2	111	15	86	19	216	18	10	57	534	3

Crash Types at High Injury Network Intersections

	Intersection Name	Angle (Other)	Head On	Left Angle Crash	Not a Collision with MV	Rear End	Right Angle Crash	Sideswipe-Opposite Direction	Sideswipe-Same Direction
1	Chamblee Dunwoody Rd & Mount Vernon Rd	21	1	5	2	66	3	0	33
2	N Peachtree Rd & Tilly Mill Rd	36	11	29	2	61	4	0	23
3	Cotillion Dr & N Peachtree Rd	23	3	31	5	78	4	0	30
4	Ashford Dunwoody Rd & Perimeter Ctr W	25	3	11	8	70	6	0	15
5	Chamblee Dunwoody Rd & Cotillion Dr	15	2	11	8	122	2	3	10
6	Cotillion Dr & N Shallowford Rd	6	4	3	3	51	1	0	7