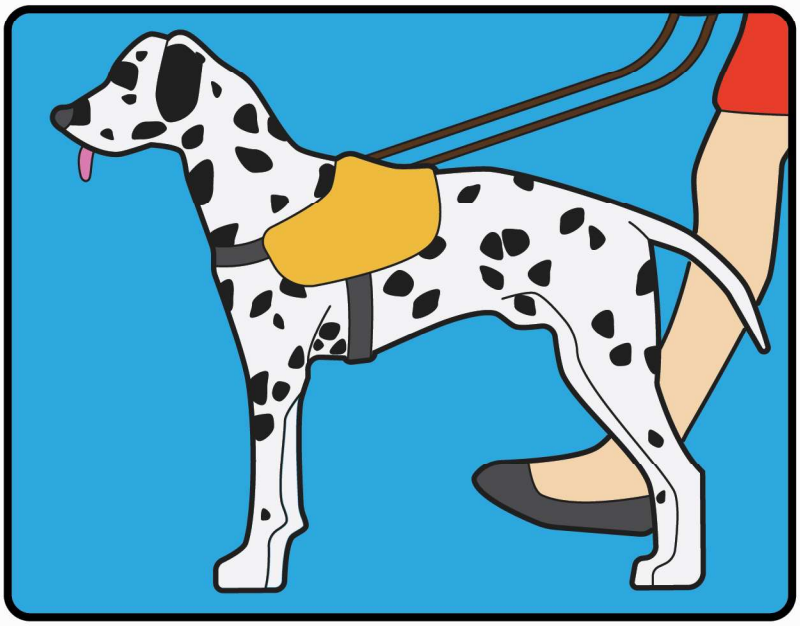
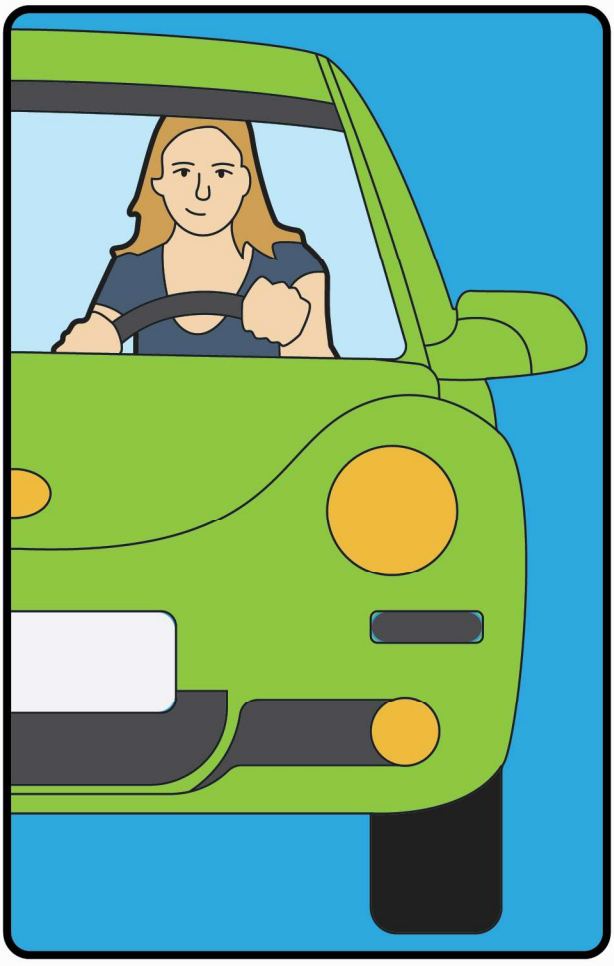
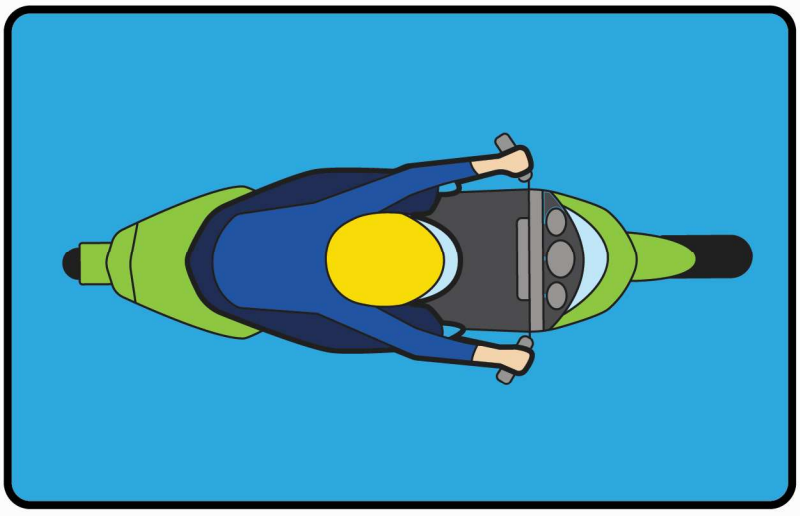
BLOOMINGTON

SAFE STREETS FOR ALL







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List of Abbreviations

ACS: American Community Survey

DUI: Driving Under the Influence

FHWA: Federal Highway Administration

FI: Fatal or Injury (all injury severities)

FSI: Fatal or Serious Injury

HIN: High Injury Network

HPN: High Priority Network

HRN: High Risk Network

INDOT: Indiana Department of Transportation

PCSi: Proven Safety Countermeasure initiative

PHB: Pedestrian Hybrid Beacon

RRFB: Rectangular Rapid Flashing Beacon(s)

SRTS: Safe Routes to School

USDOT: United States Department of Transportation

VPD: Vehicles Per Day

VRU: Vulnerable Road User (includes Pedestrians or Bicyclists)

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Bloomington is committed to making our streets safer for everybody.

The City of Bloomington is a city with vibrant neighborhoods, diverse and hardworking residents, a large university, and a thriving downtown. While Bloomington already has a lot to offer residents and is continually attracting new ones, we know that there is still work to do to make our roadways safer for all those that travel on our roadways, whether on foot, bike, in a vehicle, or on transit.

Between the years 2019-2023, there were 10,391 crashes on Bloomington's streets; 443 of these crashes resulted in either a life-changing injury or death. These crashes, notably, are more than a statistic to track. These crashes forever impact families, friends, and neighbors throughout Bloomington. As a community, we do not accept these crashes as status quo. We are ready to commit to being a better and safer community. We are ready to change.

This Safety Action Plan documents what is happening now and what we commit to do to increase the safety for everybody on all of Bloomington's streets. This plan includes implementable recommendations that we will carry out with community partners and advocates. This plan is our roadmap to our main priority - achieving the goal of zero deaths or serious injuries on our roads by 2039.

We are committed to safer streets in Bloomington. Join us.

Sincerely,

Kerry Thomson

Mayor, City of Bloomington

Between 2019 and 2023, there were 443 fatal or life-altering crashes on Bloomington's streets.

These crashes have permanent and, often, devastating impacts on families, friends, and neighbors throughout the City. As such, the City of Bloomington is committed to implementing projects, programs, and policies that will work to reduce and, eventually, eliminate all serious and fatal crashes from our roadways to ensure that everybody using the City's streets – whether walking, biking, driving, or taking transit – can always reach their destinations safely. Our vision is:

Zero traffic deaths and serious injuries by 2039.

Background

This Safety Action Plan (SAP) is Bloomington's roadmap to achieving our ambitious vision and should be used by City staff, elected officials, community advocates, residents, businesses, and all Bloomington residents committed to safer streets. This Plan includes four major sections:

- **Finding Our Focus.** In creating this Safety Action Plan, the City of Bloomington is joining cities across the country and the world in working to eliminate serious injuries and fatalities from our roadways. This section introduces the concepts of Vision Zero and the Safe Systems Approach, solidifies the relationship between safer streets and equity, and reviews past efforts in the region to improve roadways safety.

- **Setting the Stage.** This section provides an overview of what has historically happened and what is currently happening on our roadways, and how existing policies, programs, and projects impact people throughout the region. This section includes both quantitative and qualitative information about current conditions with a crash data analysis and information gathered through extensive public engagement efforts.

- **Getting to ZERO.** This section lays out programs, policies, and projects that aim to eliminate serious injuries and fatalities on Bloomington's streets by 2039. This section also outlines how these elements should be prioritized in order to be efficient, opportunistic, and effective.

- **Tracking Progress.** This section outlines how the City will measure whether our roadways are becoming safer for all using performance measures, annual reporting, and a crash data dashboard.

Finding Our Focus

Bloomington is joining an ever-growing number of cities throughout the country and world who are committed to eliminating transportation-related fatalities and serious injuries on their streets. This momentum started with the Vision Zero movement and is founded in the Safe Systems Approach.

Vision Zero

Vision Zero is a values-based philosophy that was developed in Sweden in the late 1990s that states that traffic deaths and serious injuries in our transportation systems are avoidable and unacceptable. The Vision Zero movement is one of the first large-scale efforts to look at traffic crashes as a systemic issue, versus blaming individual users. Vision Zero also pivoted from the acceptance of death and serious injuries as just the "cost" of having an efficient transportation system to stating that absolutely nobody should be killed or injured on our streets due to traffic-related causes.

While the Bloomington SAP is not, officially, a Vision Zero effort, much of this plan, its content, and recommendations align with Vision Zero philosophies and actions. More information about Vision Zero can be found at https://visionzeronetwork.org/.

Safe Systems Approach

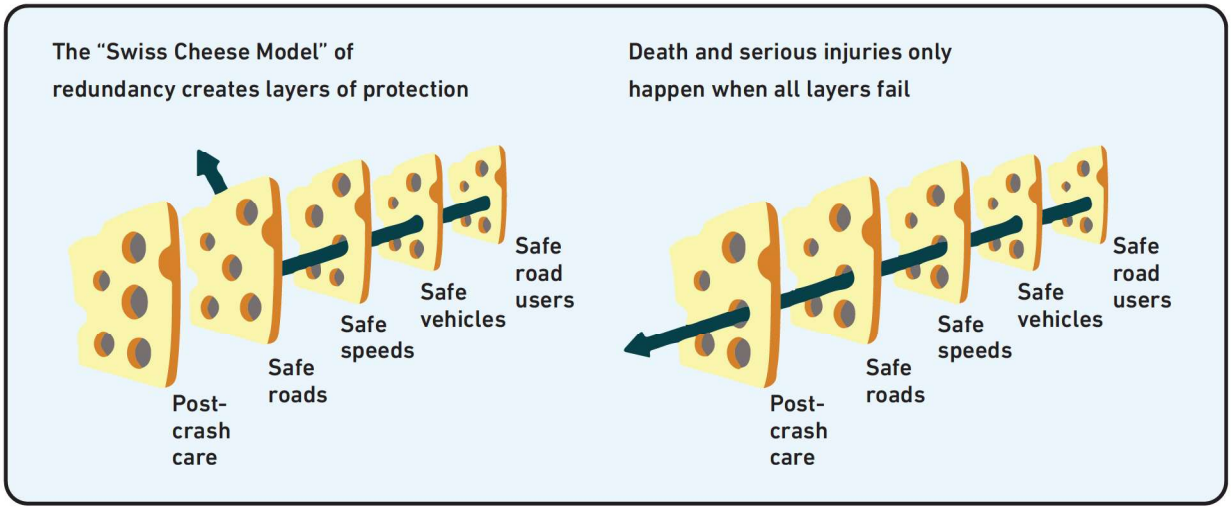
The Safe Systems Approach is founded in the belief that humans are human - people will not always behave perfectly, won't always follow the rules, and may make bad decisions on the roadways. The Safe Systems Approach confronts this reality by creating a multi-faceted system that acknowledges the many contributors to roadway safety outcomes – safe road users, post-crash care, safe roads, safe vehicles, and safe speeds – and works to create safety in redundancy.

This redundant approach means that even if one of these players "fails," there will be multiple other players ready and waiting to ensure that the situation remains safe. For example, if an individual chooses to drive at excessive speeds, the design of the roadway (narrow lanes, separation between vehicles and pedestrians, speed humps, etc.) or other factors are likely to keep all roadway users safe.

The Safe System Approach is comprised of the following elements:

- **Safe Roads** – Design roadway environments to mitigate human mistakes and account for injury tolerance, to encourage safer behaviors, and to facilitate safe travel by the most vulnerable users.
- **Safe Speeds** – Promote safer speeds in all roadway environments through a combination of thoughtful, equitable, context-appropriate roadway design, appropriate speed-limit setting, targeted education, outreach campaigns, and enforcement.

- **Safe Vehicles** – Expand the availability of vehicle systems and features that help to prevent crashes and minimize the impact on both occupants and non-occupants.
- **Safe Road Users** – Encourage safe, responsible driving and behavior by people who use our roads and create conditions that prioritize their ability to reach their destination unharmed.
- **Post-Crash Care** – Enhance the survivability of crashes through expedient access to emergency medical care, while creating a safe working environment for vital first responders and preventing secondary crashes through robust traffic incident management practices.



The Safe Systems Approach has six key principles:

1. Death and serious injury are unacceptable. Although no crashes are desired, the Safe System approach focuses on eliminating crashes where people die or are seriously injured.

2. Humans make mistakes. There is no perfect person, so human error should be expected and anticipated. Human mistakes should not result in life-changing injuries or death.

3. Humans are vulnerable. Human bodies are subject to the laws of physics. They can only withstand so much force before a serious injury or death occurs.

4. Responsibility is shared. Eliminating deaths and serious injuries on our roadways is a team effort. Elected officials, planners, engineers, vehicle designers, police, healthcare providers, emergency medical services. and people traveling need to work together to create a safe roadway network.

5. Safety is proactive. Planners, engineers, and roadway designers know the factors that make streets safe or unsafe – a crash should not need to happen to prove that an area is unsafe. Best practices and research should be used to proactively identify and address dangerous locations.

6. Redundancy is crucial. Even if one part of the transportation system fails, redundancy will be in place to make sure the transportation system stays safe for all users.

Road Safety & Equity

Transportation is a key element of people's daily lives that not only allows them to access their day-to-day needs and activities, but also serves as a place for the community to gather and socially interact. Additionally, transportation systems are complex and comprehensive, often overlapping with other systems, such as housing, land use, utilities, law enforcement, and climate efforts.

Policies and practices surrounding these systems can create inequitable transportation access for black, indigenous, and people of color (BIPOC) communities, those who are low income, and other marginalized groups, often due to a lack of representation and institutional power. Decades of racist policies and planning practices have long-standing and detrimental impacts to these communities in cities across the country.

Nationally, these practices have led specific demographic groups to disproportionately suffer the burdens of transportation systems, and many of these same national trends have likely affected demographically disadvantaged portions of the Bloomington community as well. Some of these burdens include higher exposure to pollution, public health and climate impacts, higher concentrations of traffic crashes, service gaps and inadequate infrastructure, and divisive highway construction. Local governments, like Bloomington, are responsible for reversing these practices and implementing planning practices and policies that respond to the needs of all people.

In developing this Plan, the City was intentional in ensuring the process used and the recommendations that were developed for the plan support the creation of a future equitable transportation network. Specifically, the planning process and the resulting plan was founded in the following principles:

- **Communities of Interest should participate in and influence transportation decision-making and outcomes.** Communities of Interest are defined as areas with populations that have a higher density of eight equity indicators: BIPOC, low-income households, people with disabilities, people with low English proficiency, children, elderly adults, students, and limited vehicle access.

- **One's race, income, physical ability, gender, age, and other demographic characteristics should not determine their safe access** to jobs, healthcare, childcare, education, public amenities, recreation, and quality food.

- **A person's race, income, physical ability, gender, age, and other demographic characteristics should not correlate with negative transportation-related outcomes** related to health, safety, or climate.

- **Safe and adequate sidewalks, bikeways, and trails should be accessible for and welcoming** to people of all cultural backgrounds, ages, and to people with disabilities.

- **The way a person gets around (mode) should not correlate with negative safety or health outcomes, disproportionate climate impacts, or limited access to opportunities.** Planning, maintenance, and funding efforts for different transportation modes, like walking, bicycling, micromobility, driving, carpooling, or public transportation should be prioritized in Communities of Interest first while considering community goals and overall system needs.

• **Public investments, safety improvements, and other transportation policies and programs in areas vulnerable to displacement should be paired with anti-displacement strategies** to empower residents to stay in their homes, encourage small businesses to remain in place, and strengthen the character of the community or neighborhood.

More information about how and why equity is foundational to this Safety Action Plan can be found in **Appendix A: Safe Streets for All Equity Framework.**

Crosswalk at Walnut Street and 6th Street

What We've Already Done

This Plan is a major step in demonstrating the City of Bloomington's commitment to safer streets for all its residents. That said, this is not the first time the City or the region has created a plan, actions, policies, or programs that address roadway safety. The following table highlights many of Bloomington's past efforts and the roadway safety topics they touched upon.

Document Name	Safety Vision or Goals	Safety Data	Safety Actions	Equity	Roadway Design/ Countermeasures	Projects/ Priority Corridors	Funding/ Implementation
City of Bloomington Transportation Plan	x	x	x	x	x	x	x
City of Bloomington Comprehensive Plan	x		x	x			
City of Bloomington Climate Action Plan	x		x	x	x		x
City of Bloomington Bicycle and Pedestrian Transportation and Greenways System Plan	x	x	x	x	x	x	x
Bloomington, Indiana TDM Program Plan					x		x
City of Bloomington Right-of-Way Permitting					x		
City of Bloomington Capital Improvement							x
City of Bloomington Zoning Districts							
City of Bloomington Unified Development Ordinance					x		
City of Bloomington Boards and Commissions Structure							
City of Bloomington Traffic Calming and Greenways Program	x	x	x	x	x	x	x
City of Bloomington Scooter Guidelines	x		x			x	
City of Bloomington Sidewalk Repair Assistance Program	x		x			x	x
BMCMPO Transportation Improvement Program					x	x	x
BMCMPO Complete Streets Policy	x		x	x	x		x
Indiana Safe Routes to School Guidebook	x	x	x	x	x		x

Table 1: Summary of Actions and Considerations within Reviewed Documents

Setting The Stage

There are many factors that contribute to how safe a city's streets are – design, operation, and user behaviors all play important roles and must be understood in order to make them better. This section describes the results of these factors on Bloomington's roads today using both quantitative and qualitative measures – a crash analysis and extensive public feedback, respectively. These methods were used to understand what the data says about what's happening on our streets.

Crash Analysis

Crash data is one of the best tools we have to understand how and where people are severely injured or killed while traveling on Bloomington's streets. If the crash is reported to police, a report is generated that details crash characteristics like the location, contributing crash factors, and demographic information such as the gender and age of those involved.

The crash analysis conducted for Bloomington used data from the Indiana Department of Transportation (INDOT) for the most recent five years (2019 through 2023). It should be noted that while the data is the best available, it represents crashes that are reported to local law enforcement agencies, which makes it an incomplete picture because some crashes may not be reported (due to avoiding interactions with law enforcement, especially for those with past negative interactions with police, such as People of Color). Additionally, the report may not be accurate – severity may be underreported because the reporter may not have medical training, and some factors (such as speed or the reasons for the crash) are challenging to determine after the crash has happened. That said, crash data, while imperfect, is a valuable starting point in understanding current conditions. The following are key takeaways from Bloomington's crash analysis.

Vehicle-only crashes are the most common, but the risk of serious injury of death is much higher for crashes involving people walking, biking, or rolling. Only 4% of total crashes involve somebody walking, biking, or rolling, but over 38.5% of fatal crashes and 24% of serious injury crashes involve people using these modes.

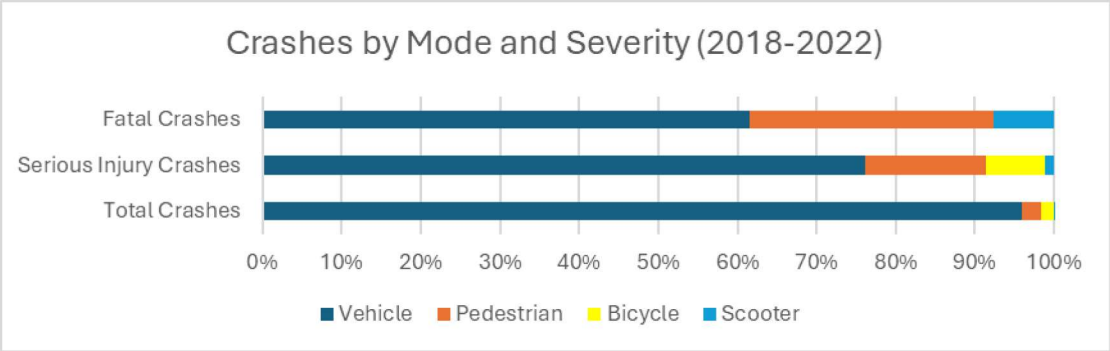


Figure 2. Crashes by Mode and Severity, 2019-2023

The majority of fatal or serious injury crashes occurred on arterial streets and state highways. There were 262 fatal or serious injury crashes on arterial streets or state highways (60% of all fatal or serious injury crashes). Arterial streets and state highways make up only 20% of the City's roadway mileage. Figure 9 shows the classification of all streets in Bloomington for reference.

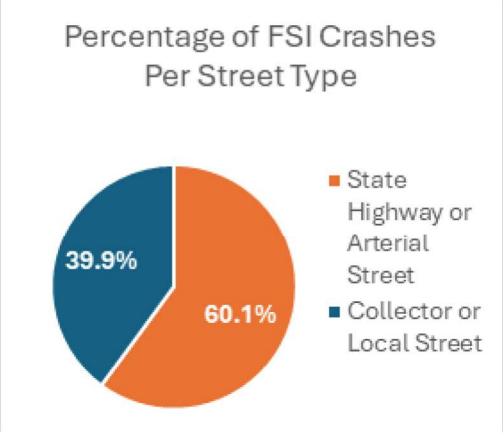


Figure 3. Percentage of FSI Crashes by Type of Street/ Highway

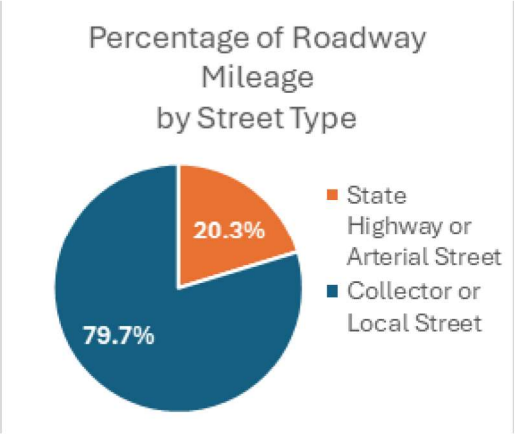


Figure 4. Percentage of Streets by Type of Street/ Highway

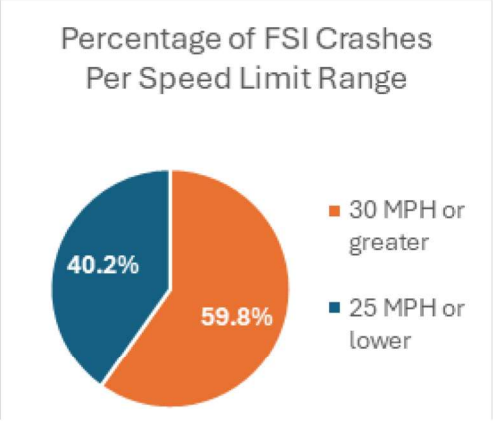


Figure 5. Percentage of FSI Per Speed Limit Range

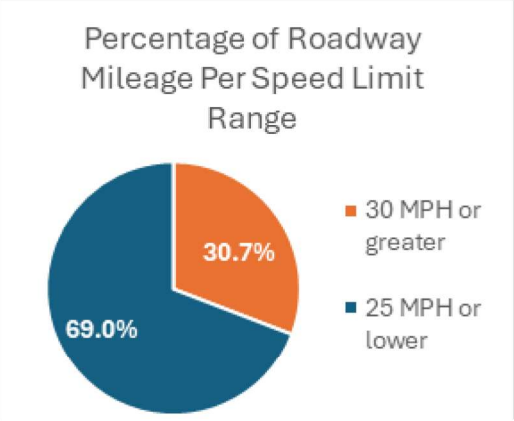


Figure 6. Percentage of Roadway Mileage Per Speed Limit Range

Fatal and Serious Injury Crashes 2019-2023

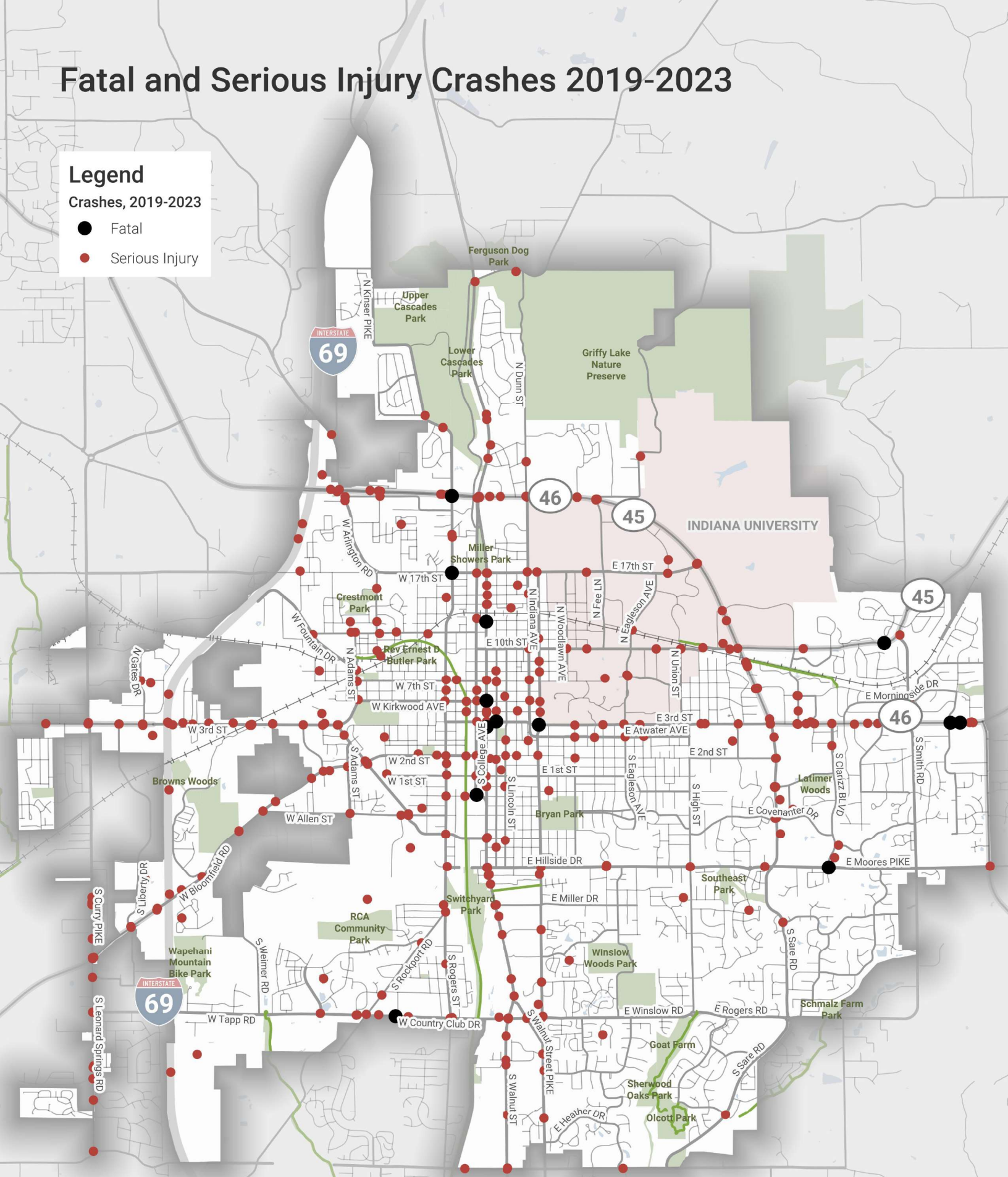


Figure 7. Location of Fatal or Serious Injury Crashes, 2019-2023

The streets in Bloomington with the largest clusters of fatal and serious injury crashes are:

- State Highway 45/46 (aka the Bypass)
- West 3rd Street
- East 3rd Street
- North Kinser Pike
- College Avenue
- Walnut Street
- South College Mall Road
- West Country Club Road/East Winslow Drive
- North and South Indiana Avenue
- Bloomfield Road
- Leonard Springs Road

These streets tend to have speed limits of 30, 35, 40, or 45 MPH and tend to have four or more lanes if they are two-way or two or more lanes if they are one-way. All of these streets are either INDOT state highways or City-owned arterials. Figure 8 and Figure 9 on the following pages show the speed limit and functional class of streets in Bloomington.

Community Advisory Committee Members Discussing The New Pedestrian and Bicycle Crossing on E 3rd Street

Street Functional Class

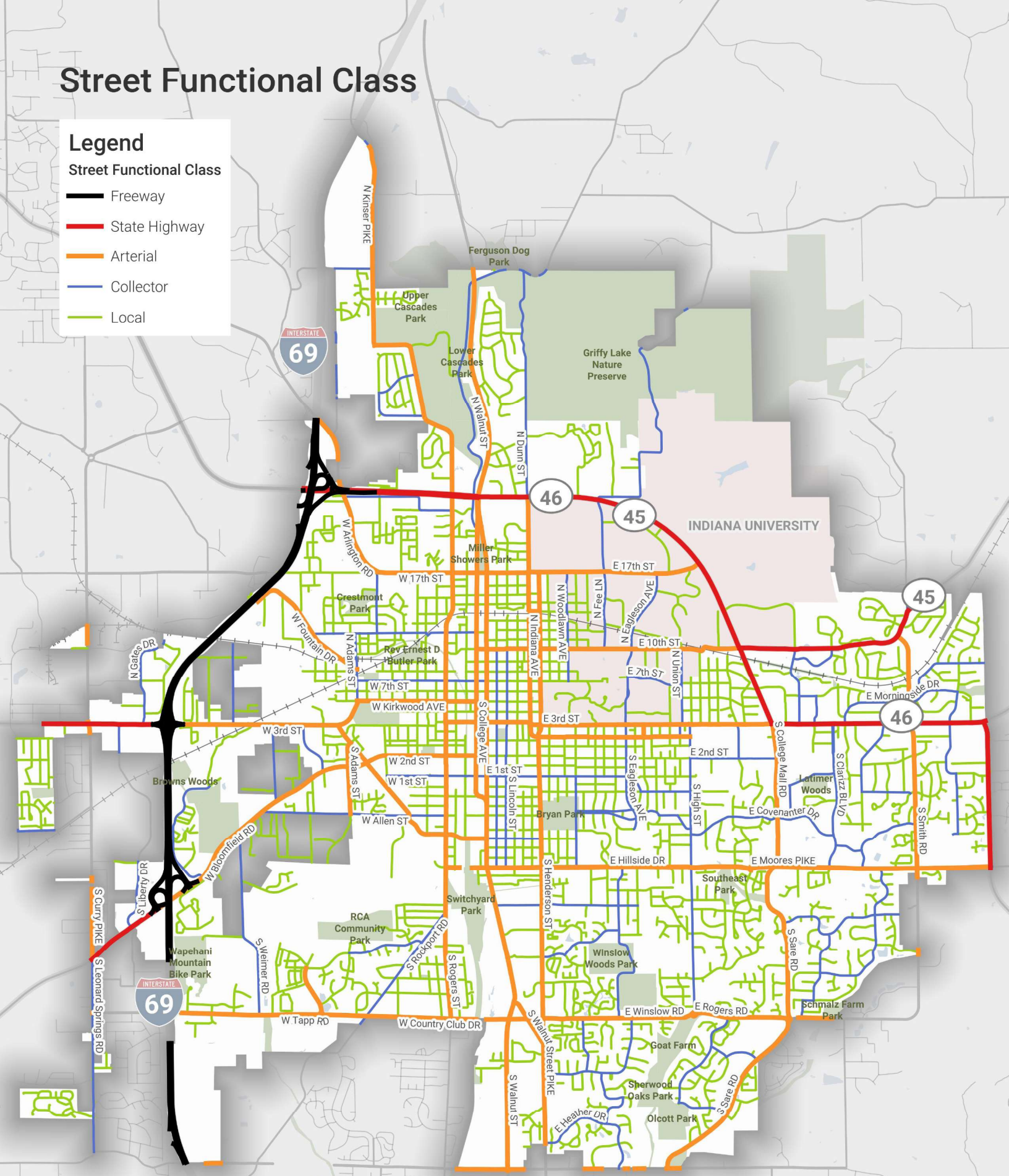


Figure 9. Functional Class of Streets in Bloomington

NOTE: Note: Functional classifications shown above are not intended to override those provided in the Transportation Plan.

Rear-end and right angle crashes ("T-bone crashes") are the leading fatal and serious injury crash types for people driving on Bloomington's streets. "Failure to Yield the Right of Way" was the most common leading contributing factor for these same crashes. For crashes involving pedestrians or people riding scooters, "other" is the most common listed crash type. This crash type typically has more detailed information listed in the narrative of the crash report, however, this data was not available in the crash dataset used for analysis.

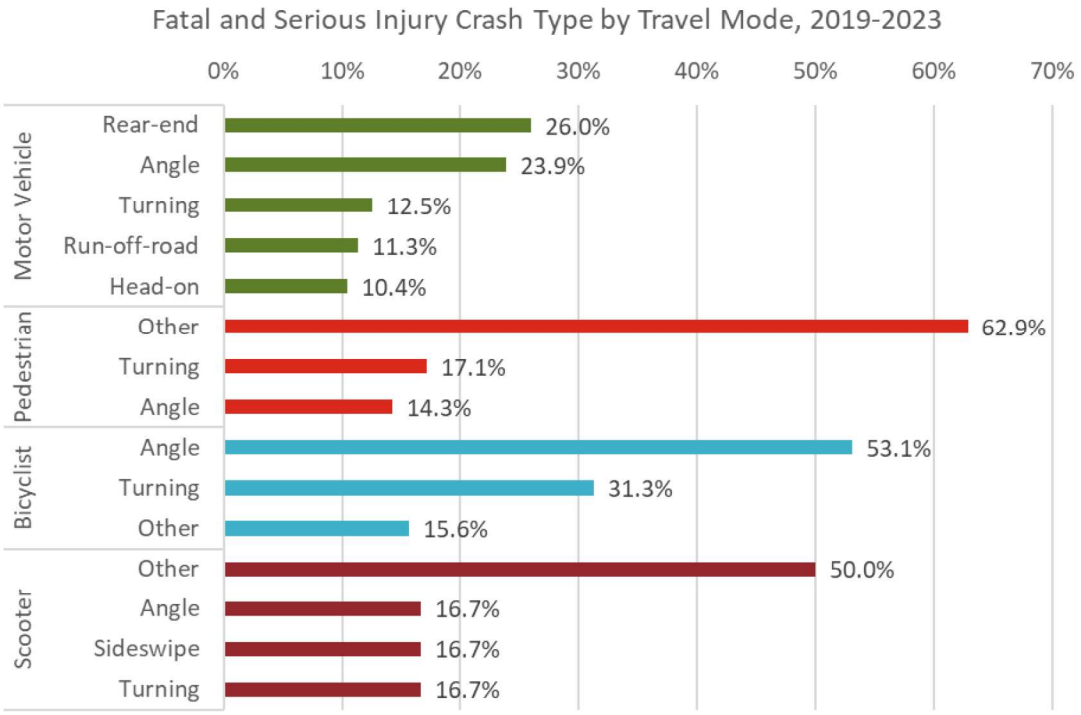


Figure 10. Crash Type by Mode of Travel for Fatal and Serious Injury Crashes, 2019-2023

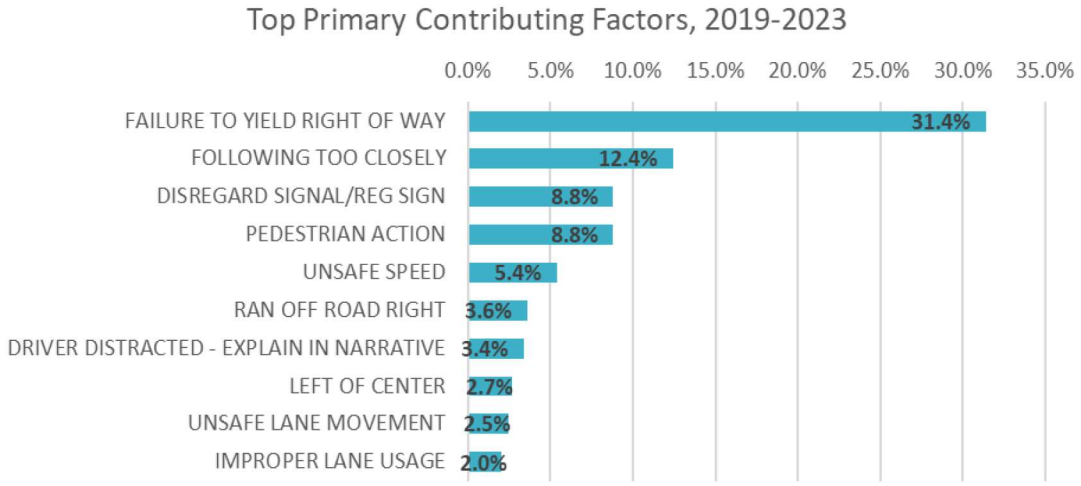
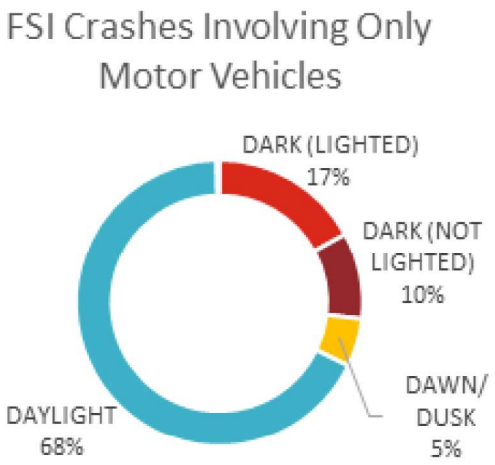
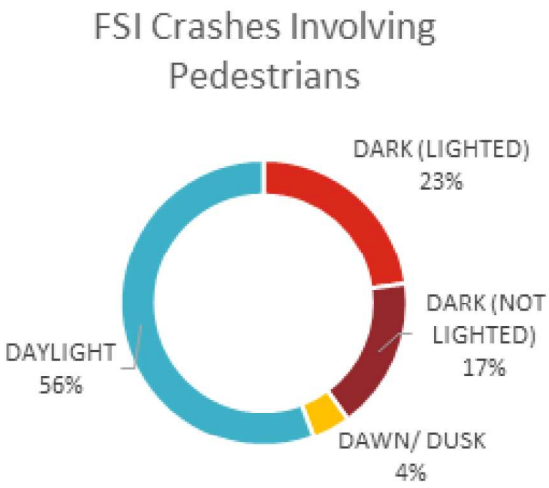
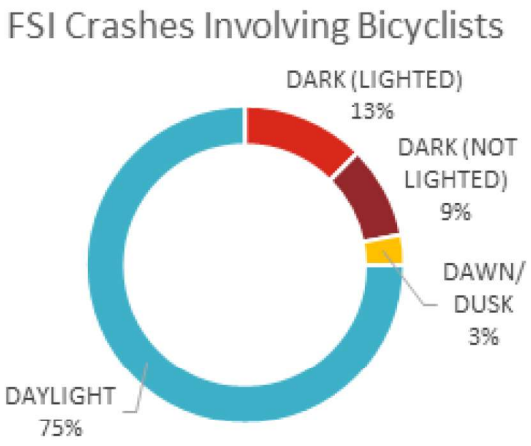


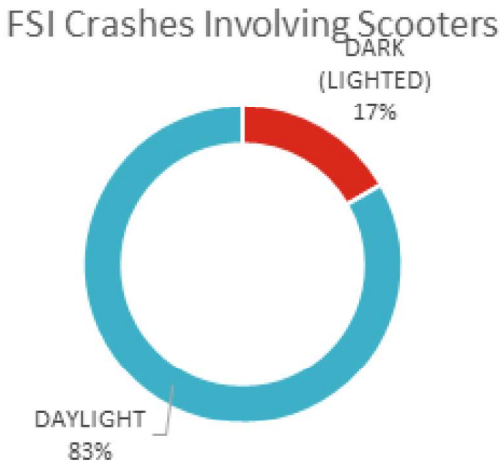
Figure 11. Top Primary Contributing Factors for Fatal and Serious Injury Crashes, 2019-2023

40% of fatal and serious injury crashes from 2019-2023 that involved a pedestrian were at night. This follows national crash trends in which darkness commonly elevates risk, especially for pedestrians, due to reduced visibility and increased vehicle speeds at night, among other reasons.









High Injury Network

The City of Bloomington developed a High Injury Network to determine where to focus transportation safety projects in the future in order to reach zero fatal or serious injury crashes.

A High Injury Network is a map of streets that have the highest frequency of fatal and serious injury crashes. These locations are candidates for safety improvements as part of a data-driven, reactive safety program. By targeting these high injury locations with the Safe Systems Approach, we can be sure that our investments will produce strong results for our road users.

Method

High Injury Networks were created using fatal and serious injury (FSI) crashes from the years 2019 through 2023. Roads were analyzed using a sliding windows analysis. A sliding windows analysis uses a 1/2 mile "window," that "slides" in 1/10 mile increments, counting the crashes that fall within that window by crash score and assigning a score to each 1/10 mile segment as shown in Figure 12 below. Crashes which occurred near intersections were assigned to all intersection approaches within 30 feet to account for corridor patterns that traverse intersections.

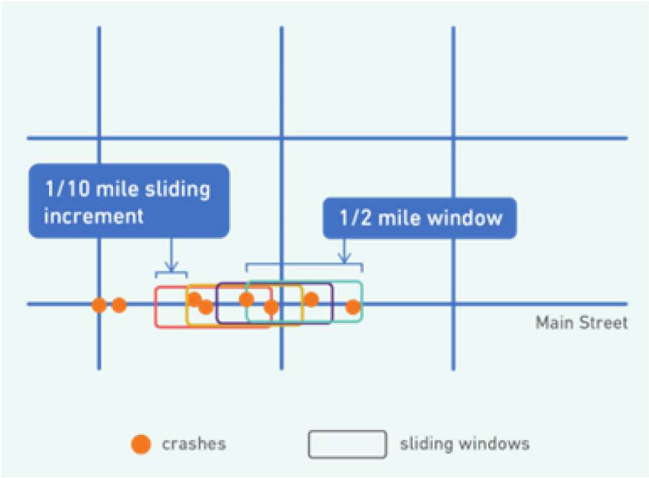


Figure 12. High Injury Network - Sliding Windows Analysis

Results

All analysis results are summarized in the following maps. Each map below visualizes the top 15% of crash locations based on their respective scores. The scores are calculated for the 2019 through 2023 study period, showing a segment length-weighted average of FSI crashes on each roadway segment using a sliding window approach. This smooths the crash data, allowing us to interpret crashes, which occur at discrete locations along continuous roadways. Results are summarized in a series of maps as follows:

- **All Mode FSI Crash Score:** Total number of fatal or serious injury crashes of any mode. (Figure 12)
- **Motor Vehicle FSI Crash Score:** Total number of fatal or serious injury crashes involving only motor vehicles. (Figure 13)
- **Pedestrian FSI Crash Score:** Total number of fatal or serious injury crashes involving pedestrians. (Figure 14)
- **Bicyclist FSI Crash Score:** Total number of fatal or serious injury crashes involving bicyclists. (Figure 15)
- **Scooter FSI Crash Score:** Total number of fatal or serious injury crashes involving people riding scooters. (Figure 16)
- **Vulnerable Road User FSI Crash Score:** Total number of fatal or serious injury crashes involving pedestrians and bicyclists. (Figure 17)

Some of the top High Injury Network corridors include:

- State Route 45/46
- East 3rd Street
- West 3rd Street
- Walnut Street
- College Avenue
- West Country Club Drive

High Injury Network - All Modes

Legend

High Injury Network Limited to Top 15% of Scoring for All Modes

Darker linework reflects higher (worse) scoring

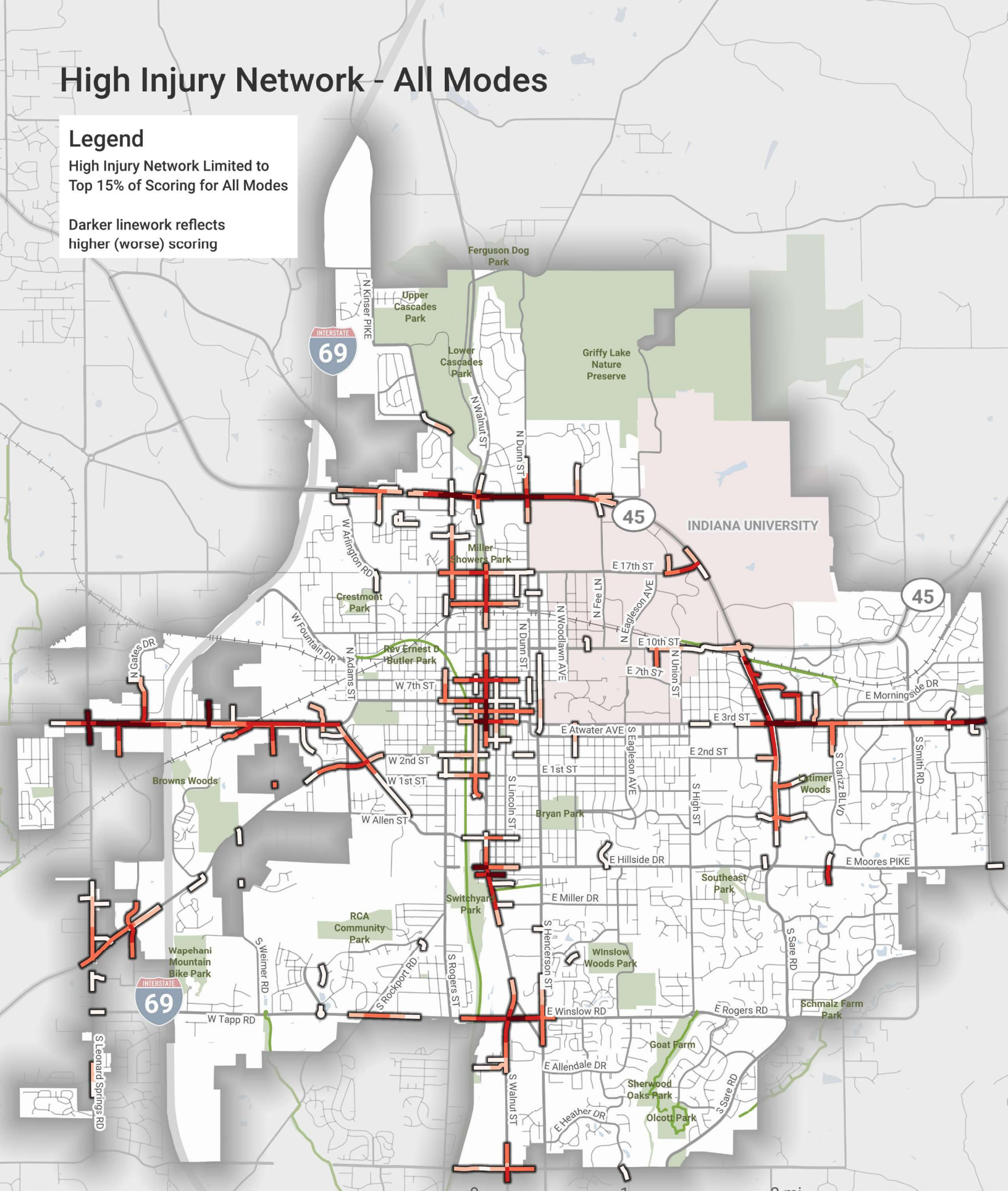


Figure 12. High Injury Network - All Modes

High Injury Network - Motor Vehicle Crashes Only

Legend

High Injury Network Limited to
Top 15% of Scoring for
Crashes Involving Only Motor Vehicles

Darker linework reflects
higher (worse) scoring

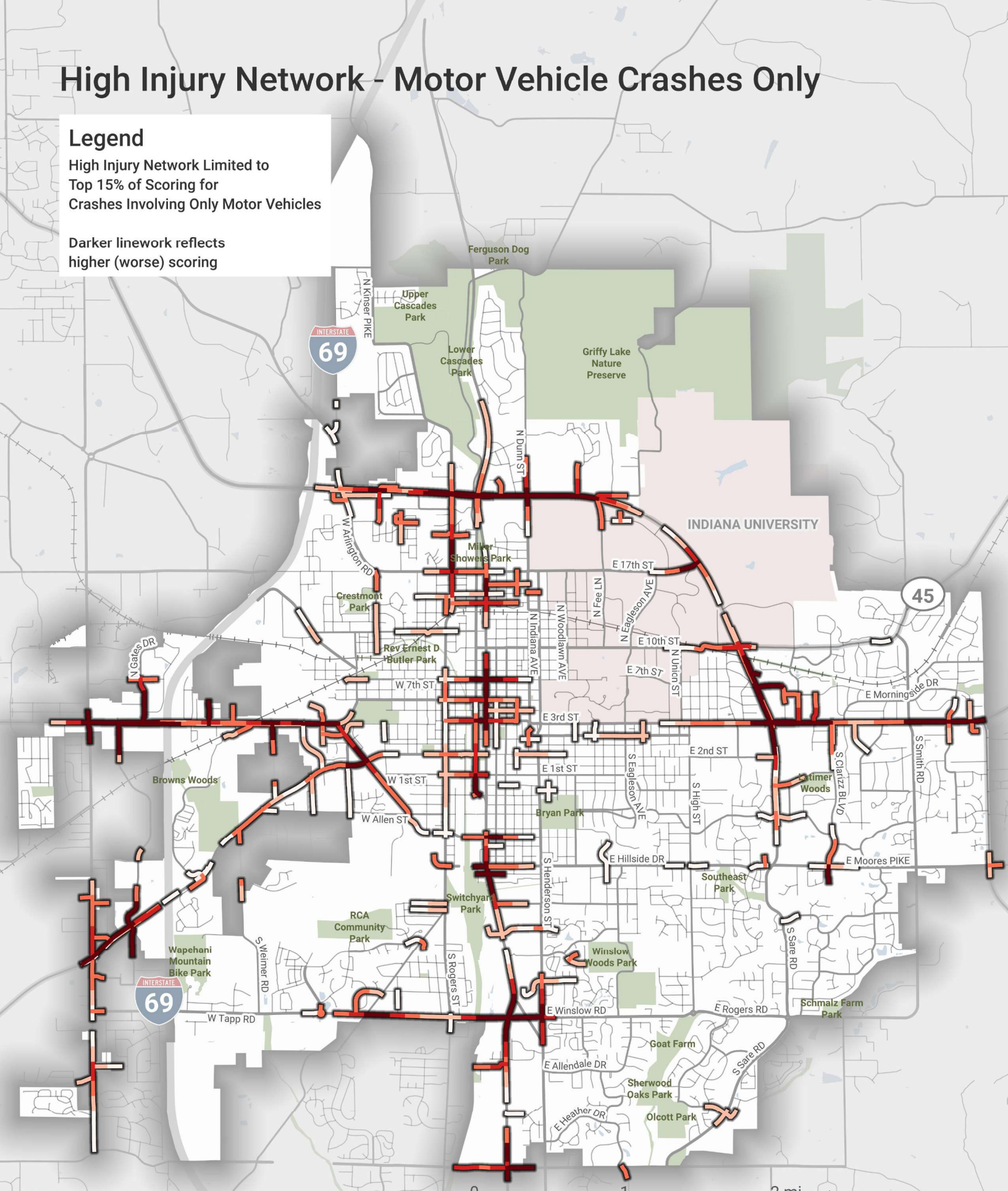


Figure 13. High Injury Network - Motor Vehicle Crashes

High Injury Network - Pedestrian Crashes

Legend

High Injury Network Limited to Top 15% of Scoring for Crashes Involving Pedestrians

Darker linework reflects higher (worse) scoring

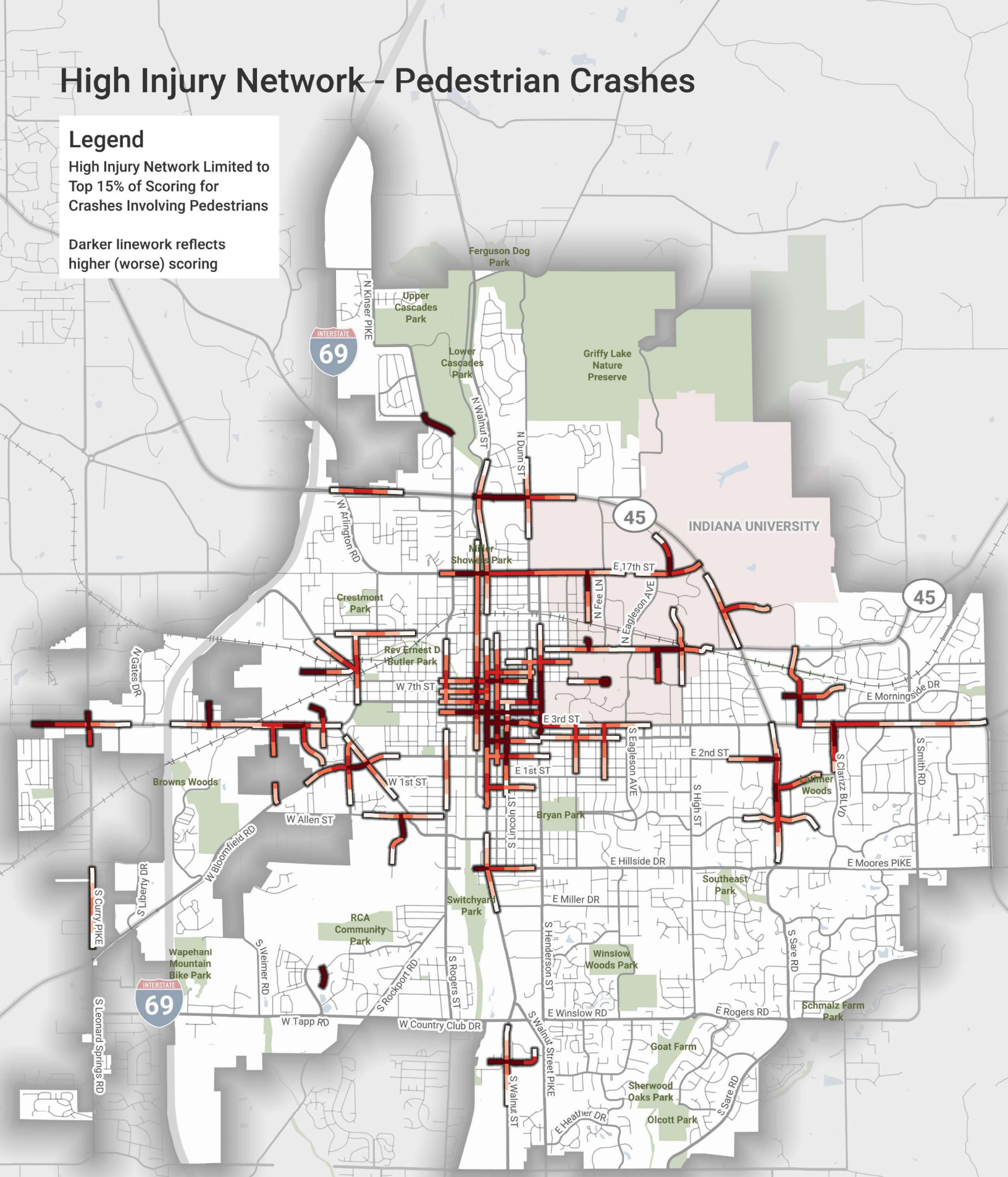


Figure 14. High Injury Network - Pedestrian Crashes

High Injury Network - Bicyclist Crashes

Legend

High Injury Network Limited to Top 15% of Scoring for Crashes Involving Bicyclists

Darker linework reflects higher (worse) scoring

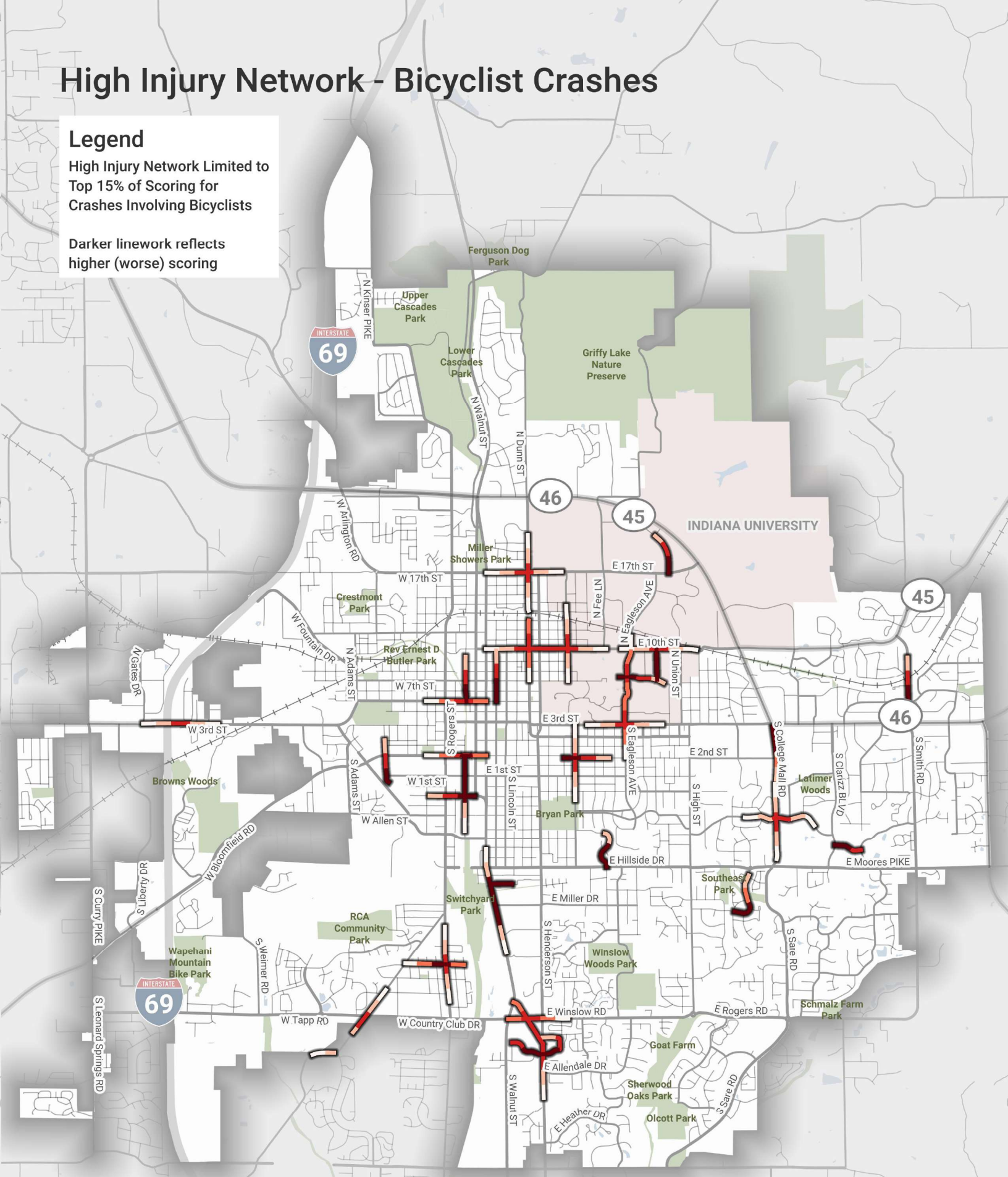


Figure 15. High Injury Network - Bicyclist Crashes

High Injury Network - Scooter Crashes

Legend

High Injury Network Limited to Top 15% of Scoring for Crashes Involving Scooters

Darker linework reflects higher (worse) scoring

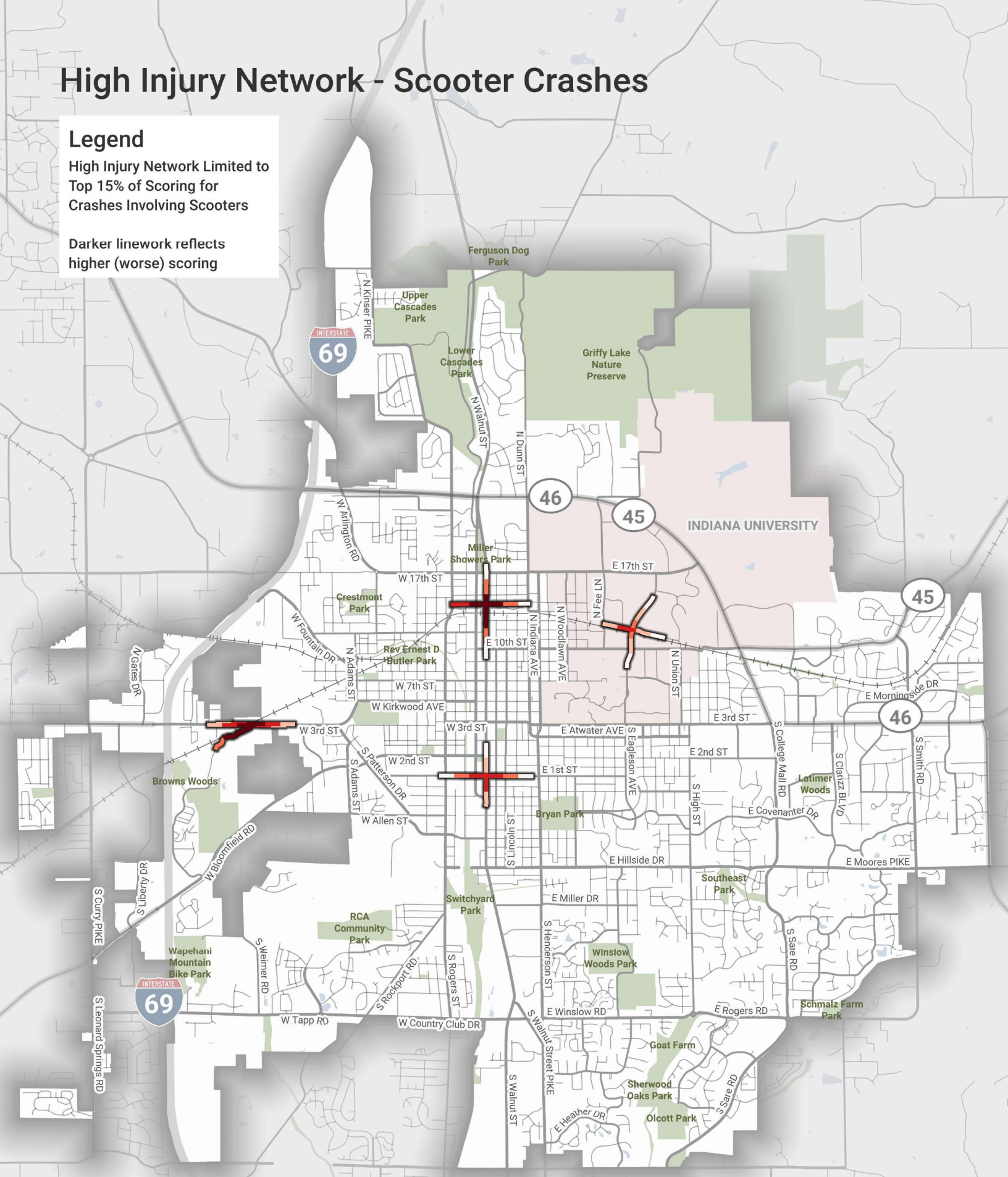


Figure 16. High Injury Network - Scooter Crashes

High Injury Network - Vulnerable Road User (Pedestrian, Bicyclist, and Scooter)

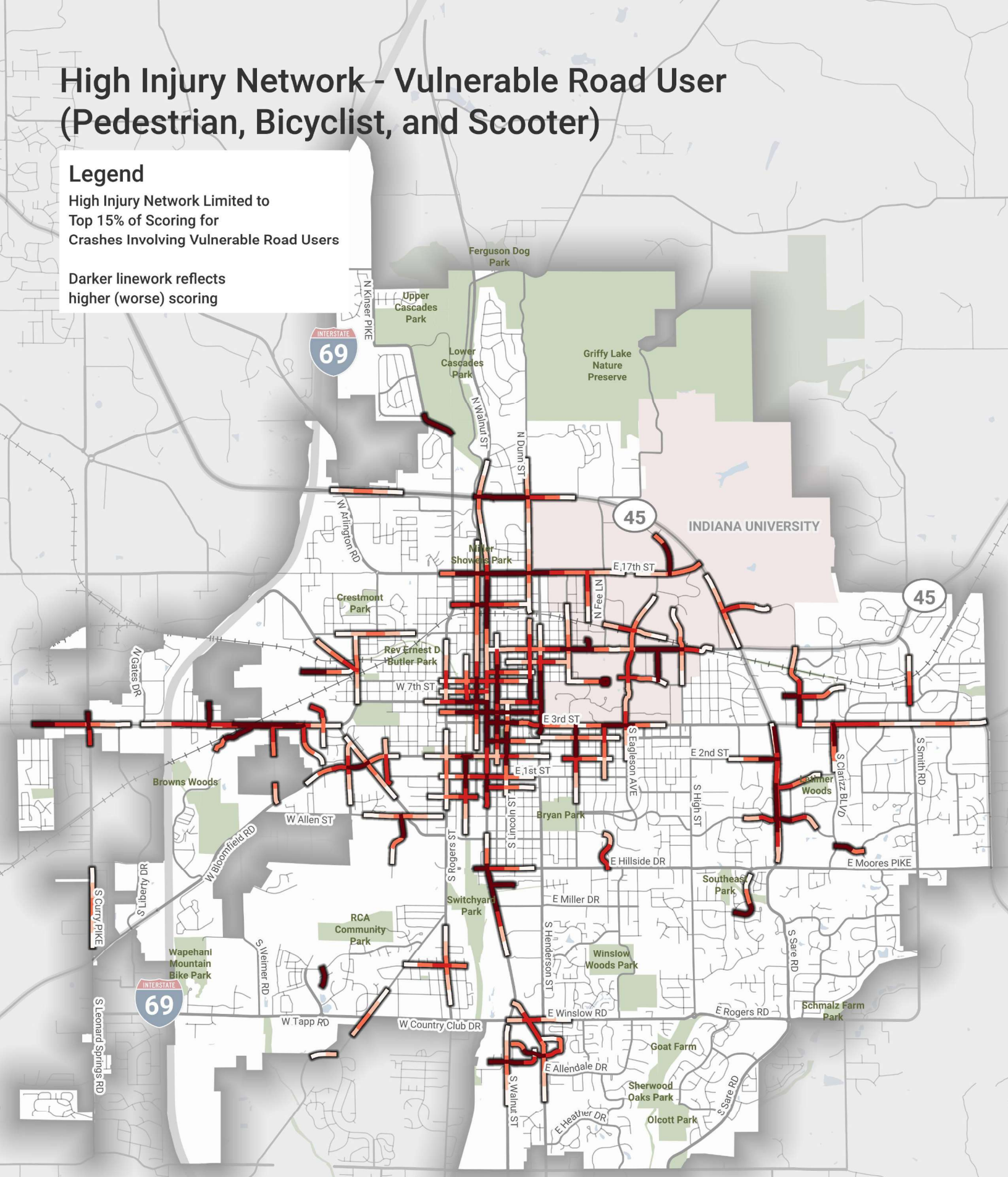


Figure 17. High Injury Network - Vulnerable Road Users (Pedestrian, Bicyclist, and Scooter)

High Risk Network

In addition to the High Injury Network analysis, which looks backwards in time at the locations of crashes historically, the City of Bloomington also developed a High Risk Network (HRN). High Risk Network analysis highlights roads that have similar designs, land use patterns, or population characteristics with roads on the High Injury Network. In other words, the High Risk Network is a proactive, systemic assessment of where fatal and serious injuries are likely to occur in the region. These roads are candidates for safety improvement as part of a data-driven, proactive safety program. This is a key aspect of the Systemic Safety Approach which requires agencies to think critically about where crashes could occur in the future based on systemic risk – even if very few or no severe crashes have occurred in those locations in the past.

Method

For this High Risk Network analysis, roadways were analyzed using the facility profile analysis methodology, which identifies unique combinations of roadway design and contextual attributes which correlate with elevated crash risk. The analysis produces a risk score for each roadway segment based on the frequency of crashes observed at similar facilities across the study area, representing the average number of crashes at comparable facilities during the study period. All facilities are categorized into one of five tiers based on their relative risk score, namely Critical, High, Medium, Low, and Minimal. Attributes considered in the analysis include:

- **Roadway Class:** Major Road (functional class of minor arterial and above or major/ primary local roads) or Minor Road (all others).
- **Lane Configuration:** Two-lane or Multilane.
- **Setting:** Urban or Rural context.
- **Traffic Volume:** Average annual daily traffic (<1,000 vehicles per day (vpd), 1,000-10,000 vpd, or 10,000+ vpd).
- **Speed Category:** Posted speed limit (≤30 MPH, 35-45 MPH, or 50+ MPH).
- **Percent Zero Vehicle Households:** Percent of households within the census block group which have zero vehicles.
- **Percent of Residents in Poverty:** Percent of population within the census block group at or below 2X the poverty level.
- **Percent Younger Residents:** Percent of population within the census block group below the age of 18.
- **Percent Older Residents:** Percent of population within the census block group age 65 years or older.

• **Percent Disabled Residents**: Percent of population within the census block group with a disability.

• **Housing Cost Burden:** Percent of households within the census block group which spend more than 30% of income on housing.

• **Transportation Access**: Equitable Transportation Communities data transportation access subcomponent score.

Results

The analysis results are shown in a map in Figure 18. This map visualizes the Critical and High tier facilities. These streets have a higher average fatal and serious injury crash per mile rate than other streets in Bloomington.

A Recently-Constructed Pedestrian and Bicyclist Crossing at the Walnut and Allen St Intersection

High Risk Network Facility Profile Analysis

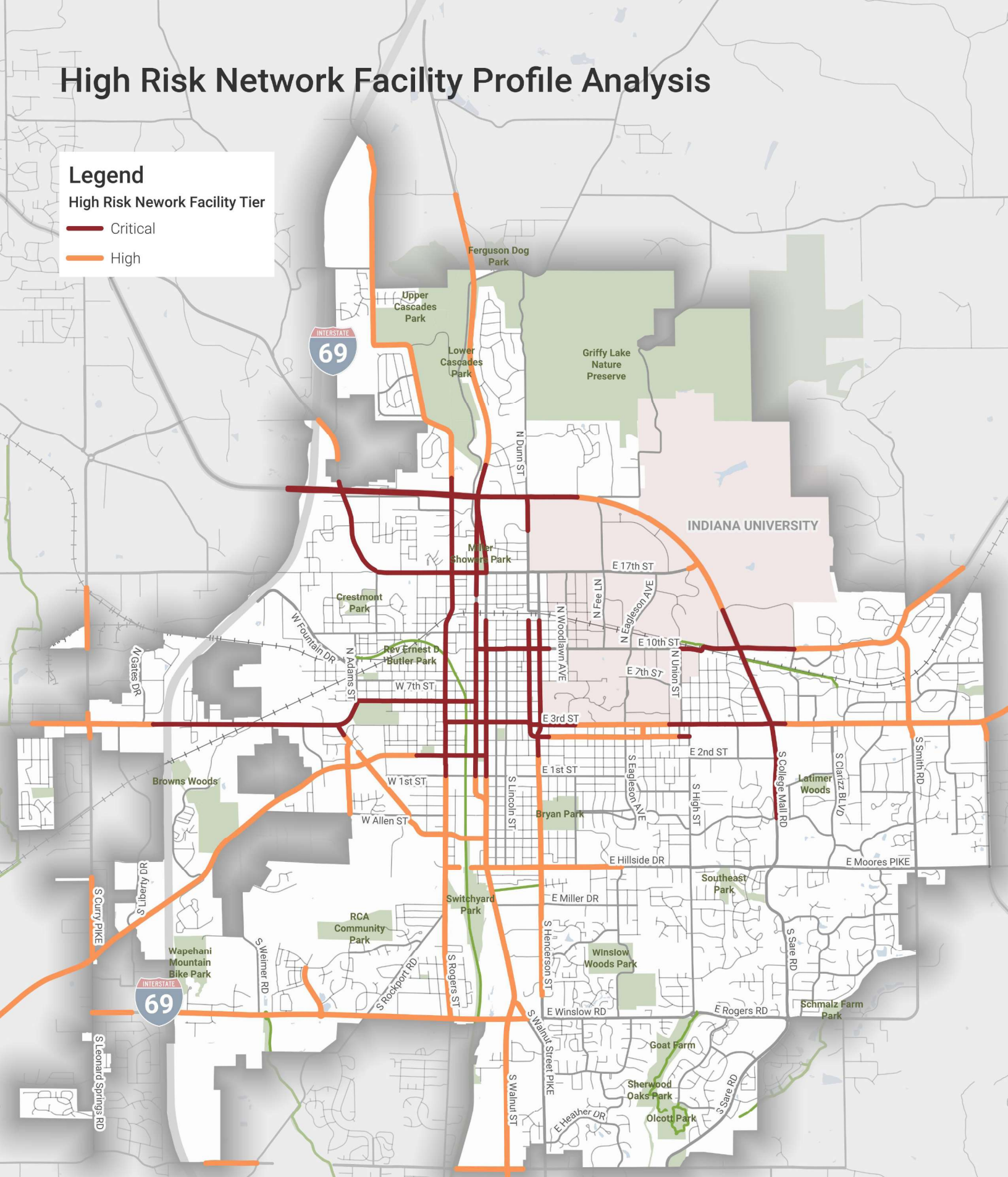


Figure 18. High Risk Network - Facility Profile Analysis

TOOLE DESIGN

Voices of Bloomington

People's feelings and opinions around street safety are formed through a combination of personal experience, conversations and stories within their communities, and perceptions. It's invaluable to understand these feeling and thoughts about street safety because any recommendation or project that results from this plan will aim to not only factually improve the safety of Bloomington's streets, but also increase people's feelings of safety as they walk, bike, roll, ride a scooter, drive, or take transit around the city.

A wide variety of public engagement opportunities were provided to gather residents' thoughts and opinions on transportation safety in Bloomington as part of this project. Over 400 residents submitted more than 1,000 unique responses via an interactive webmap, and nearly 2,000 additional residents participated in a one-week citywide public participation blitz that included 13 pop-up stations, three evening events, eight classroom visits, walking tours, and public meetings at various locations throughout the City. These strategies were designed to hear from a wide variety of Bloomington's residents, with intentional efforts made to get feedback from those that are overrepresented in traffic crashes but often underrepresented in public engagement efforts – youth and seniors, low-income individuals, people who walk and bike, and People of Color.

This public outreach was complemented by a project steering committee that was made up of members of different City commissions (Parking, Community Accessibility, Bicycle and Pedestrian Safety, and Traffic), City Council, and MPO staff. Project staff met with this group regularly during the project at key decision points to get feedback and recommendations for going forward. More detail on the engagement efforts can be found in **Appendix B: Public Engagement Overview.**

While the project team had various conversations on a wide array of topics during our engagement effort, a few important themes stood out that were invaluable as we created this plan's recommendations:

• **Distracted driving and people driving too fast were, by far, the top two factors that make people feel unsafe on Bloomington's streets.** These factors were followed by people not yielding at intersections and the lack of safe places for bicyclists. It should be noted, however, that different locations resulted in different distributions of responses. For example, at a pop-up held at Tri-North Middle School, a much higher percent of participants selected "fear of physical or verbal harassment" as one of their top concerns. This variation is likely due to middle school students mostly being on foot, bike, or scooter and, in general, feeling threatened by adults.

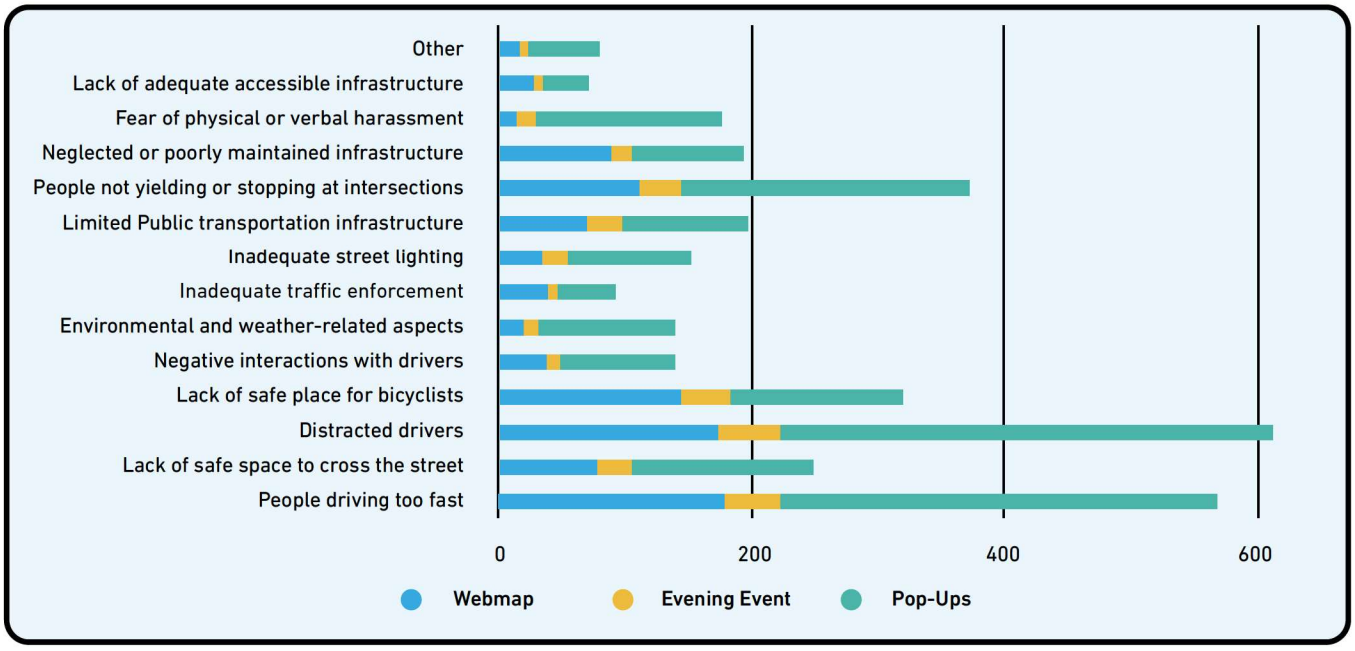


Figure 19. Responses to "What are the top three things that make you feel unsafe on Bloomington's Streets?"

• **Residents think is it very important to invest in a safe and comfortable transportation system.** Nearly all participants answered "very important" to our posed question. Very few selected "not important" as their answer.

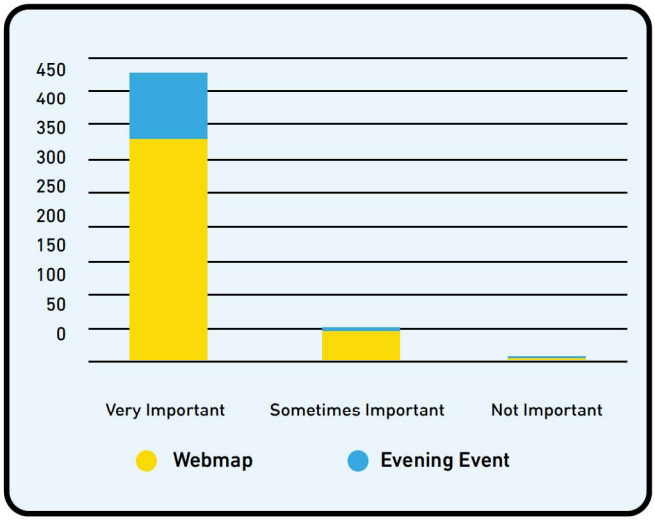


Figure 20. Responses to "How important do you think it is to invest in a safe and comfortable transportation system in Bloomington?"

• **Most residents are willing to make trade-offs for the sake of safety** That said, many participants admitted that they don't usually drive at or below the speed limit which shows that people are in support of safety, in theory, but may need more than a speed limit to encourage them to drive at safe speeds.

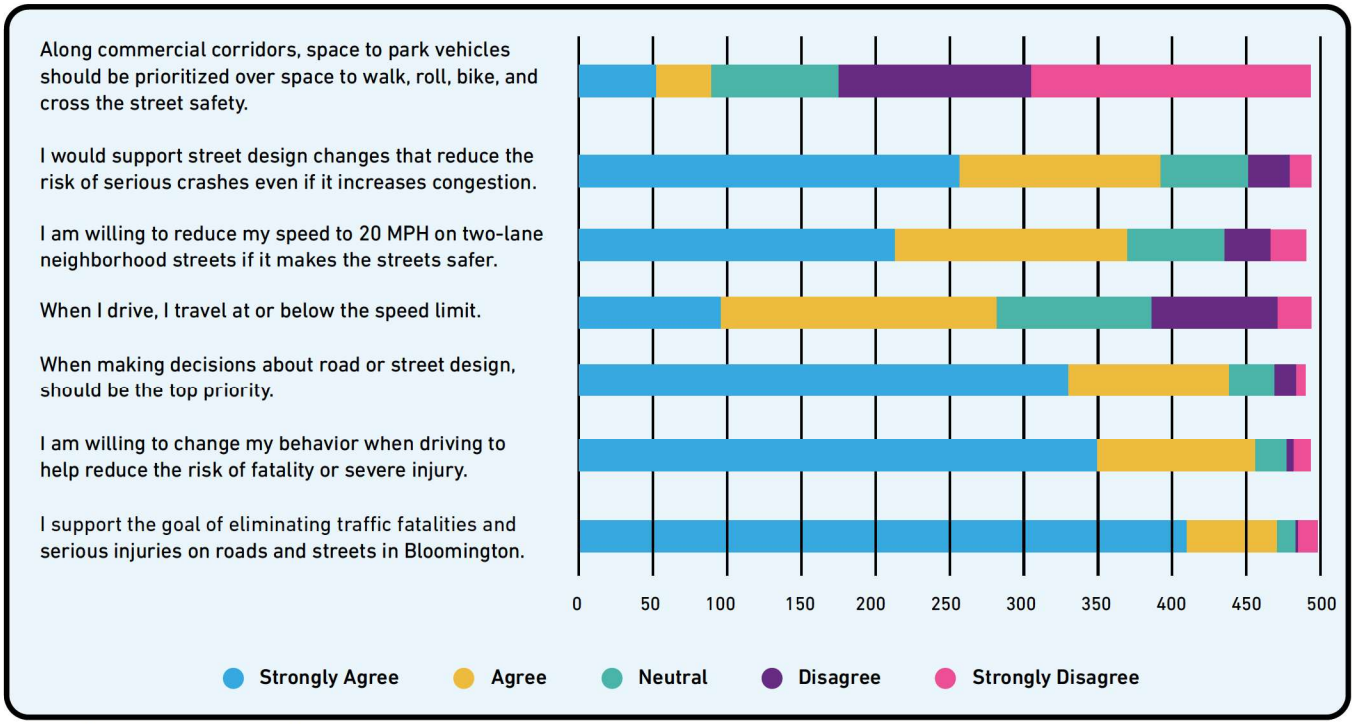


Figure 21. Results to trade-off questions

• **The feelings of safety differ dramatically depending on how one navigates the City.** In general, respondents felt safe while driving or on transit. Walking was the next "safest," with a very small amount of respondents saying it feels "very unsafe." Feelings of safety dramatically dropped from there with less than a quarter of people feeling safe while biking or in a wheelchair. Notably, nobody responded that they felt "very safe" on a scooter.

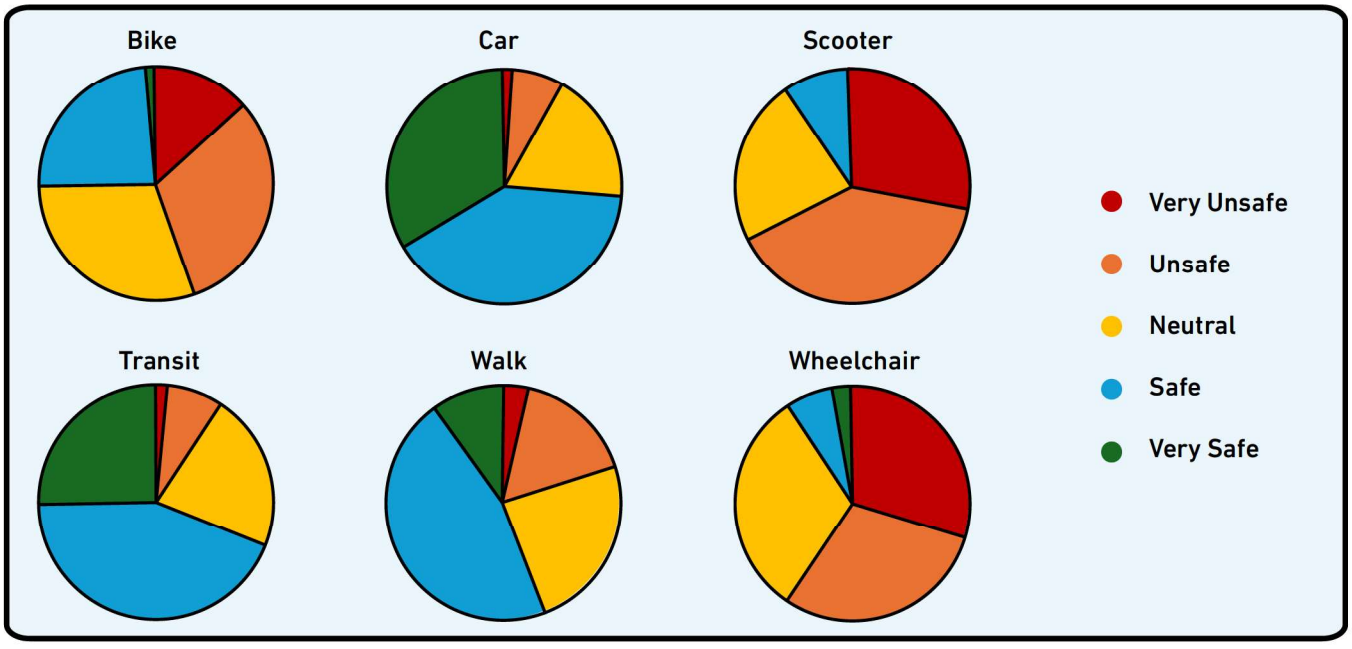


Figure 22. Responses to "Generally, how safe do you feel traveling around Bloomington walking, rolling, biking, scooting, driving, or taking transit?"

• **More separation between modes makes everybody feel safer.** Respondents that walk or bike want more separation between them and vehicles, better maintained facilities, and more sidewalks, bicycle lanes, or trails in the community. For people biking, more secure bicycle parking and better wayfinding were also common selections. For pedestrians, participants selected better lighting and more accessible infrastructure as items that would make them feel safer.

Interestingly, participants selected "more space separating people bicycling from car traffic" and "better road maintenance" as the top two items that would make them feel safer while driving, which is nearly identical to the responses of pedestrians and bicyclists. Reducing driving speeds using speed bumps or lane reductions, and better or more visible signs were the next most common answers.

For transit riders (which had less responses than questions for walking, rolling, biking, and driving), participants highlighted improvements at transit stops, especially adding more pedestrian crossings and/or signals near stops. Adding more shelters was the second most common choice, followed by the desire to increase lighting around transit stops.

What would make you feel safer when walking or rolling?	# of Responses
More space separating people walking from car traffic	402
More sidewalks or trails	267
Better maintenance of sidewalks and trails	241
Better lighting of sidewalks, trails, and roads	176
More accessible infrastructure (curb-ramps, wheelchair access, wider sidewalks, etc.)	113
Additional signs or signals at intersections	94
Additional police presence	51
Other	48
Better wayfinding so I know where to go	21

What would make you feel safer when biking?	# of Responses
More space separating people bicycling from car traffic	243
More bicycle lanes or trails in the community	236
Better maintenance of bicycle lanes and trails	136
More secure bicycle parking	91
Additional signs or signals at intersections	82
Better lighting of trails and roads	73
Other	44
Better wayfinding so I know where to go	26
Additional police presence	19

What would make you feel safer when driving?	# of Responses
Better road maintenance	235
More space separating people bicycling from car traffic	219
Increased street lighting	153
Reducing driving speeds using speed bumps or reducing the number of lanes	134
Lowering speed limits	130
Better or more visible signs so I know where to go	106
Other	78
Additional police presence	64
Increasing the number of traffic signals	36

What would make you feel safer when taking transit?	# of Responses
Adding more shelters at transit stops	151
Increasing lighting around transit stops	145
Having more pedestrian crossings and/or signals near transit stops	133
More route information so I know where to go	117
Additional signs or signals at intersections	82
Better lighting of trails and roads	73
Other	44
Better wayfinding so I know where to go	26
Additional police presence	19

Community Members Discussing Their Safety Concerns at a Pop-Up Location

• **The presence of walking and cycling facilities, such as sidewalks, bicycle lanes, and crossings, make a location feel safe. Fast driving speeds are the top reason areas feel unsafe.** Respondents feel safe near the B-Line Trail or 7-Line, and other places where there are many other pedestrians and bicyclists (e.g. Switchyard Park, Bryan Park, Kirkwood Ave.). Respondents identified arterial and collector roadway segments (such as College Avenue, Walnut Street, and East 3rd Street) and areas where a higher degree of bicycle and pedestrian traffic occurs (adjacent to downtown and Indiana University) as areas where they feel unsafe.

"This Location is Safe Because"	Count	"This Location is Unsafe Because"	Count
There are bicycle lanes or space for bicyclists	79	People drive too fast	392
There are sidewalks	74	Drivers do not pay attention	324
There are a lot of other people walking or biking	66	There are no safe places for people walking, biking, or rolling to cross the street	219
People drive at the speed limit or slower	41	There are no bicycle lanes or space for bicyclists	189
There are safe crossings	40	There are no or inadequate sidewalks	189
Drivers are paying attention	35	Other (please specify below)	185
There is good lighting at night for pedestrians or bicyclists	22	There are too many cars on the road	177
Other (please specify below)	18	I have experienced personal safety or harassment at this location	110
		There is not enough lighting at night for pedestrians or bicyclists	84
		There is not enough lighting at night for driving	45
Total	375	Total	1,914

Table 2. Summary of safe and unsafe location webmap attributes

Community Members Noting Safe and Unsafe Locations at a Public Open House

Getting To Zero

It's one thing to know what the issues are and where they are happening. It's another thing to know what to do and how to act. Bloomington is ready to act.

This section outlines the commitments the City of Bloomington will do to make our streets safer for everybody. The actions are organized into four categories:

- Funding and Staffing
- Community Engagement and Equity
- Policies, Processes, and Government Structure
- Safety Studies and Infrastructure

The tables on the following pages have prioritized the actions associated with these categories into three timeframes:

1. Immediate or Short Term (2024-2027)

2. Medium Term (2028-2034)

3. Long Term (2035-2039)

Each action includes an interim goal year, identified lead(s), and resources needed to complete the action. These actions and strategies should be reviewed and revised regularly to ensure that Bloomington's goal to eliminate fatal and serious injury roadway crashes by 2039 will be achieved.

These strategies and implementation actions will only occur when and where appropriate based on further analysis, engineering design, and environmental assessment. Implementation will also be dependent on staffing, financial, partnership development, and other constraints so while the City will make every effort to implement the following actions, other contributing factors will need to be accounted for. **Additional staffing hires and significant investment in infrastructure planning and construction funding levels will be needed to meet the City's goal.**

Please note that all costs and funding amounts shown in the following section are estimated costs using 2024 dollars. Amounts should be taken as a starting point for budgeting purposes only and should be updated by City staff for inflation and for the exact scope developed for each item. Additional information and assumptions listed are given to assist the City with future scoping and delivery items only. The team developing this Action Plan is not responsible for the accuracy of the numbers provided herein.

Immediate or Short Term Action Items (2024-2027)

Funding & Staffing

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
FS1	Increase City engineering, planning, and public works staffing levels to support implementation of safety improvements	2025	Engineering, Planning, Administration	Additional staffing (see items noted for additional staffing)

Additional information:

- Consider hiring permanent staff in place of consultants to reduce estimated costs reported elsewhere in this document.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
FS2	Establish permanent local funding for safety and speed studies, low-cost implementation projects, and regular maintenance of safety infrastructure	2025	Engineering, Planning, Administration	"Funding (Suggest to start with $500,000 in 2025)"

Additional information:

- Revisit funding levels as projects are designed and implemented.
  Safety infrastructure is defined as infrastructure related to safety enhancement demonstration projects (such as flexible delineators, paint, hardened centerlines, and removable speed humps) and permanent direct safety implementation items (such as RRFBs, crosswalk signing, and pavement markings).

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
FS3	Evaluate individual property owner contributions for sidewalk maintenance, traffic calming, street reconstructions, and other safety improvements	2025	Engineering, Planning, Public Works, Administration	Consider funding shifts to other sources, such as City tax levy

Additional information:

- Currently, individual-fronting property owners contribute funding toward improvement projects (sometimes referred to as “special assessments”). This funding mechanism may be inequitable, particularly toward lower- and fixed-income residents, and may contribute to lack of public momentum for needed projects.
- Adjusting funding for projects to the community at-large (via tax levy) or to a region of the community (via transportation improvement districts or similar, if allowed by the state) decreases financial strain on particular properties when projects occur on adjacent roadways, and it allows more users who benefit from the improvement to share the cost.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
FS4	Establish transparent Capital Investment Plan funding programming process	2025	Engineering, Planning, Public Works, Administration	None

Additional information:

- Currently, there is not a transparent, data-driven process for prioritizing Capital Improvement Plan.
- Utilize the project prioritization in this report combined with infrastructure maintenance and preservation needs to develop funding levels and Capital Improvement Plan.
- Include regular funding for maintenance and replacement of safety infrastructure, sidewalks, trails, and bikeways.

Community Engagement & Equity

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
CEE1	Develop a Community Engagement Plan for safety implementation projects	2025	Engineering, Planning, Administration	Planning staff; potential extra funding for compensation of community partners

Additional information:

- Integrate language that communicates safety goals into public outreach.
- Establish regular targeted outreach to various neighborhood and civic groups to collect feedback on transportation safety issues (examples include neighborhood groups, advocacy organizations, IU students and staff, and religious organizations).
- Utilize existing events to promote safety messaging and collect feedback (examples include Bloomington Community Farmers' Market, annual City festivals, etc.).
- Include set goals, engagement strategies, community partners, engagement timelines, and methods for integrating feedback into the project.
- Establish a scale to determine dollar amount or impact level that requires certain strategies.
- Establish a system to communicate materials to the public virtually (via website, social media, email newsletter, etc.), printed (at daily destinations, in the right of way, at public buildings, etc.), and in media (newspapers, online alternative news sources, television, radio, etc.) to all types of transportation users.
- Provide materials in other languages (Spanish at a minimum and consider other languages as needed
- Consider creation of a program to involve community members, groups, and organizations in conducting and participating in engagement efforts.
- Consider establishing community ambassadors to employ for engagement efforts, and establish funding source to provide fair compensation and necessary resources for ambassadors.
- Collaborate with local groups and advocates for walking, biking, and vulnerable road user groups to expand the reach of SS4A efforts, including collaborating to host events that promote and advocate for walking, biking, rolling, or taking transit.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
CEE2	Invest in a public communication campaign to shift culture toward multimodal travel and educating transportation users about safety in all modes of travel	2026	Engineering, Planning, Transportation Demand Manager, Administration	Planning staff

Additional information:

- Includes education about crash factors, safety data, benefits aside from traffic safety (such as physical health, personal safety, air quality, economic and health disparities, etc.).
- Includes information and training to local media around understanding crash data, minimizing victim blaming, and high-level understanding of SS4A efforts.

Policies, Processes, and Government Structure

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
PPGS1	Create an Advisory Transportation Commission to review and approve all transportation facility projects, including safety implementation projects	2024	Planning, Engineering	Additional staffing may be required to coordinate commission duties

Additional information:

- Intended to provide a single commission review process for transportation projects to streamline City business and to create accountability for review of safety in each project.
- This committee should review all public- or private-led projects by any City department, other governmental agency, property owner, developer, utility, or other party that has a project that affects the City's transportation system. Review must include analysis of safety impacts (during construction and following construction) and provide recommendation for approval, modification, or denial to deciding body or staff.
- Submitting party should provide analysis of potential alternatives for all transportation facility projects that includes Safe Systems Approach, Vision Zero, Complete Streets, and Safe Routes to School analysis for all studied alternatives. Document this analysis in a Safe Systems Approach design alternatives report to include within a project's Engineer's Report (or similar) that is included in the project review and approvals process.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
PPGS2	Analyze City staff and department structure to provide holistic response to safety needs and realize efficiencies in staff and other resources.	2025	Planning, Engineering, Public Works, Administration	None

Additional information:

- Intended to determine if existing government structure is effective at championing study and implementation of safety in the City's transportation system or if combining or restructuring departments (particularly the Planning and Transportation, Engineering, and Public Works departments) will result in a more efficient and effective delivery of the action items in this report.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
PPGS3	Modify existing fatal crash analysis structure	2025	Engineering (development); Engineering, Planning, Fire, Police (participation)	Additional staff position (engineering) to review data, coordinate meetings, and report findings

Additional information:

- Schedule a regular (monthly or quarterly as needed) meeting with engineering, planning, fire, police, EMS, other jurisdictions (INDOT, Monroe County), and public health professionals to discuss methods for improving data collection, analyze contributing factors, and identify potential short- and long-term solutions to address crash causes.
- Expand to include serious injury crashes as staffing allows.
- Provide brief report on crash data and findings to Advisory Transportation Committee (see PPGS1).

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
PPGS4	Develop and/or revise City standard details for driveways, sidewalks, bikeways, etc. that integrate Safe Systems Approach design principles	2025	Engineering	Funding ($50,000 estimated consultant cost)

Additional information:

- Add standard details for sidewalks, driveways, bikeways, RRFBs, traffic signals, safety countermeasures provided in **Appendix C: Proven Safety Countermeasures**, etc. that currently do not exist but contribute to safety for all transportation users.
- Revise existing details (such as pavement markings) to reflect latest safety research and data. For example, increase lane line striping to 6" width and default to continental/block, "ladder", or other high-visibility crosswalk striping.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
PPGS5	Revise land use and zoning standards to support transportation safety	2025	Planning	Planning staff

Additional information:

- Promote redevelopment and new development that encourages slow vehicle speeds, mode shift to non-personal vehicle transportation, and funds adjacent transportation safety projects.
- Utilize development opportunities to meet other goals, such as filling in sidewalk gaps, intersection improvements, and road diets.
- Utilize proactive land use planning, such as small area plans, to inform potential developers of future land use intent.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
PPGS6	Develop appropriate truck turning standards and evaluate existing roadway system for excessive curb radii	2025 (development), 2027 (evaluation)	Engineering	Additional Engineering staff

Additional information:

- Evaluate appropriate design vehicles and accommodation/control vehicles for various street typologies from the 2019 Transportation Plan and surrounding land use context.
- Identify areas with excessive curb radii, roadway/lane widths, etc. based on AutoTURN or other truck turning software following established design and control vehicle standards.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
PPGS7	Enhance robustness of crash data by improving quality and consistency of crash reporting and by collaborating with EMS, hospital, and trauma facilities to identify instances of potential crash underreporting	2026	Planning, Police, Engineering, Fire	Staff member to facilitate coordination and communication

Additional information:

- Historical crash data for Indiana has been challenging to analyze and compare.
- Historically marginalized communities may avoid reporting injury crashes to law enforcement but likely will seek medical attention for injuries.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
PPGS8	Identify criteria or universal adoption of signal-related pedestrian and bicycle safety improvements	2026	Engineering	Funding ($5,000 estimated consultant cost)

Additional information:

- Examples include No Turn on Red, Leading Pedestrian and/or Bicycle Intervals, Pedestrian Scrambles, and Rest-In-Red.
- Prioritize implementation in high priority areas and all new signal installations.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
PPGS9	Evaluate transit availability, routing, incentives, and usage to promote mode shift from personal vehicles to transit	2027	Planning, Transit, Transportation Demand Manager	Funding ($250,000 estimated consultant cost for evaluation)

Additional information:

- Consider additional incentives, such as free or reduced fares to select groups or all riders, to encourage transit usage during events and for commuting.
- Continue to promote transit usage for City employees, and consider expanding further to additional employers.
- Study proactive expansion of the transit system through additional routes and/or reducing headways to enhance desirability of transit usage, including mid-day, night, and weekend service.
- Enhance accessibility of system (shelters, boarding zones) to ensure availability to all users regardless of physical ability.
- Increase potential for mode shift away from personal vehicles and toward transit, reducing system kinetic energy and helping the City meet climate goals.
- Focus first on filling gaps in the sidewalk network between ends of two existing sidewalks before adding sidewalks to areas where they do not currently exist.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed

PPGS10	Prepare an annual report highlighting progress made toward zero deaths/serious injuries goal, and present to City Council and Advisory Transportation Commission	2025	Planning	Funding ($5,000 estimated consultant cost to establish report template)

Additional information:

- Also post to City website, social media, and in locations accessible to the public.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
PPGS11	Explore establishing a citywide 20 mph speed limit and/or slower speed zones in school areas	2025	Planning	Funding ($5,000 estimated consultant cost for background information report)

Additional information:

- Other slower speed zones, such as neighborhood slow zones, may also be considered as part of this effort.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
PPGS12	Identify and develop prioritization plan for eliminating sidewalk and bikeway gaps and reducing barriers to use	2026	Planning	Funding ($25,000 estimated consultant cost to complete)

Additional information:

- Use available city data and public input to prioritize improvements.
- Projects along roadways with a high number of VPD and higher vehicle speeds should be given greater priority in the prioritization plan.
- Incorporate criteria similar to those used in the 2022 Sidewalk Evaluation Matrix developed by the Council Sidewalk Committee.
- Prioritize construction of at least one side of sidewalk where none currently exist and to fill in gaps in existing sidewalks.
- Where available right of way and roadway geometrics allow, provide physical horizontal and vertical separation between roadway and sidewalk/bikeway.
- Increase potential for mode shift away from personal vehicles and toward active transportation, reducing system kinetic energy and helping the City meet climate goals.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
PPGS13	Analyze sight distance and visibility of all roadway users at intersections and midblock crossings	2027	Engineering	Additional Engineering staff

Additional information:

- Coordinate with Public Works staff to remove any barriers to sight distance within the City's control (such as low-hanging tree branches and vegetation).
- Develop a list of items within the property of others (such as private property owners) and items by others within City right-of-way (such as utility poles and boxes) that block visibility. Begin coordination with such parties to remove such obstacles.
- Update City code to include clear sight distance requirements.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
PPGS14	Train all planning, engineering, and other appropriate staff in Safe Systems Approach topics to ensure a culture of safety among City staff charged with implementation of the adopted goal	2026	Planning (development)	Funding ($10,000 estimated consultant cost for developing training materials and one round of delivery)

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
PPGS15	Develop Safe Routes to School Program for all public and private preschools, elementary schools, middle schools, and high schools within City limits	2026	Planning	Funding ($75,000 estimated consultant cost for developing plan)

Additional information:

- Intended to provide extra prioritization to improvements within school walksheds.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
PPGS16	Evaluate equity in application records and project selection process in existing City programs	2026	Planning	Funding ($25,000 estimated consultant cost for analysis)

Additional information:

- Includes Sidewalk Repair Assistance program, Traffic Calming program, Neighborhood Greenways program, and others as needed.
- Conduct outreach to confirm Priority communities have the resources to apply to these programs, and provide resources as needed to address any barriers or shortfalls for these communities.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
PPGS17	Develop list of City advocacy items targeted toward state decision-makers and pursue lobbying or other advocacy for these items	2025	Planning	Lobbyist

Additional information:

- Examples include support for automated speed enforcement camera authorizing legislation, automated red light enforcement authorizing legislation, and expansion of extraterritorial zoning to include approval of transportation facility construction standards.

Safety Studies and Infrastructure

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
SSI1	Undertake corridor-wide safety analysis and project planning efforts on at least one large (greater than 1 mile) corridor or multiple smaller corridors per year	2025-2039	Planning	Funding (Cost varies by corridor; suggest beginning with $250,000 per year adjusted for inflation)

Additional information:

- Suggested to follow prioritization scoring within this report. The top 4 scoring corridors that are not currently under evaluation at the time of this report (excluding INDOT highway corridors) are:
  - E/W 3rd Street (Jackson Street to SR 46)/Atwater Avenue (Dunn Street to Mitchell Street)
  - College Mall Road (E 3rd Street to Covenanter Drive)
  - W 3rd Street (I-69 to Kirkwood Avenue)
  - Dunn Street (E 3rd Street to E 10th Street)
- Prioritization may be adjusted to take advantage of adjacent land use changes, additional public and private funding (grants, partnerships, etc.), projects initiated by other jurisdictions (such as INDOT), and other factors as deemed advantageous by City staff.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
SSI2	Study appropriate rapid-implementation, low-cost safety countermeasures at all intersections along the High Priority Network, and design and implement countermeasures at half of the High Priority Network intersections as appropriate	2025 (study); 2026 (design and implementation)	Engineering	Funding (Cost varies by int.; suggest budgeting $500,000 per intersection for planning and design, $1,600,000 for implementation)

Additional information:

- Assumes that not all intersections on the High Priority Network will be appropriate for rapid-implementation countermeasures.
- Assumes paint/post type curb extensions at 4 corners of a typical intersection or median refuge island on 4 legs of a typical intersection at approximately 150 intersections. Estimate does not include adjustments to traffic signals (head moves, additional heads, timing adjustments, left-turn phasing changes, etc.). Estimate assumes no ADA improvements are triggered with rapid-implementation measures, no modifications needed to public or private utilities, and no right of way or easement purchases required. Minor adjustments to signing (such as additional no parking signing) included, but larger scale replacement of signing (such as replacement of all stop signs at the intersection) not included.

Rapid Implementation Pedestrian Crossing With Curb Extensions Recently Installed at College Ave and 14th St

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
SSI3	Conduct before and after analysis of safety improvements, especially rapid-implementation improvements, to assess effectiveness and refine existing and future applications	2026 (development), Ongoing (implementation)	Engineering	Intern or EIT position to do analysis and develop report on results

Additional information:

- Intended to evaluate both past permanent countermeasure installation to ensure effectiveness and to evaluate rapid-implementation items to determine whether to install on a permanent basis.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
SSI4	Pursue funding (or procure locally) and design permanent safety countermeasures at up to 50 intersections (to be constructed in action item SSI2).	2027	Engineering	Funding (Approx. design cost $750,000) and additional Engineering staff to administer

Additional information:

- Assumed to be designed with local funding (typically, federal grant funding does not cover design work prior to execution of a grant agreement).
- To be constructed in medium-term action item SSI19.
- Assumes treatments limited to retrofit type items such as curb extensions or pedestrian refuge crossings and any minor utility adjustments required by such improvements.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
SSI5	Initiate discussion with INDOT regarding improvements to state highway facilities	2025	Engineering, Planning	None

Additional information:

- This item is only for coordination and discussion with INDOT. Corridor study, design, and construction of improvements assumed in medium-term and long-term action items.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
SSI6	Design sidewalk and bikeway gap closures up to identified funding level	2027	Engineering	Funding (Suggest $500,000) and additional Engineering staff to administer

Additional information:

- This item is only for design of closure of sidewalk and/or bikeway gaps. Construction will follow in medium-term and long-term action items.
- Use prioritization plan in PPGS12 to determine which gaps to design.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
SSI7	Implement lighting improvement program for intersection visibility and personal safety	2027 (development); Ongoing (implementation)	Engineering, Planning, Public Works	Funding ($150,000 estimated consultant cost for analysis; suggest $250,000 annually for implementation) and additional Engineering staff to administer
Additional information: • May require UDO update to allow for appropriate lighting types and levels.				
ID	**Description**	**Interim Goal Year**	**Who Is Responsible**	**Additional Resources Needed**
SSI8	Develop Road Safety Audit materials, checklists, etc. for use in execution of proactive and reactive Road Safety Audits, and conduct Road Safety Audits on at least 2 additional 1-mile corridors by the goal year	2027	Engineering	Funding ($10,000 estimated consultant cost for development of materials; $200,000 for conducting audits)
Additional information: • Staff time also required to participate in Road Safety Audit process. • Road Safety Audit materials could be repurposed from existing materials readily available developed by others.				
ID	**Description**	**Interim Goal Year**	**Who Is Responsible**	**Additional Resources Needed**
SSI9	Develop long-range capital planning (10+ years, ideally through safety goal year) to coordinate safety improvements with other capital needs (such as pavement preservation and underground utility replacements) to achieve future project cost savings	2026	Planning, Engineering, Public Works, Parks, Administration, Office of The Controller	None
Additional information: • Significant additional study may be needed to project City infrastructure preservation and replacement needs in the future if such information does not currently exist (would require significant additional funding for study).				
ID	**Description**	**Interim Goal Year**	**Who Is Responsible**	**Additional Resources Needed**
SSI10	Complete design and construct College Avenue/Walnut Street project	2027 (Design) 2030 (Construction)	Engineering	Design and construction funding (to be determined based on cost estimate for the project)
Additional information: • Secure local and/or federal funding to construct identified improvements to College Avenue and Walnut Street.				

Medium Term Action Items (2027-2034)

Policies, Processes, and Government Structure

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
PPGS18	Catalyze redevelopment of land use along HPN corridors from unsupportive to supportive of safety enhancement and multimodal mobility	2030 (first corridor), Ongoing thereafter	Planning	Further analysis needed of funding or other resources

Additional information:

- Exact mechanisms to catalyze land use shifts to be determined based on corridor. Examples could include zoning changes, tax increment financing, public or non-profit land banking, etc.
- Goal year does not indicate that land use on a corridor will completely change by the goal year but rather all redevelopment incentives are in place and redevelopment has begun occurring along the corridor.

Compact Intersections with Buildings Close To The Street Make Walking More Comfortable

Safety Studies and Infrastructure

Continuation of Short-Term Items:

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
SSI1 (Cont.)	Undertake corridor-wide safety analysis and project planning efforts on at least one large (greater than 1 mile) corridor or multiple smaller corridors per year	2025-2039	Planning	"Funding (Cost varies by corridor; suggest beginning with $250,000 per year adjusted for inflation)"
ID	**Description**	**Interim Goal Year**	**Who Is Responsible**	**Additional Resources Needed**
SSI3 (Cont.)	Conduct before and after analysis of safety improvements, especially rapid-implementation improvements, to assess effectiveness and refine existing and future applications	2026 (development), Ongoing (implementation)	Engineering	Intern or EIT position to do analysis and develop report on results
ID	**Description**	**Interim Goal Year**	**Who Is Responsible**	**Additional Resources Needed**
SSI7 (Cont.)	Implement lighting improvement program for intersection visibility and personal safety	2027 (development); Ongoing (implementation)	Engineering	Funding (Suggest $250,000 annually for implementation)

New Medium-Term Action Items:

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
SSI11	Implement annual program for addressing sight distance issues beyond those easily correctable by Public Works staff	2028-2039	Engineering	Funding (Suggest $200,000 annually)

Additional information:

- Intended to provide funding to move utility poles/boxes, landscaping, and other items that are obscuring necessary sight triangles at intersections.
- Revisit funding annually to determine appropriate budget level to complete removal of sight obstructions by zero deaths and serious injuries goal year.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
SSI12	Reanalyze High Injury Networks every 5 years per SS4A program requirements	2029	Planning	Funding ($50,000 estimated consultant cost)

Additional information:

- Estimate includes only reanalysis of the High Injury Network and project management. Cost does not include full redevelopment of a new SS4A Action Plan.

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
SSI13	Construct designed sidewalk and bikeway gaps in item SSI6	2028	Engineering	Funding (Approx. $3.5 million construction and engineering cost)
ID	**Description**	**Interim Goal Year**	**Who Is Responsible**	**Additional Resources Needed**
SSI14	Design additional sidewalk and bikeway gap projects per funding level budgeted	2028 (begin); Ongoing thereafter	Engineering	Funding (Suggest $200,000 annually)
Additional information: • City staff should evaluate budgeted amount to determine if it is adequate to achieve the goal of closing all sidewalk and bikeway gaps by the zero fatalities and serious injuries goal year. Adjust budget as needed. • This action item is intended to be a standalone project apart from other action items in this list, such as reconstructions of priority corridors.				
ID	**Description**	**Interim Goal Year**	**Who Is Responsible**	**Additional Resources Needed**
SSI15	Lead corridor studies, preliminary, and final design of improvements to INDOT facilities (one per year beginning in 2029)	2029 (begin)	Planning, Engineering	Additional information needed to determine funding levels (INDOT cost participation, scope of improvements, etc.); Suggested budgeting $1 million per year starting in 2029
Additional information: • Assumption that City will need to lead the project development process but follow INDOT policies, procedures, etc. • Refine budget amount when scope of improvements are identified. • Funding amounts listed assume INDOT does not participate in cost sharing for these corridor studies and design efforts.				

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
SSI16	Complete preliminary and final design on projects with corridor studies developed in SSI1 at a rate of at least one per year. Construct with available local, partnership, and/or grant funding as available and applicable	2028 (begin)	Engineering	Funding levels to be scoped through corridor planning efforts
Additional information: • Exact funding amounts cannot be estimated at this time due to unknowns of project scope, termini, timing, etc. • Per mile costs for resurfacing and reconstruction costs can be based on past bid experience or on general resources such as the Status of the Nation's Highways, Bridges, and Transit report produced by FHWA. See Exhibit A-6 in 25th edition of the Status of the Nation's Highways, Bridges, and Transit for FHWA assumed costs per lane mile as of the time of creation of this report. Typical design costs range from 10% to 15% or more depending on complexity and scale of the project.				
ID	**Description**	**Interim Goal Year**	**Who Is Responsible**	**Additional Resources Needed**
SSI17	Perform one additional 1-mile or longer Road Safety Audit per year (or multiple smaller corridors)	2028 (begin)	Engineering	Funding (Suggest $100,000 annually)
Additional information: • Evaluate funding amount annually to ensure funding levels contribute to meeting zero fatal and serious injury goal.				
ID	**Description**	**Interim Goal Year**	**Who Is Responsible**	**Additional Resources Needed**
SSI18	Revisit prioritization of improvements annually based on funding, design constraints, High Injury Network updates, coordination with other projects, additional funding sources, etc.	2028 (begin), Ongoing thereafter	Planning	None
Additional information: • Flexibility is encouraged if conditions, analysis, funding sources, etc. change over time.				
ID	**Description**	**Interim Goal Year**	**Who Is Responsible**	**Additional Resources Needed**
SSI19	Construct permanent safety countermeasures designed in item SSI4	2028	Engineering	Funding (Approximate construction cost: $5 million)
Additional information: • Suggested to pursue SS4A Implementation Grant funding to achieve this action item.				

Long Term Action Items (2035-2039)

Policies, Processes, and Government Structure

ID	Description	Interim Goal Year	Who Is Responsible	Additional Resources Needed
PPGS18	Catalyze redevelopment of land use along HPN corridors from unsupportive to supportive of safety enhancement and multimodal mobility	2030 (first corridor), Ongoing thereafter	Planning	Further analysis needed of funding or other resources
ID	**Description**	**Interim Goal Year**	**Who Is Responsible**	**Additional Resources Needed**
PPGS19	Confirm zero fatal and serious injury goal met or adjustment to goal. If goal is not met, reanalyze and adjust action plan items as needed to support expedited progress toward new goal	2039	Planning	Funding ($250,000 to complete new SS4A Action Plan if needed)
Additional information: • Goal should strive to be met as much as possible. Adjustment of goal should only be necessary if unforeseen conditions arise to make goal unattainable in the time period forecasted.				

Safety Studies and Infrastructure

Continuation of Medium-Term Action Items:				
ID	**Description**	**Interim Goal Year**	**Who Is Responsible**	**Additional Resources Needed**
SSI1 (Cont.)	Undertake corridor-wide safety analysis and project planning efforts on at least one large (greater than 1 mile) corridor or multiple smaller corridors per year	2025-2039	Planning	"Funding (Cost varies by corridor; suggest beginning with $200,000 per year adjusted for inflation)"
Additional information: • Reevaluation of rate of corridor studies is encouraged in approximately year 2035 to determine if rate of studies and construction is sufficient to meet zero fatalities and serious injuries goal.				
ID	**Description**	**Interim Goal Year**	**Who Is Responsible**	**Additional Resources Needed**
SSI3 (Cont.)	Complete preliminary and final design on projects with corridor studies developed in SSI1 at a rate of at least one per year. Construct with available local, partnership, and/or grant funding as available and applicable	2028 (begin)	Engineering	Funding levels to be scoped through corridor planning efforts
ID	**Description**	**Interim Goal Year**	**Who Is Responsible**	**Additional Resources Needed**
SSI7 (Cont.)	Implement lighting improvement program for intersection visibility and personal safety	Ongoing (implementation)	Engineering	Funding (Suggest $250,000 annually)
ID	**Description**	**Interim Goal Year**	**Who Is Responsible**	**Additional Resources Needed**
SSI16 (Cont.)	Complete preliminary and final design on projects with corridor studies developed in SSI1 at a rate of at least one per year. Construct with available local, partnership, and/or grant funding as available and applicable	2028 (begin)	Engineering	Funding (Suggest $100,000 annually)
ID	**Description**	**Interim Goal Year**	**Who Is Responsible**	**Additional Resources Needed**
SSI17 (Cont.)	Perform one additional 1-mile or longer Road Safety Audit per year (or multiple smaller corridors)	2028 (begin)	Engineering	Funding (Suggest $100,000 annually)
ID	**Description**	**Interim Goal Year**	**Who Is Responsible**	**Additional Resources Needed**
SSI18 (Cont.)	Revisit prioritization of improvements annually based on funding, design constraints, High Injury Network updates, coordination with other projects, additional funding sources, etc.	Ongoing	Engineering	None

Safety Countermeasure Toolkit

To achieve zero roadway fatalities and serious injuries by 2039, the City of Bloomington will need to comprehensively address roadway safety issues in the region, starting with the priority corridors in Figure 25 and priority intersections in Figure 26. FHWA's Proven Safety Countermeasures are specific design or operational changes to streets that have been proven nationally to improve safety. Selection and design of safety countermeasures on every street project in the city should be decided through the lens of the Safe System Approach, so that if a crash occurs it will likely not result in a fatal or serious injury. Safety countermeasures should not be compromised or simplified during the design or construction phases. These modifications can reduce the level of safety for all road users.

A set of cut sheets describing each Safety Countermeasure are included in **Appendix C: Proven Safety Countermeasures.**

High Priority Corridors & Intersections

The actions defined in the previous sections will help to institutionalize the practices, policies, and programs that will make Bloomington's streets safer for all residents. These actions will be complemented by on-the-ground safety improvement projects that will be designed using Safe Systems Approach principles and the Safety Countermeasures Toolkit, and informed by the crash factors we identified as part of our crash analysis and creation of the High Risk Network.

Eventually, the City hopes to address all the High Risk Network issues with improved design and practices, but we need to start somewhere. Using information from the crash analysis, community input, and best practices, the following corridors were selected as "Priority Corridors," meaning the City will focus on improving these roadways in the near term.

The streets and intersections shown on the priority corridors and priority intersections were scored using a combination of the following factors:

Intersections:

- Vehicle-only High Injury Network: calculated as amount of vehicle-only FSI crashes / highest intersection amount of vehicle-only FSI crashes X 20 points
- Vulnerable Road User High Injury Network: calculated as amount of VRU FSI crashes / highest intersection amount of VRU FSI crashes X 25 points
- High Risk Network:
  - One or more roadway legs on Critical All-Users High Risk Network: 20 points
  - One or more roadway legs on High All-Users High Risk Network: 10 points
  - No roadway legs on High or Critical All-Users High Risk Network: 0 points
  - Intersections with roadway legs on both High and Critical All-Users High Risk Network received 20 points
- Equity (Bloomington MPO Environmental Justice Mapping)
  - Intersection bordering or within "High Concentration of EJ Populations": 15 points
  - Intersection bordering or within "Medium-High Concentration of EJ Populations": 7.5 points
  - Other intersections: 0 points
- Public Input (Online Webmapping + In-Person Safety Week Activities)

    - Intersection received 6+ negative comments: 20 points
    - Intersection received 4-5 negative comments: 15 points
    - Intersection received 2-3 negative comments: 10 points
    - Intersection received 1 negative comment: 5 points
    - Intersection received no negative comments: 0 points
- All intersections with one or more INDOT-controlled legs separated from prioritization scoring
- Maximum score possible: 100 points
- Maximum score achieved: SR 45/46 at College Avenue/Walnut Street (82 points)
- Maximum score achieved at City-controlled intersection: College Avenue and W 3rd Street (68 points)
- Scoring tiers:
    - Highest: Scores above 40
    - High: Scores between 26 and 40
    - Medium: Scores between 18 and 25
    - Medium-Low: Scores between 1 and 17
    - Low: Intersections not scored assumed to be low due to not being on high injury or high risk networks

Corridors:

- Vehicle-only High Injury Network: calculated as max segment vehicle-only FSI crash score / highest max segment vehicle-only FSI crash score X 20 points
- Vulnerable Road User High Injury Network: calculated as max segment VRU FSI crash score / highest max segment VRU FSI crash score X 25 points
- High Risk Network:
    - Roadway corridor on Critical All-User High Risk Network: 20 points
    - Roadway corridor on High All-User High Risk Network: 10 points
    - Roadway corridor not on Critical or High All-User High Risk Network: 0 points
- Equity (Bloomington MPO EJ Mapping)
    - Corridor bordering or within "High Concentration of EJ Populations": 15 points
    - Corridor bordering or within "Medium-High Concentration of EJ Populations": 7.5 points
    - Other corridors: 0 points
- Public Input (Online Webmapping + In-Person Safety Week Activities)
    - Greater than 20 negative comments per mile: 20 points
    - 15-20 negative comments per mile: 15 points
    - 8-14 negative comments per mile: 10 points
    - >0-7 negative comments per mile: 5 points
    - Corridor received no negative comments: 0 points
- All INDOT-controlled corridors separated from prioritization scoring
- Maximum score possible: 100 points
- Maximum score achieved: E/W 3rd Street (Rogers Street to SR 46) (80 points)
- Scoring tiers:
    - Highest: Scores above 50
    - High: Scores between >34 and 50
    - Medium: Scores between >24 and 34
    - Medium-Low: Scores between >0 and 24
    - Low: Corridors not scored assumed to be low due to not being on high injury or high risk networks

Figure 25 and Figure 26 show the priority corridors and intersections grouped by highest, high, medium, and medium-low priority. Streets that are a priority but are owned by INDOT are labeled "INDOT" jurisdiction. These streets will likely have a different process for implementing safety countermeasures than City-owned streets that requires additional coordination and time to implement.

Corridors and intersections not noted as high priority in the following figures should still be analyzed for safety improvements with other projects (such as pavement preservation or reconstruction projects) as they arise.

Strategies and Projects Prioritization: Priority Corridors

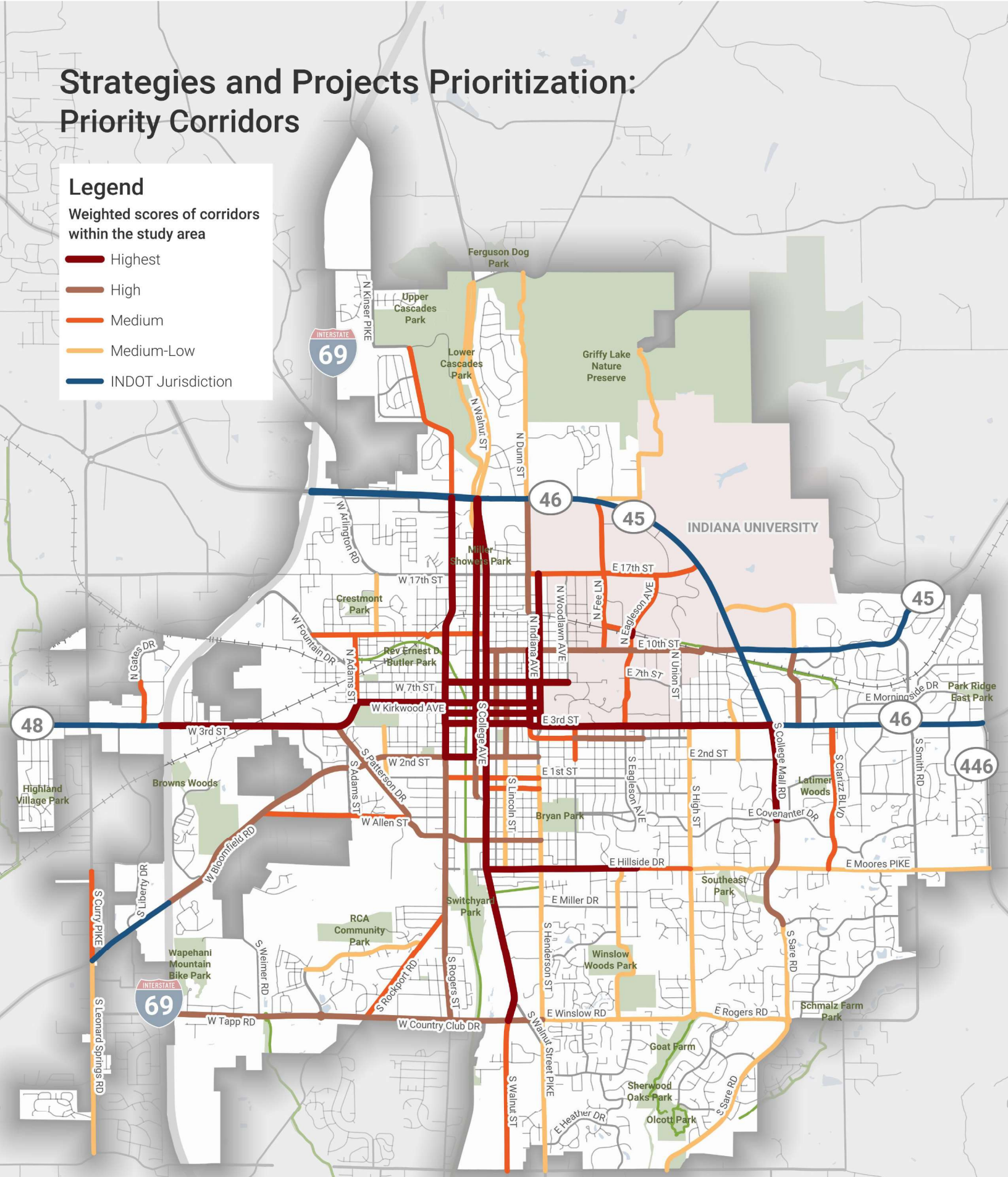


Figure 25. Priority Corridors for Safety Countermeasures

Strategies and Projects Prioritization: Priority Intersections

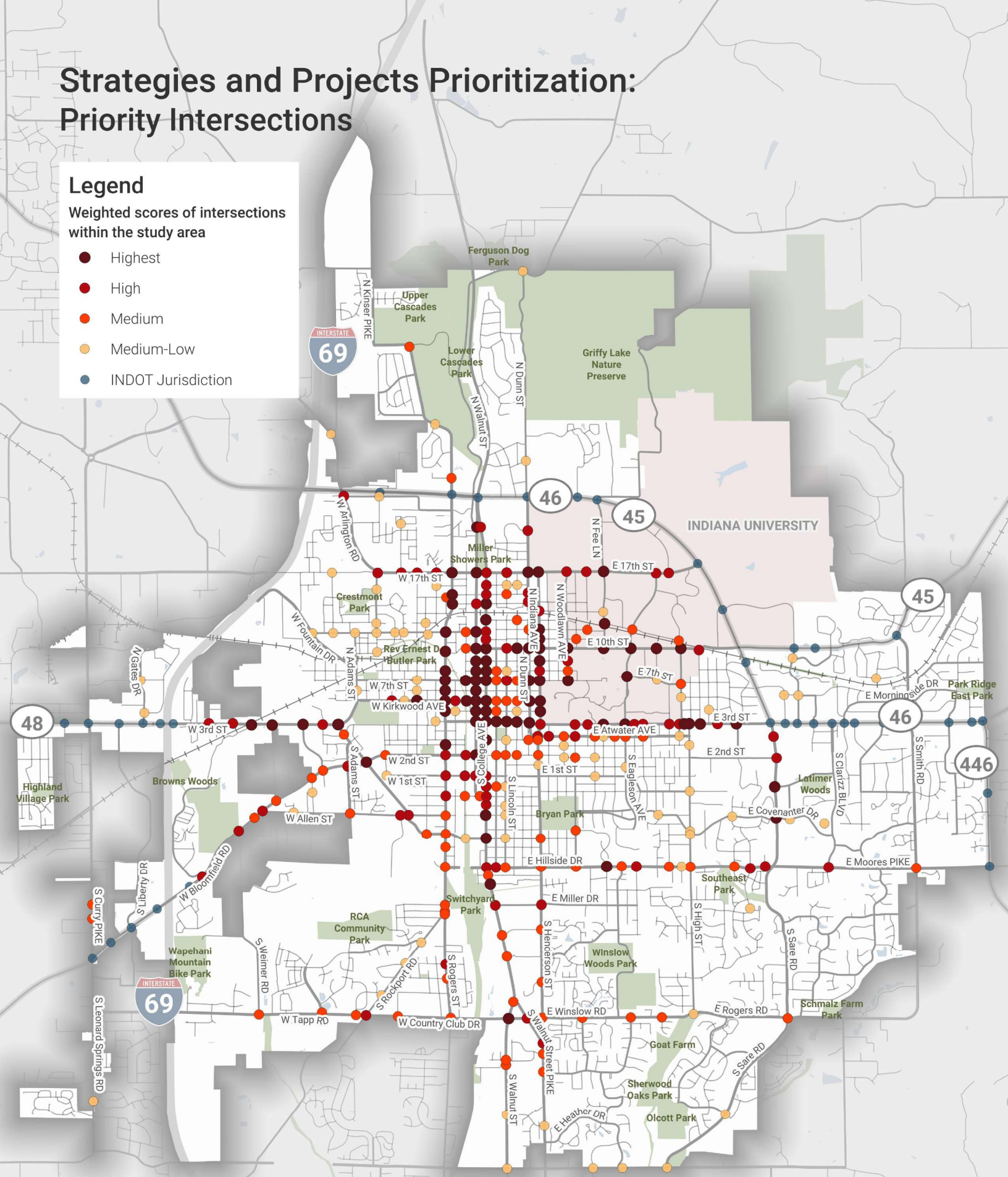


Figure 26. Priority Intersections for Safety Countermeasures

Progress & Moving Forward

This plan is full of actions, strategies, and projects that will help reduce fatal and serious injuries on Bloomington's roadways. However, this plan needs to be embraced, discussed, emphasized, implemented, and reinforced every day as decisions are made, projects are built, and people move around the community.

The actions, strategies, and projects described in this plan are a transformative step for Bloomington and may not come naturally or easily. Thus, is it important to track what is (and, perhaps, isn't) happening and how (or if) actions are resulting in safer streets so the plan can be modified to ensure success.

Performance Measures & Annual Reporting

It is essential that there are regular public conversations about Bloomington's roadway safety and progress toward zero deaths and serious injuries. To institutionalize these conversations, the City will produce an annual report that will be posted on their website and publicized through its main communication channels. The annual report should include performance measures based on data from the Safety Action Plan and countermeasures listed in Appendix C: Proven Safety Countermeasures.The following performance measures should serve as the minimum starting point for annual reporting, as they are expected to have the greatest impact:

Performance Measure
Number of fatal and serious injury crashes
Number of fatal and serious injury crashes involving people walking, biking, or rolling
Number of crashes involving speeding
Number of crashes involving distracted driving
Number of crashes involving driving under the influence (DUI)
Number of rapid implementation intersection safety projects completed
Number of miles of speed management projects completed on HIN streets
Number of action items started
Number of action items completed
Location and number of street segment and intersection improvements (including non-motorized transportation) made on the High Priority Network
Number of road diet/road reconfiguration projects completed
Number of intersection reconstruction projects completed
Number of roundabouts completed
Dollar amount invested in infrastructure improvements along the High Priority Network as a percentage of all transportation projects

Crash Data Dashboard

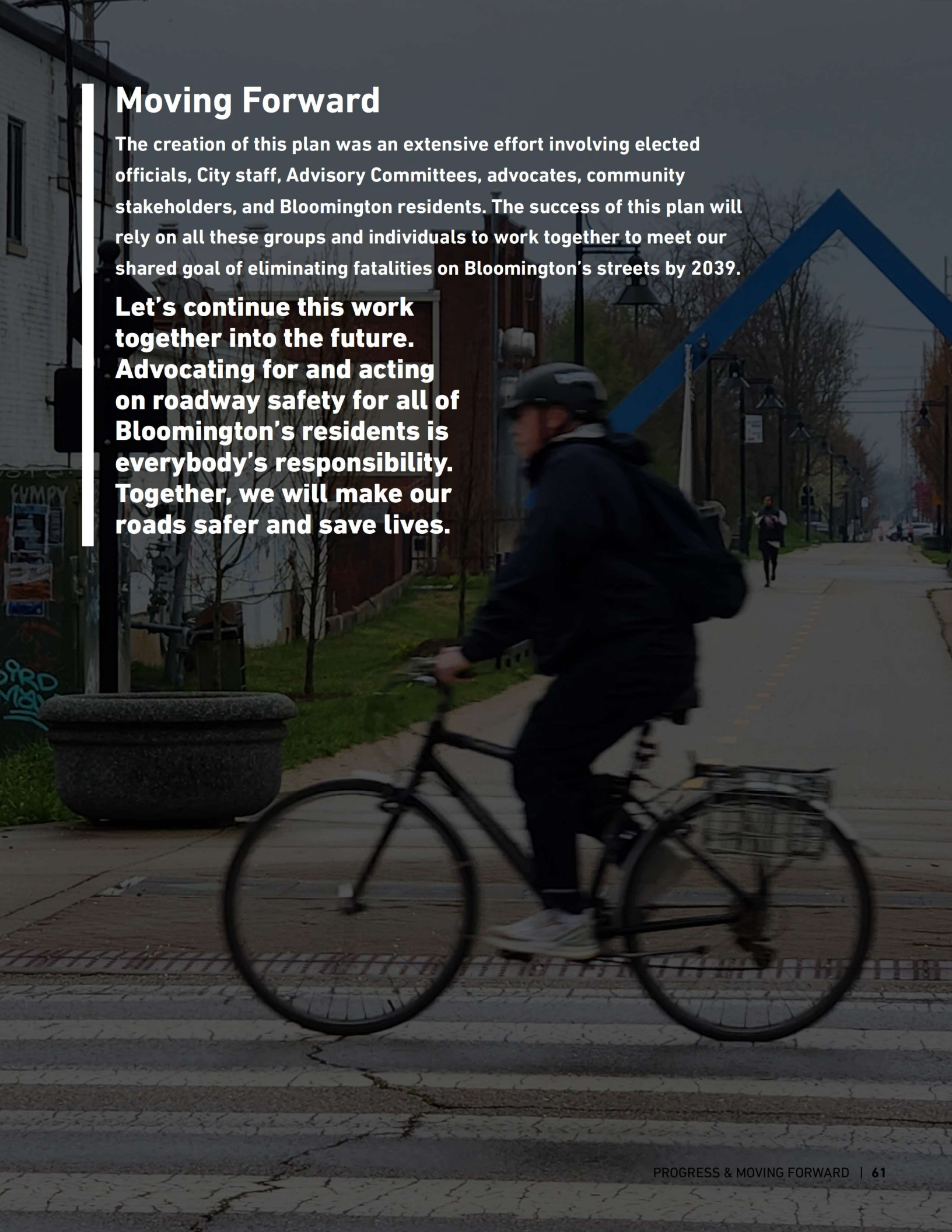
A crash data dashboard has been developed for Bloomington to help City staff, stakeholders, and residents easily see and understand crash trends, patterns, and factors around the City. The dashboard will help track progress towards Bloomington's goal of zero deaths and serious injuries by 2039 by providing data on what types of crashes are occurring, where and when they are occurring, and how performance measures are trending.

This dashboard will be updated annually to ensure that what is shown is reflective of the current situation. We encourage this dashboard to be used as an important tool in future conversations about roadway safety in Bloomington. The dashboard can be found at https://bton.in/SS4Aw.

Moving Forward

The creation of this plan was an extensive effort involving elected officials, City staff, Advisory Committees, advocates, community stakeholders, and Bloomington residents. The success of this plan will rely on all these groups and individuals to work together to meet our shared goal of eliminating fatalities on Bloomington's streets by 2039.

Let's continue this work together into the future. Advocating for and acting on roadway safety for all of Bloomington's residents is everybody's responsibility. Together, we will make our roads safer and save lives.



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BLOOMINGTON SAFE STREETS FOR ALL SAFETY ACTION PLAN APPENDIX A: SAFE STREETS FOR ALL - EQUITY FRAMEWORK

October 2023

Introduction

The City of Bloomington recognizes intentional and unintentional acts of racism and systemic discrimination in the city and university. Bloomington embraces a responsibility to provide equitable access and service to all community members, especially those that are low-income, Black Indigenous People of Color (BIPOC), students, people with disabilities, youth and elder adults, and other historically marginalized groups. This Equity Framework will act as a tool to eliminate disparities in traffic safety and create an equitable transportation system.

The Equity Framework in this Safe Streets for All (SS4A) Safety Action Plan will act as a model for future planning processes. This framework acknowledges the findings around racial discrimination in Bloomington and is guided by the city's racial equity goals to address destructive systems and cultivate a culture of connectedness. The development of the Equity Framework supports existing efforts and advances initiatives around equity and inclusion by the city through the 2019 Divided Community Project Report, 2020 Plan to Advance Racial Equity, and the Future of Policing and Racial Equity task forces.

This Equity Framework:

- Establishes a definition of "equity" for the Bloomington Safe Streets for All Safety Action Plan
- Acknowledges the role of discriminatory policies and practices in infrastructure, housing and land use, law enforcement, and climate resilience that have created inequitable transportation access
- Summarizes equity and racial equity efforts that have been initiated by the City today
- Identifies Communities of Interest that have historically experienced disinvestment in transportation infrastructure, lower access to opportunities, and disparate transportation safety outcomes
- Describes the approach for increasing participation from Communities of Interest in the plan process; and
- Provides a flow chart for centering equity at each stage of the plan process, including project selection and ongoing evaluation

Equity Definitions and Principles

The Bloomington Safe Streets for All Safety Action Plan defines equity as:

> **"The development of planning practices, policies, and programs and dedication of financial and staff resources that intend to reverse disparity trends and historic inequities, address systemic discrimination, and establish a transportation system that provides equal access to safe travel by any mode and opportunities to all people of the community, regardless of race, color, ancestry, age, gender, disability, neurodiversity, sexual orientation, or socioeconomic status."**

Analyzing the community through an equity lens will allow the SS4A Safety Action Plan to recommend facilities in communities that have been underinvested, marginalized, or otherwise discriminated against at any point in history to improve and increase transportation opportunities. This framework seeks to apply the definition above to the SS4A planning process and delineate what an equitable transportation system means through the following principles:

- Communities of Interest should participate in and influence transportation decision-making and outcomes. Communities of Interest are defined as areas with populations that have a higher density of eight equity indicators: BIPOC, low-income households, people with disabilities, people with low English proficiency, children, elderly adults, students, and limited vehicle access.
- One's race, income, physical ability, gender, age, and other demographic characteristics should not determine their safe access to jobs, healthcare, childcare, campus, education, public amenities, recreation, and quality food.
- A person's race, income, physical ability, gender, age, and other demographic characteristics should not correlate with negative transportation-related health, safety, or climate outcomes.
- The way a person gets around (mode) should not correlate with negative safety or health outcomes, disproportionate climate impacts, or limited access to opportunities. Planning, maintenance, and funding efforts for different transportation modes, like bicycling, micromobility, walking, driving, carpooling, or public transportation should be prioritized in Communities of Interest first while considering community goals and overall system needs.
- Safe and adequate sidewalks, bikeways, and trails should be accessible for and welcoming to people of all cultural backgrounds, ages, and to people with disabilities.
- Public investments, safety improvements, and other transportation policies and programs in areas vulnerable to displacement should be paired with anti-displacement strategies to empower residents to stay in their homes, encourage small businesses to remain in place, and strengthen the character of the community or neighborhood.

Transportation Related Policies & Practices

Transportation is a key element of people's daily lives that not only allows them to access their day-to-day needs and activities, but also serves as a place for the community to gather and interact socially. Nearly everyone regularly uses the transportation system, whether to access jobs, healthcare, groceries, shopping, entertainment opportunities, or other activities. Transportation systems are complex and comprehensive, often overlapping with other systems, such as housing, land use, law enforcement, and climate efforts.

Policies and practices surrounding these systems can create inequitable transportation access for BIPOC, those who are low income, and other marginalized groups, often due to a lack of representation and institutional power. Decades of racist policies and planning practices have long-standing and detrimental impacts to these communities in cities across the country. These practices have led specific demographic groups to disproportionately suffer the burdens of transportation systems. Some of these burdens include higher exposure to pollution, public health and climate impacts, higher concentrations of traffic crashes, service gaps and inadequate infrastructure, and divisive highway construction. Local governments are responsible for reversing these practices and implementing planning practices and policies that respond to the needs of all people.

This section explains some ways in which infrastructure, housing policies, land use planning, law enforcement, and climate resilience continue to act as a barrier for an equitable transportation system. Acknowledging and understanding how these systems influence one another helps present-day planning efforts, such as the SS4A Safety Action Plan, avoid further harm, build trust from the community, and develop fair policies and practices.

By understanding where institutional issues exist, the City can employ strategic investment, planning, and implementation of equitable transportation projects, programs, and policies to create a more inclusive Bloomington.

Infrastructure

Indiana, like other American states, has a history of infrastructure that has led to inequitable transportation outcomes. Around mid-century, destructive roadway practices and a car-centered culture shift began to proliferate across the US. This occurred in conjunction with a movement to avoid racial integration, reinforce segregation, and resist efforts that would aid Black communities, such as the 1949 Housing Act. This resulted in "white flight," which refers to the mass exodus of white and upper-class families from urban areas to suburban neighborhoods and the rise of urban sprawl. The transportation system quickly transformed to facilitate these shifts, developing practices that divided well-established and growing communities, created transportation barriers, increased serious crashes, and led to higher concentrations of pollution. These impacts were largely targeted towards Black and low-income communities through adopted plans and policies.

Highways

Like most states, Indiana's highway system was largely developed following the first Federal Highway Act of 1956 to create what is commonly known as the Interstate Highway System. This act, in concert with the 1949 Housing Act, led to widescale construction of highways through Black communities to facilitate white flight from the 1950s through the 1970s. Many low-income and Black households did not have the financial means to follow the investment occurring in suburbs. They remained in city neighborhoods that were experiencing disinvestment in infrastructure, schools, and employment, and other services.

Figure 1: Photo of College Ave Circa 1953 (Indiana University, Bloomington)

Public housing and highway construction were the twin cornerstones of the racially motivated urban renewal that swept the country from the 1940s to 1970s, resulting in an extensive loss of urban housing stock and the creation of hyper-segregated communities. Notably, the construction of Indiana's I-70 and I-65 highways decimated historic neighborhoods and divided multi-cultural communities in Indianapolis and the surrounding areas. Thriving businesses, residential streets, new public housing, and recreational spaces were wiped away and replaced with concrete barriers and multi-lane highways connecting new suburbs and the developing interstate network. In neighborhoods like Southside and Ransom Place in Indianapolis, property values plummeted due to the effects of the highway construction, including the traffic congestion that followed. Land acquisition to build the Interstate-70 displaced 17,000 long-time residents, and those that stayed were left with few practical options to sell and relocate.[1]

While the height of highway construction occurred between 1940 and 1970, there are still highway projects being developed today that exacerbate or cause issues of disenfranchisement. The recent development of the southern segment of I-69, running along the west border of Bloomington from Evansville to Indianapolis, is a modern example of how interstate projects can disproportionately burden a portion of the population. The segments of this

[1] Bradley, Daniel. (2020). 'Under the Highway': How interstates divided Indianapolis neighborhoods and displaced 17,000 people. https://www.wrtv.com/news/local-news/indianapolis/under-the-highway-how-interstates-divided-indianapolis-neighborhoods-and-displaced-17-000-people

highway were selected and constructed despite much opposition and many protests by communities[2] along the corridor. While the highway will support commuters and statewide travel, it has still been destructive for many directly impacted by the highway construction. Residents have been forced to sell portions of their land and some have been impacted by damage to their property from drainage and other infrastructure issues.[3] Further, the route required the destruction of approximately 1,500 acres of forest and 300 acres of wetland.[4]

One-Way Road Conversions

Along with the highways, one-way street conversions were another roadway retrofit mass-implemented around the mid-1900s to support significant increases in automobile traffic. During this time, with the cultural shift towards the automobile and away from cities, the objective of the transportation network became to move as many cars as quickly as possible across cities and thoroughfares. While successful at moving vehicles quickly and efficiently, these practices often compromise other modes of travel and cause detrimental impacts to traffic safety and community vitality. Higher speeds along roadways reduce visibility of pedestrians and bicyclists and lead to more fatal or high injury crashes.

Policies and practices that prioritize travel by private vehicle over travel by walking, biking, or transit, disproportionately harm people who are low-income and who may not be able to afford a private vehicle (70% of white Bloomington residents take single-occupant vehicles to work compared to 60% of Bloomington's people of color). Because low-income and BIPOC communities typically rely more on alternate modes of transportation, they are impacted by the negative effects of the one-way roadways at higher rates. Across the country, inequities exist related to safety for people of different demographic backgrounds. Smart Growth America found that People of Color (specifically Native and Black Americans) are more likely than other racial/ethnic groups to die while walking. They also found that people walking in lower income areas are killed at higher rates than people walking in higher income areas.[5]

WRONG-WAY MOTORIST—Driver of car left (above) was one of several local motorists who today found themselves going wrong way on Walnut and College after one-way traffic went into effect this morning. Meanwhile, Street Department started working immediately on parking meters and angle parking lanes to make them conform, and no parking signs were hung on meters about Square.

Figure 2: Photo from *Daily Herald-Telephone*, Vol. 79, No. 222 (April 16, 1956)

The converted one-way roads typically become the main thoroughfare for daily traffic. This fact, paired with the fact that drivers are often forced to recirculate to get to their routes, increases VMT, emissions, and noise pollution in concentrated areas. This causes degraded air quality for residents and users along the corridors. Higher speeds and one direction roads also reduce visibility to local businesses. Neighborhoods across the country have seen local businesses close following one-way conversions because they lose visibility and accessibility of visitors.[6] Many cities are restoring one-way

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[2] Roadblock Earth First! (2008). A Look at Resistance to Interstate 69 (Past, Present, and Future). https://inthemiddleofthewhirlwind.wordpress.com/a-look-at-resistance-to-interstate-69/

[3] Sandweiss, Ethan. (2023). A year from completion, I-69 remains divisive. https://indianapublicmedia.org/news/a-year-from-completion-i-69-remains-divisive.php

[4] Indiana Department of Transportation. (2011). I-69 Evansville to Indianapolis Tier 2 Studies – Section 2 Draft Environmental Impact Statement. https://web.archive.org/web/20110726163519/http://www.deis.i69indyevn.org/DEIS_Sec2/2D_Appendix_U.pdf

[5] Smart Growth America. (2022). Dangerous by Design. https://smartgrowthamerica.org/dangerous-by-design/#custom-tab-0-3b878279a04dc47d60932cb294d96259

[6] Walker, Wade, Kulash, Walter, & McHugh, Brian. (2000). Downtown Streets: Are We Strangling Ourselves on One-Way Networks? https://nacto.org/wp-content/uploads/2015/04/Are-We-Strangling-ourselves-on-one-way-networks_Walker.pdf

streets back to two-way streets to reduce vehicular speeds, increase “eyes on the road”, improve pedestrian and bicycle safety, and revitalize local business districts.

In the 1950s, Bloomington saw its own two-way to one-way conversion along College Ave and Walnut St. As with corridors in many cities across the US, College Ave and Walnut St were voted to be designated as one-way roads in 1950s to make the highway routes more convenient for parking and to improve traffic flow. Although this was met with opposition from the public and a new council attempted to reverse the controversial decision, the motion was denied by the state and the one-way streets were declared in 1956.[7]

Housing and Land Use

The neighborhood where a person lives determines what transportation options are safe, available, and accessible for them to use. This, in turn, impacts the spaces and destinations that can be accessed via the available transportation network. Conversely, investment in transit and active transportation infrastructure often corresponds to increased property values. Across the United States, housing policies, zoning laws, and land use practices have a history of being inequitable. Historically, planning and housing policies were regularly weaponized against low income and BIPOC communities to plan disinvestment, concentrate polluting industries, and maintain racial segregation. Today, low income and BIPOC communities are more likely to depend on walking, biking, and transit for travel. These types of projects should bolster these communities; however, transportation infrastructure investments often still lead to gentrification and displacement of residents in low-income areas.[8]

Redlining and Racial Covenants

Around 1916, Black families began to relocate from the South to various cities in the Northeast, Midwest, and West. These families were fleeing aggressive segregationist laws and racial violence in the South. Racial tensions subsequently rose in northern states as competition for jobs increased and large cities became more crowded. Racial violence started to erupt across the US as a result of these growing tensions.

In response, developers and white residents began to integrate racially restrictive language into housing deeds in the 1920s to prevent Black families and other communities of color from accessing quality housing. This language would explicitly ban lots being sold to or occupied by non-Caucasian residents within the property deeds. The practice was reinforced by the real estate industry and National Association of Real Estate Brokers (NAREB), which adopted racial covenants as standard language.[9]

[7] Wiley, Grace. City of Bloomington College/Walnut History Report.

[8] National Institute for Transportation and Communities (NITC). The Transportation, Land Use, and Housing Connection. https://nitc.trec.pdx.edu/land-use-and-housing-research

[9] Evans, Farrell. (2022). How Neighborhoods Used Restrictive Housing Covenants to Block Nonwhite Families. https://www.history.com/news/racially-restrictive-housing-covenants

As Monroe County began to grow through the 1910s, landowners began to regularly place covenants within deed language as land was sold for new development. Much of this language exists in deeds today throughout Bloomington.[10] Beginning in 2021, the Monroe County Recorder's Office developed a project to identify and remove racially restrictive language from these deeds.

The racial covenant practices were further solidified by the National Housing Act of 1934, which introduced and legalized redlining. This law provided white American families suffering through the Great Depression with much needed home-buying aid. But from its inception, the assistance excluded non-white families. The program developed maps that distinguished white and Black neighborhoods to maintain housing segregation. The Federal Housing Administration (FHA) used these maps to systematically deny Black families housing loans and insurance.

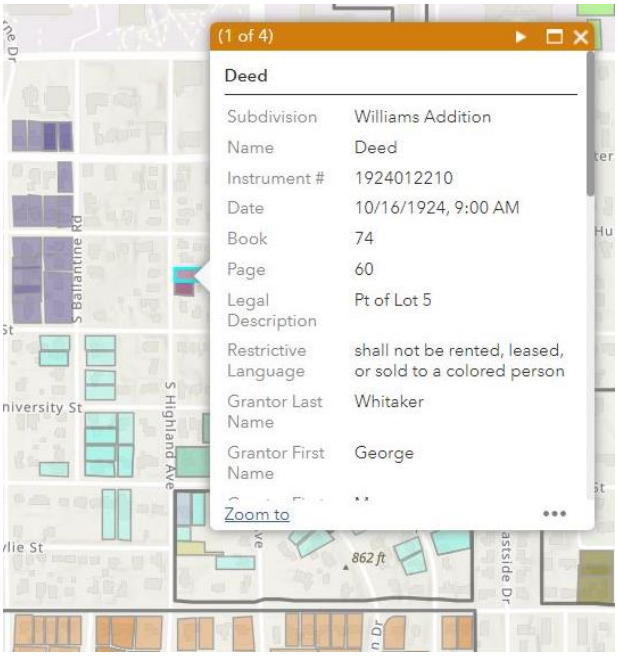

Figure 3: Example Racial Covenant Mapping (Monroe County)

The FHA also used highways and federal housing projects to reinforce barriers between neighborhoods and keep Black residents in areas with fewer resources and services.[11] Aside from denying Black families opportunities for equity and generational wealth, these practices also excluded these families from public services and increased exposure to pollution and environmental hazards.

This has led concentrations of air and water pollution and wide disparities in chronic illnesses and premature death for BIPOC communities, particularly Black and Native American residents. Redlining and racial covenants were not outlawed until the 1968 Fair Housing Act, outlawing all discrimination in housing. However, 30 years of legal housing discrimination had detrimental and lasting effects on low-income and BIPOC neighborhoods. Black residents in Bloomington have reported discrimination by real estate agents and brokers to this day, including being presented with obstacles that were not presented to their white counterparts or being blatantly denied loans for homes in white neighborhoods.[12]

Affordable Housing

Because neighborhoods provide different transportation access and transportation investments influence property values, affordable housing is pertinent to transportation equity discussions. Home and rental prices have skyrocketed in the last 30 years while wages have remained largely flat, impacting families in most American cities across the US. This fact, paired with the recent rise in mortgage rates, has made home buying unattainable for many. Families are forced to rent at higher rates, especially non-white communities. In Bloomington, the Black

[10] Monroe County Records Office. (2023). Monroe County, Indiana's Racially Restrictive Covenants Map. https://gisserver.co.monroe.in.us/portal/apps/storymaps/stories/0309438633e84d78a3d406b93a7421ad

[11] Little, Becky. (2023). How a New Deal Housing Program Enforced Segregation. https://www.history.com/news/housing-segregation-new-deal-program

[12] Legan, Mitch (2021). Black History in Southern Indiana: Racially Restrictive Housing Covenants in Bloomington. https://indianapublicmedia.org/news/black-history-in-southern-indiana-racially-restrictive-housing-covenants-in-bloomington.php

homeownership gap in 2022 was 33.7%, with only 31.4% of Black families owning homes and 65.1% of white families owning homes.[13]

Around 66% of the Bloomington housing stock is rental, which continues to rise as new rental developments are built and home buying becomes less attainable. Bloomington single family housing and rental unit costs are among the highest in the state. There is limited affordable housing near the city center, and limited transportation options to connect people outside of the city center to the university, schools, jobs, groceries, entertainment, and other services. While there is not a shortage of housing units for high-income residents, there are only 24 adequate affordable housing units to serve every 100 extremely low-income household (households making 0-30% of the Area Median Income of $33,172). The most cost-burdened residents are concentrated downtown and around the campus, come in low-income concentrated areas where people are already at a disadvantage to afford daily needs. Further, there is a growing need and demand in Bloomington for accessible and senior housing.

It is important to note that affordable housing is not only connected to transportation, but also affordable food, healthcare, and childcare. Often, affordable housing areas are further from city centers and further from goods and services, with less safe and accessible transportation options to assist with additional distances. Alternatively, residents that are willing to pay more of their income to unaffordable housing (housing is considered "affordable" when someone spends less than 30% of their gross income on housing) to live close to daily destinations are considered "cost-burdened". This means they may not be able to pay for their other monthly needs, such as quality food or medical care.[14]

While the City has increased housing availability through new developments throughout the city, much of these are luxury complexes or are otherwise unaffordable to the average household. Students tend to feel forced to rent too-expensive housing to be close to the university, while non-student households may need to relocate for cheaper housing as the rent and property taxes are driven upward.[15] Bloomington has implemented initiatives that aim to build enough affordable housing for residents to remain close to the city and to keep up with the growing student populations.

In the 2000s, there was a shift back to the cities from suburban areas, but there was also a trend of restricting construction of housing units which drove up the price of housing in desirable urban areas. Zoning discrimination has been outlawed, yet exclusionary zoning practices are still common today through restrictions on land uses, lot sizes, and number of units on properties. Parking requirements,

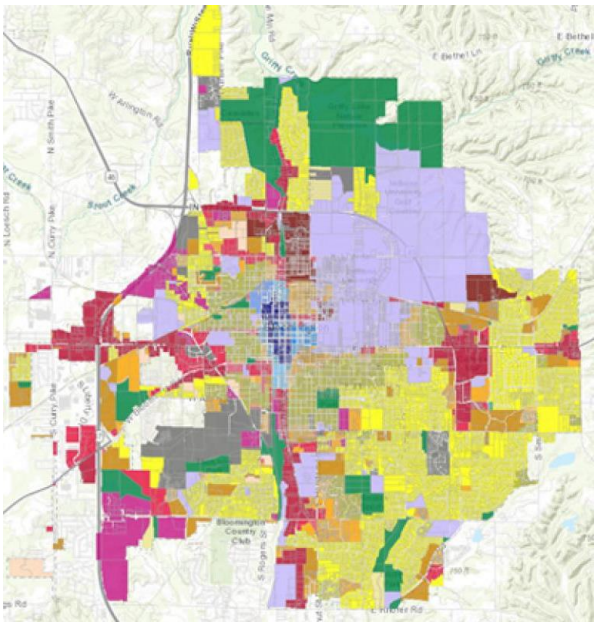

Figure 4: UDO Zoning Map

[13] Stacker. (2022). The Black Homeownership Gap in Bloomington. https://stacker.com/indiana/bloomington/black-homeownership-gap-bloomington

[14] Bloomington Affordable Living Committee. (2019). Report on Affordability. https://bloomington.in.gov/sites/default/files/2021-04/Working%20Hard%20Falling%20Behind%20--%20Flat-%20Built%201%20November%202019.pdf

[15] Moser, Nick. (2023). The Problem with Bloomington Apartments and Rising Rent. https://www.idsnews.com/article/2023/02/bloomington-apartments-rising-rent-problems#:~:text=For%20the%202022%2D2023%20school,they%20are%20building%20luxury%20apartments .

building setbacks, and other design regulations also undermine affordable housing potential.[16]

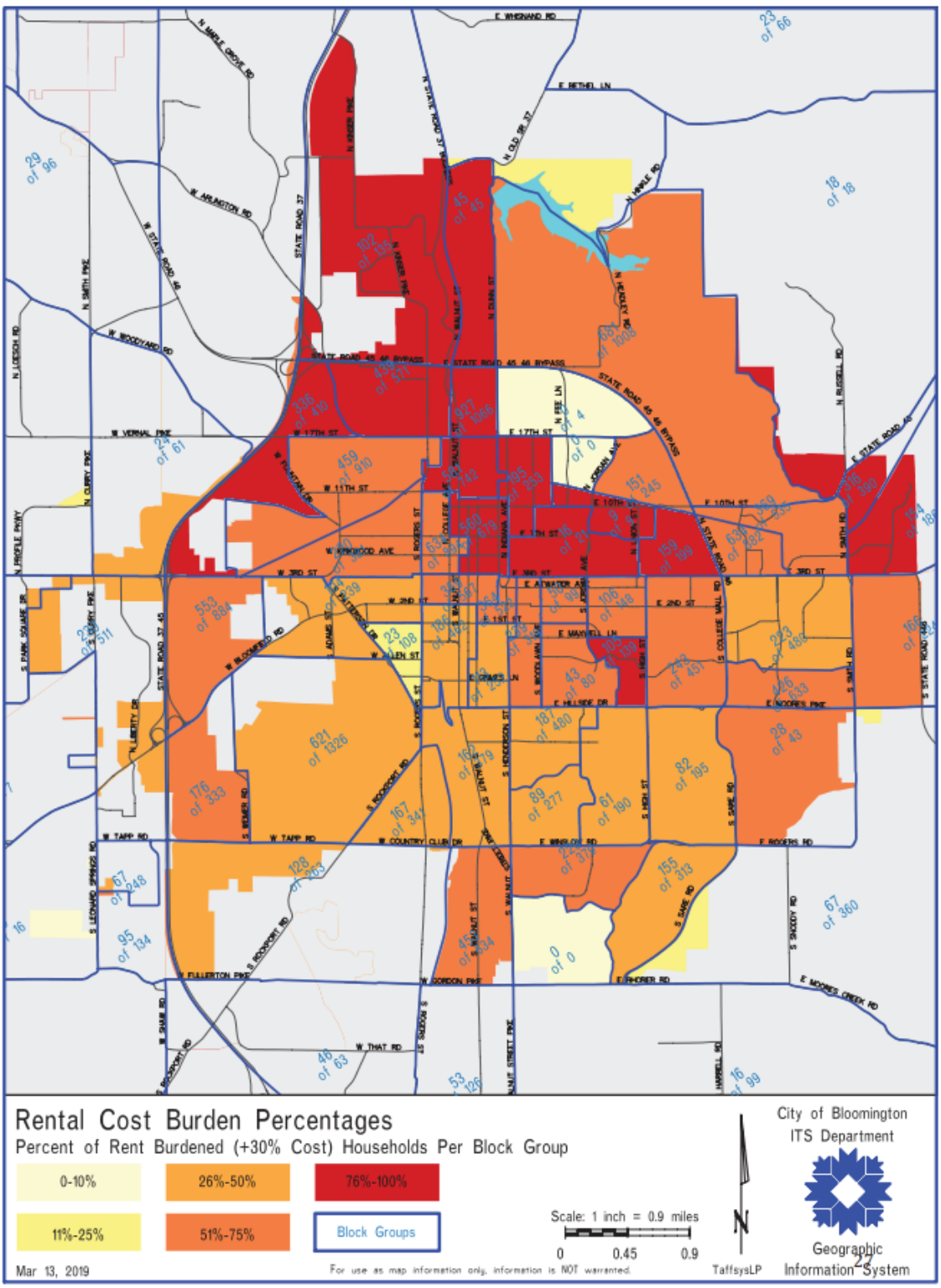

Figure 5: Rental Cost-Burden Percentages (Bloomington Affordable Living Committee)

[16] Planetizen. What is Exclusionary Zoning. http://www.planetizen.com/definition/exclusionary-zoning

Through the Bloomington Unified Development Ordinance (UDO), zoning changes will allow more mixed-use student housing that is campus accessible, additional parks and open space protection and preservation, and expanded multi-family housing (especially duplexes and triplexes). This is intended to diversify housing, create more affordable housing, and reduce dependency on vehicles, allowing more people to live near downtown.[17] The UDO has also implemented incentives for affordable housing in new developments, which is increased if there are select sustainability features. There are various federal and local funds and organizations whose missions are to assist those experiencing homelessness and low to medium income residents.

Displacement and Gentrification

Low-income, BIPOC, and other marginalized groups have been intentionally and unintentionally displaced from their neighborhoods throughout American history. This can take the form of physical displacement, either direct or indirect, or cultural displacement.

As discussed, BIPOC neighborhoods have been strategically selected for destructive infrastructure, such as highways, polluting industries, and disinvestment. This can force people to move out to make way for the development of these projects or cause them to leave over time due to neighborhood degradation.

For decades displacement has also been closely linked with gentrification. Gentrification refers to the ways in which a neighborhood is changing, while displacement refers to the impact on people that live in said neighborhood.

Gentrification is largely the process of white or higher-income residents moving to a historically marginalized neighborhood. This is often because these neighborhoods typically have cheap housing and development opportunities. When white flight led to suburban sprawl through the 1960s and 1970s, the property value of many urban areas drastically declined.

Over the last 30 years there has been an influx back to the city. These urban areas that were undesirable then, are now more desirable due to their convenient locations close to city centers. Further, many of the features that once made these areas undesirable, such as old or industrial buildings, are now prime features for art and historic districts. Many of these city neighborhoods are primarily BIPOC or other marginalized residents that could not afford to follow the exodus to the suburbs, who are now being pushed out of their neighborhoods as high-income residents return to urban areas and developers capitalize on the opportunities.

An influx of quality goods, services, housing, and infrastructure typically follows high-earning residents, causing property values to quickly rise. Even projects that are intended to serve low-income residents, such as transit or active transportation facilities, if unchecked and not paired with anti-displacement strategies, can unintentionally cause gentrification by making the neighborhood more desirable. Gentrification can result in physical displacement by raising costs of living, eminent domain for new projects and developments, or predatory investment strategies to skew property values. Vulnerable residents are often convinced by property speculators or forced to sell their home, typically much lower than fair market value.

Physical displacement can also occur through evictions, lease non-renewals, discriminatory real estate practices, and exclusionary zoning. As neighbors and businesses are replaced with new people and developments, other long-time residents may also feel pushed out by the transformation of their neighborhood.[18] This can further

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[17] Charron, Cate. (2021). Rezoning: Explained. http://specials.idsnews.com/bloomington-indiana-udo-zoning-districts/

[18] The Uprooted Project. (2023). Understanding Gentrification and Displacement. https://sites.utexas.edu/gentrificationproject/understanding-gentrification-and-displacement/

impact these residents as they are forced to move further from their jobs and regular activities if they do not have access to safe or affordable transportation.

Gentrification itself does not cause displacement of long-time residents, but the effects of gentrification do lead to displacement. With intentional policies, programs, and practices, involuntary displacement can be prevented. Discussions around residents being displaced by new housing, park space, the convention center, and other development projects are ongoing in Bloomington. Even the rezoning project allowing duplexes and triplexes on single family lots, which are intended to allow more affordability for homeowners and potential renters, runs the risk of developers taking advantage of multi-unit properties to further raise housing costs.[19]

Dedicated and consistent funding, business support, housing support, thorough engagement, project communication, and updated policies are strategies that can prevent displacement in the community. Safety and infrastructure projects intended to improve conditions in neighborhoods should be preceded by anti-displacement policies and strategies so that these residents are not forced out as a result of neighborhood infrastructure improvements.

Law Enforcement

Enforcement is conventionally viewed as a key component of achieving transportation safety and compliance. For this reason, an understanding of law enforcement policies and practices in Bloomington is important for the Safe Streets for All Action Safety Plan and other transportation initiatives. Transportation enforcement has a discriminatory history throughout the US, impacting the level of safety on public streets and in public spaces for specific members of the community. BIPOC, especially Black residents, are more likely than white residents to be pulled over, have their car searched, be pulled over on a bicycle, be stopped by a cop while walking, and be ticketed on transit.[20] Enforcement discrimination can cause a mobility issue for marginalized communities, such as BIPOC and LGBTQ people. Some cities have implemented anti-harassment programs, hired unarmed personnel for transportation enforcement, and increased engagement between the community and law enforcement members.

While only 4% of the Bloomington population, Black residents make up 23% of arrests and are nearly 5 times more likely to be arrested for low level, non-violent offenses.[21] However, efforts such as the Police Department LGBTQ+ Liaison Task Force, reporting of hate crimes to the FBI, the Future of Policing Task Force, and anti-discrimination actions by the police department and other city leaders strengthen trust and ties to the community. When law enforcement is not a threat to any member of the community, this helps create a safe public environment for everyone and empowers vulnerable groups to use public infrastructure and services, such as transit and bike lanes.

Climate Resilience

Climate and transportation equity are closely tied in a variety of ways. As extreme weather events increase, risk to transportation infrastructure and transportation users increases. Replacement, repairs, and regular maintenance needs for infrastructure will continue to increase. Damage and maintenance issues to infrastructure can disrupt users by causing safety and convenience issues. Transportation users will not only be impacted by damage to the infrastructure, but also by the climate impacts themselves. Increase in flooding, extreme heat, snow and precipitation can be a safety barrier for transportation users. This is particularly true for bicyclists, transit users,

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[19] Sturbaum, Chris. (2023). A Zoning Debate in Bloomington, Indiana. https://www.cnumidwest.org/single-post/a-zoning-debate-in-bloomington-indiana

[20] Barajas, Jesus. (2021). Biking Where Black: Connecting Transportation Planning and Infrastructure to Disproportionate Policing. https://www.sciencedirect.com/science/article/pii/S1361920921003254

[21] Police Scorecard. (2023). Bloomington Police Department. https://policescorecard.org/in/police-department/bloomington

and especially pedestrians, the most vulnerable user of the transportation system. These also happen to be the modes of transportation that underrepresented groups rely on more than their represented counterparts.

Climate impacts disproportionately impact low-income, BIPOC, and other marginalized groups, who are typically the least responsible for climate change. The transportation sector is a large contributing industry to greenhouse gas emissions, which degrade both air and water quality. Infrastructure funding, reducing climate impacts, and combating climate-change contributors in all communities is vital for the future transportation networks. Equitably implementing climate solutions and interventions will improve the transportation safety and reduce threats of climate related displacement.

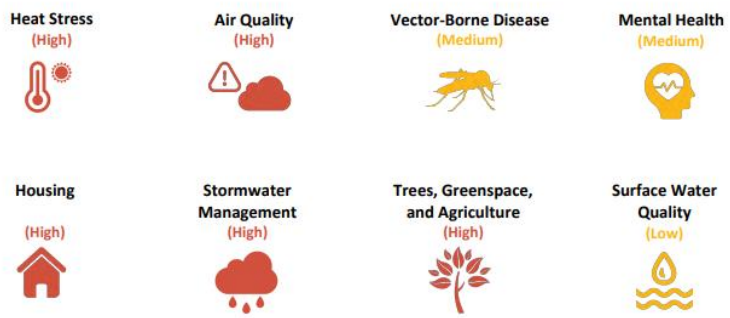


Figure 6: Bloomington Climate Change Vulnerabilities (Climate Action Plan)

Heat stress, air quality, home costs and damages, stormwater management, and trees, greenspace, and agriculture were found to be the highest vulnerability areas for climate risks in Bloomington. These vulnerabilities will likely impact low-income and marginalized residents who may be in higher risk areas, rely on walking, and biking, and public transit, and have limited options for relocation and protecting themselves from climate impacts. 63% of commuters drive alone and 61.4% of vehicle miles traveled (VMT) are single-occupancy vehicle trips in Bloomington.[22] By implementing green infrastructure, climate policies and funding, sustainability incentives, greenspace and nature preservation, and other solutions, the city can build climate resilience and bolster the community against climate change. Integrating these solutions within transportation projects can improve the safety, accessibility, and convenience of the transportation network for all mode types and users.

Relevant Plans and Studies

The City of Bloomington has adopted a variety of plans and other initiatives that aim to build a safe and equitable future for the community. While not all of these plans are transportation-focused, the solutions and recommendations often overlap with transportation as described in the previous section. The project team conducted a review of these transportation and related plans, policies, and studies to identify where solutions may overlap with transportation equity considerations. Table 1 describes the findings of this equity framework assessment. A broad summary of these plans and policies can be found in the Existing Conditions section of this plan.

[22] City of Bloomington. (2021). City of Bloomington Climate Action Plan. https://bloomington.in.gov/sites/default/files/2021-04/Bloomington%20Climate%20Action%20Plan%20040521%20Reduced.pdf

Table 1: Transportation Equity Considerations in Relevant Plans and Studies

Plan, Policy, or Study	Description	Transportation Equity Applicability
Bloomington Indiana Urban Forest Assessment	This is a comprehensive assessment of the City of Bloomington's urban tree forest. It identifies current and potential tree canopy coverage, priority planting levels, and heat intensity areas and sets goals for greenspace and ecosystem health.	Trees provide heat protection, stormwater management, improve air quality, and assist energy conservation. White, high-income neighborhoods typically have more tree canopy coverage than non-white or lower-income neighborhoods. Street trees can be used to create inclusive spaces, mitigate the effects of climate change, and strengthen the community.
City of Bloomington 2022 Future of Policing Task Force Initial Report	The task force, made up of various community leaders and members, conducted an analysis of law enforcement policies and practices and provided a set of recommendations for the police department.	Analysis of policing procedures and recommendations for policing improvements have the potential to combat discriminatory policing practices, provide police officers with resources needed to adequately serve all residents, and improve the public perception of the police department among community members. This in turn improves public safety and perception of safety in public streets and spaces.
City of Bloomington 2021 Climate Action Plan	This plan establishes a comprehensive vision for climate resilience in the Bloomington community. The report provides analysis of existing conditions and recommendations for areas of focus to address climate change.	These recommendations include actions to improve multimodal travel options, improve pedestrian safety, expand Complete Streets, and address greenhouse gas emissions. These efforts can improve public health by reducing pollution directly, as well as indirectly by reducing car use. These actions can also make transportation more accessible and affordable for the community.
City of Bloomington 2020 Plan to Advance Racial Equity	This plan was developed to evaluate City policies and programs and propose recommendations to address racism and other types of discrimination in Bloomington. This plan established a set of goals and action items for anti-racism and anti-discrimination, including developing two task forces.	Anti-racist and anti-discrimination efforts in the City can help to create a safe and inclusive space for all member of the community, particularly underrepresented groups. These actions aim to address potential issues internally in City departments, and externally in the community. Fostering a culture of equity and connection will create safe environments in all public spaces.

Plan, Policy, or Study	Description	Transportation Equity Applicability
City of Bloomington 2019 Divided Community Project Report	Sparked by the Farmer's Market controversy[23], this project was conducted to complete deeper analysis of social issues and discrimination that led to the Market controversy. This project employed a task force to provide guidance, conduct interviews with the community, and develop recommendations to address long-standing issues around discrimination in the community.	This effort is a step towards informing people about any problematic history in Bloomington, understanding discrimination that occurs in the community today, uplifting voices of marginalized groups and residents in the city, and developing actions to create a more inclusive community. Elevating BIPOC voices, combating antisemitic and discriminatory behavior, and raising concerns over housing and gentrification are most directly applicable to transportation system planning.
City of Bloomington 2019 Transportation Plan	This project provides a comprehensive plan for the future transportation system. The plan includes an analysis of the existing network and a recommended multimodal network and program.	The recommended network, projects, and policies in this plan aim to lower transportation costs, provide better access to multimodal transportation, improve connections across Bloomington, improve the health of the community, and reduce traffic burdens. These are especially beneficial to those that rely on active transportation and transit for transportation.
City of Bloomington 2018 Comprehensive Plan	This comprehensive plan sets a vision, goals, and action items to create a sustainable community and high-quality of life for all community members. This acts as the foundation for city planning and policies.	The plan highlights equity considerations for housing, environmental, and transportation efforts. The transportation objectives and action items aim to make the multimodal network more efficient and expansive, providing safe and effective transportation options for all members of the community.

[23] Healy, Jack. (2019). Amid the Kale and Corn, Fears of White Supremacy at the Farmers' Market. https://www.nytimes.com/2019/08/18/us/indiana-farmers-market-white-supremacy.html

Equitable Project Process

As part of the Safe Streets for All effort, this Equity Framework has identified Communities of Interest (COI) – census tracts that have higher densities of the priority demographics listed below. These groups consist of populations that have been underinvested in or otherwise marginalized throughout history in terms of transportation related planning practices. The SS4A Safety Action Plan will utilize the COI geography when conducting equity analyses and data-based prioritizations. The project team will also use COI geography to determine appropriate locations for engagement and outreach activities.

Priority Demographics

The following demographic groups have been identified as vulnerable to underinvestment or marginalization through transportation and other planning projects.

- Black, Hispanic/Latino, Indigenous, Asian, and other People of Color
- Low-Income Households
- People with Disabilities
- People with Low English Proficiency
- Students
- Children
- Elderly Adults
- People with Limited Vehicle Access
- Cost-Burdened Renters

Equity Safety Analysis

The following analyses will be conducted and assessed with this equity framework to understand how the priority demographics can be accommodated by this Safety Action Plan.

- Existing Conditions
  - » Home Ownership
  - » High Heat Intensity
- Historical Trends
- Systemic Safety
- Crash Data
- High Injury Network

Community Engagement

Community engagement is a critical piece of the Safe Streets for All Safety Action Plan. The project team intends to conduct inclusive engagement in alignment with the principles of this framework to improve equity in both process and outcome. As described in this document, the historical exclusion of marginalized communities in transportation planning and decision making has resulted in these communities having less access to safe, comfortable, convenient, and otherwise desirable transportation. This includes bike, walk, roll, and transit options. Inclusive and meaningful engagement is a step towards addressing past wrongs and preventing the perpetuation of past harms in future planning efforts.

Historically, community engagement efforts for transportation projects have attracted people who are already comfortable interacting with government agencies and have the time and resources to participate in engagement activities. Further, many members of the public have limited time to attend events, lack access to reliable internet for online engagement, or do not trust decision makers to adequately listen to their feedback because of historical wrongdoings. This often means people who are most impacted by a project do not get the opportunity to express their opinions, provide feedback, or assist in decision-making. More inclusive and equitable engagement can better help the City of Bloomington develop infrastructure and safety projects, policies, and programs that meet the needs of all residents.

Approach

The SS4A Safety Action Plan project team will intentionally engage community members who are diverse in age, race, income, ability, and language, and those who bring life experiences and expertise often missing from existing data and transportation decision-making groups. Aside from desiring to correct inequities in planning, by conducting inclusive engagement, planning projects and programs can achieve higher quality outcomes by including diverse backgrounds and perspectives. To maximize the input and guidance on the Safe Streets for All Safety Action Plan received from priority demographics living in the Communities of Interest, the project team will follow best practices for equitable engagement including:

- Successful community engagement should end with both the project staff and stakeholders feeling that their expectations were met. The International Association for Public Participation (IAP2) has created the Spectrum of Public Participation, which can help practitioners honestly select and match the goals of their participation effort with their commitment to the public (see Figure 7). While no level of the spectrum Inform, Consult, Involve, Collaborate, or Empower – is better than the other, the project team will ensure that there is honest communication with community members about the purpose of the various outreach strategies that will be employed. Full disclosure on the level of engagement is especially important when engaging historically marginalized communities – these communities have historically been on the "inform" level and, as a result, many planning projects have simply happened to them without their input. This reality is not forgotten within communities and it will take consistent and diligent work to build trust in these communities.

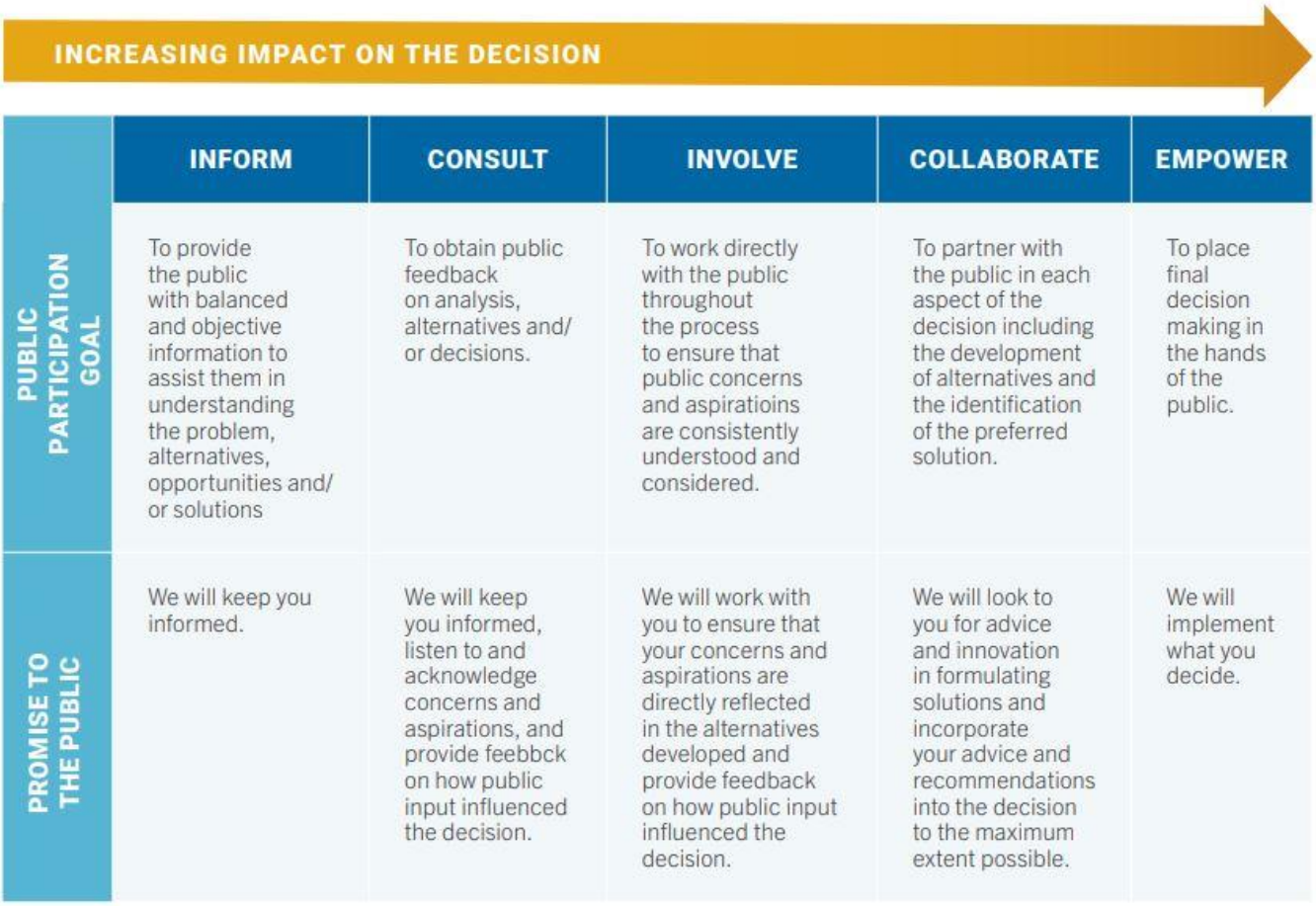


Figure 7. IAP2 Spectrum of Public Participation (source: www.iap2.org).

- The project team will prioritize strategies that allow for meaningful engagement of priority demographics including in-person events (safety week, pop-ups, open house, community group meetings, in-classroom presentations/workshops, and committees) and virtual opportunities (website updates, e-blasts, social media posts, online polls, online interactive activities).
- When identifying locations for outreach activities the project team will focus on popular and/or strategic locations within Communities of Interest. The project team may consult with organizational partners and local community leaders for advice on locating outreach activities.
- It is important that the project team members who are in the field deploying engagement strategies and discussing the planning process with residents are demographically representative of the populations they aim to engage. Therefore, the project team members deploying engagement strategies will be diverse in race, gender, age, cycling comfort, and lived experience.
- Specific engagement materials will be provided in languages aside from English that are commonly used by Communities of Interest. As appropriate, the project team will coordinate live interpretation for engagement and outreach activities that aim to reach Spanish residents.

Table 2: Priority Engagement Outreach Groups

Core Factors Outreach efforts will prioritize engaging these populations to exceed the diversity of the city:	• Black, Hispanic/Latinx, or other person of color (consistent with categories used by the Census Bureau) • Earning less than 80% of the median household income • High rental cost-burden (over 51%)
Intersectional Factors Outreach will seek to engage a diverse set of people that represent one or more of the core factors as well as one or more intersectional factors:	• No access to a car or don't drive • Low-AMI (0-50% of average) • Frequently walk, bike, or ride transit for transportation • Women or non-binary people • Have limited English proficiency • Are LGBTQIA+ • Have a physical or mental disability • Over the age of 65 • Young Adults (18-30) • University students • Under the age of 18 (teens who make their own mobility decisions) • A different national origin than the U.S. • Immigrant or refugee • Have high housing cost burden • Families with young children (under 12) • Are single parents

Engagement Goals

The public participation process will invite stakeholders to articulate how transportation safety infrastructure, programs, and policies impact their quality of life. Our intention is to engage the public around the conditions that determine where infrastructure can be placed, the programs that can be developed, and policies that can be revised. We respect the value the community brings to this process and warmly encourage their involvement through the development of the plan.

The principal goals of public outreach are to:

1. Implement a process that is equitable and accessible, with an emphasis on uplifting voices from the "Core Factor" (Table 2) groups, being the groups of focus for transportation equity.
2. Prioritize engagement with historically underrepresented and underserved stakeholders by collaborating with key community organizations with access and credibility to these populations, and by valuing this expertise through incentives and/or compensation for time.
3. Create awareness of the Safe Streets for All Safety Action Plan, the public input needed, and the overall process.
4. Present information in a manner that respects native languages and is culturally appropriate.
5. Provide a variety of methods for public participation that are accessible in terms of language, technology literacy, location, and time so that prioritized individuals or groups may easily participate in the process.
6. Gain substantive insights from the public to inform the plan's goals, network, recommendations, and priorities.
7. Communicate how transportation safety infrastructure, policies, and programs support the larger goals of the City around equity, connectedness, economic growth, and vitality.

To ensure the efforts and outcomes are aligned with the outreach goals and equity framework, the project team will continually measure outreach and provide periodic updates on public participation throughout the planning process.

Success Measures

We will document who participates in the process. The intent of this project is to prioritize participation of Black, Hispanic/Latino, Indigenous, Asian, and other People of Color, as well as people in low-income households, students, people with disabilities, and people residing in Communities of Interest. During each engagement activity, the team will ask for personal data from participants to ensure the process is engaging with a diverse set of residents. The data will help the team identify any gaps or potential areas for improvement and serve as general metrics to measure the plan's effectiveness and overall performance. The key data considerations include:

- Race/Ethnicity
- Age
- Gender
- Primary language spoken at home
- Disability status
- Residential ZIP Code
- University student
- Contact Information – provided when opting in to receive email communications
- Income
- Rent or own home
- Modes of travel regularly used

Note that for some engagement activities (e.g., pop-up or intercept events) it may not be feasible to collect all of these data points. At a minimum, the Team will seek to document the participant's residence ZIP code, race, and age. The Team will also track the number and impact of engagement activities throughout the project. Metrics for this effort include:

- Online interactive map analytics
- Survey participation
- Event attendees
- Social media analytics
- Demographics of individuals engaged (age, race, location, etc.)
- Number of individuals submitting feedback
- Participation in neighborhood events

Equity Framework Flow Chart

The Equity Framework Flow Chart will be a tool to inform the planning process and project selection and prioritization for Safe Streets Approach projects that center communities most impacted. Figure 8 below illustrates how the six principles of equitable transportation, identified in this document, inform the evaluation of planning process decisions across three general categories: Engagement methods; Analysis methods; and Recommended project, policy, or program.

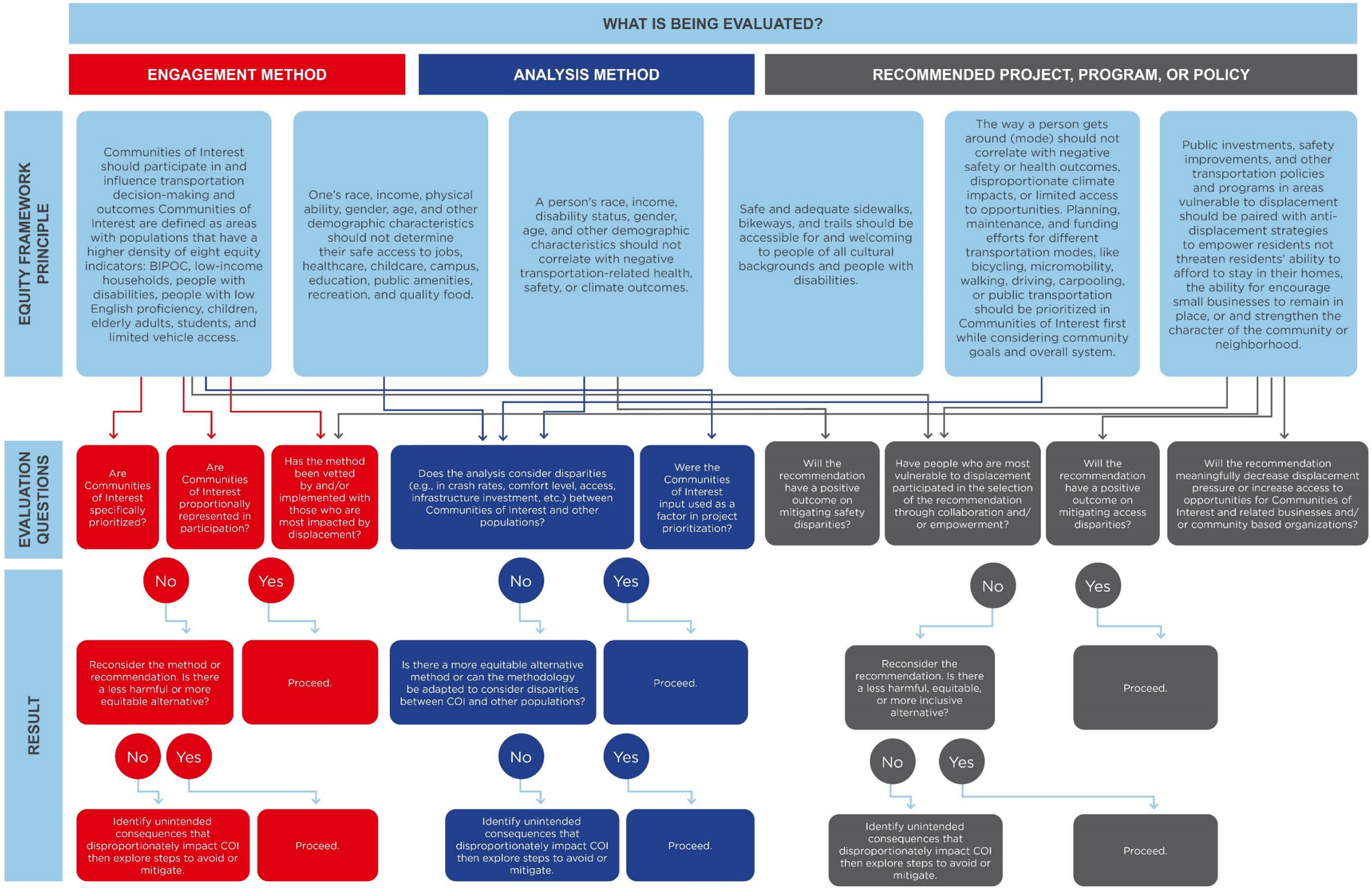
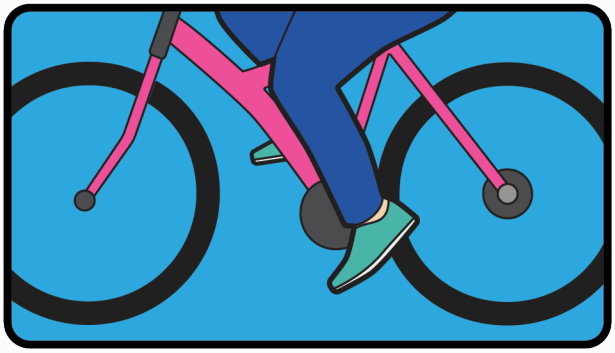
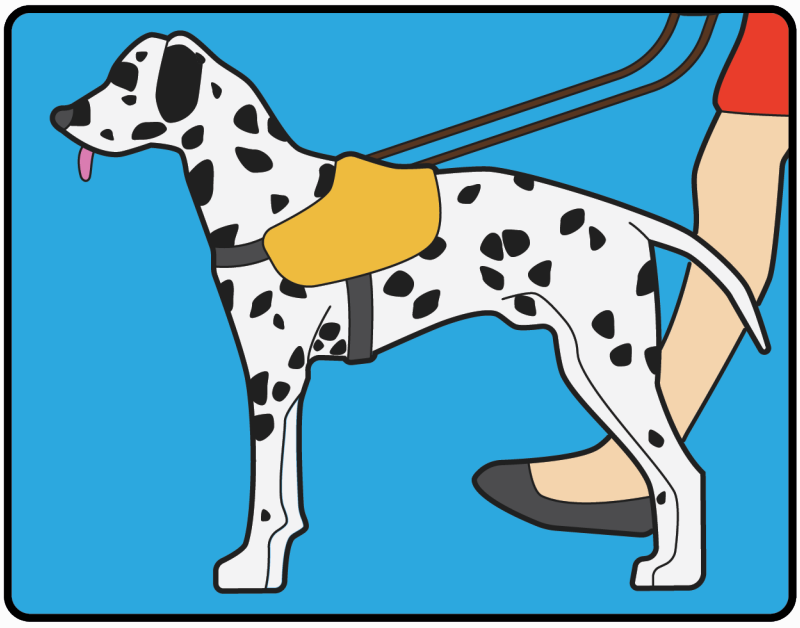


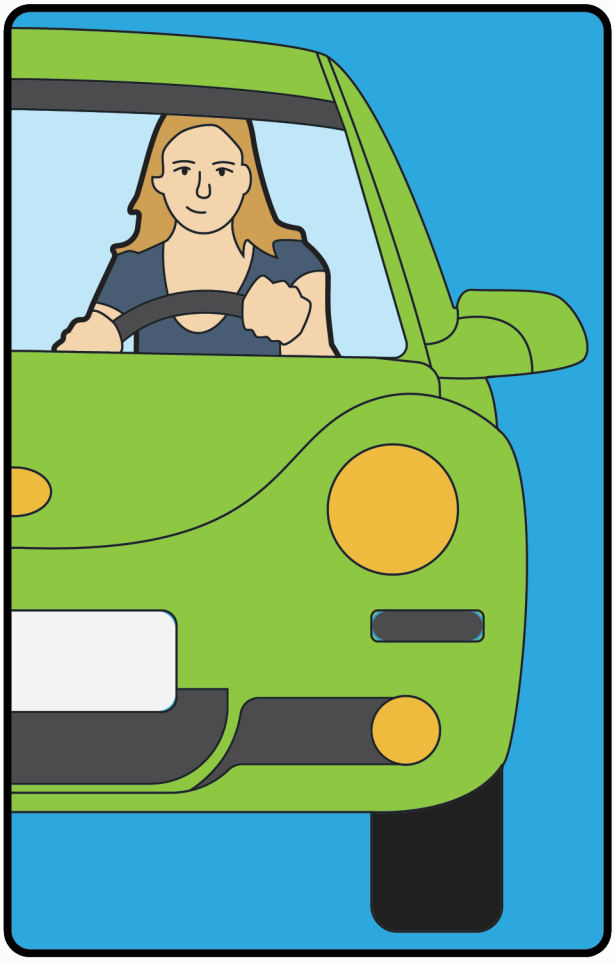
Figure 8: Equity Framework Flow Chart

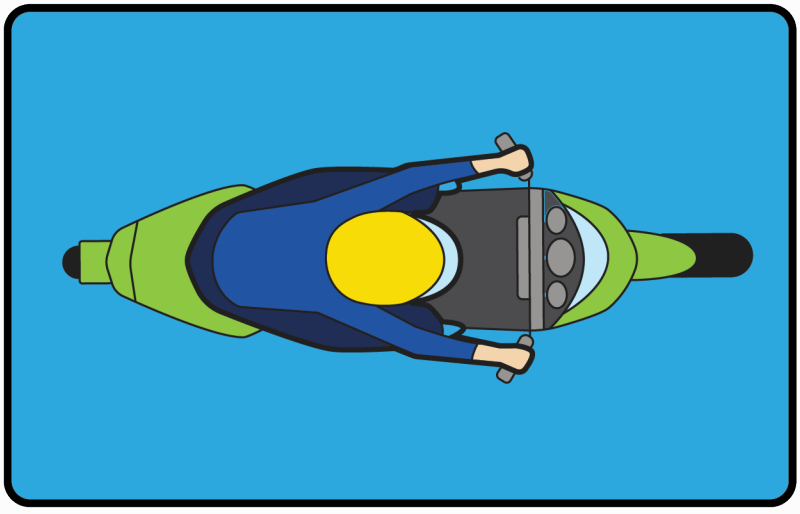
BLOOMINGTON

SAFE STREETS FOR ALL









Appendix B: Public Engagement Overview

July 2024

Background & Purpose

This memorandum summarizes the public input methods and results gathered as part of public engagement efforts for Bloomington Safe Streets and Roads for All (SS4A) Action Safety Plan in Spring 2024. The public engagement for the Bloomington SS4A Safety Action Plan aimed to gather public input that would help the project team on the following tasks:

- Identify general transportation safety concerns.
- Identify unsafe locations throughout the city.
- Identify opportunities to improve roadway safety.
- Assist in developing and affirming the High Injury Network.
- Inform the development of implementation strategies and projects.

The engagement strategies for the Bloomington SS4A Safety Action Plan emphasized the following:

- Including various in-person and virtual outreach events.
- Inform the development of implementation strategies and projects.
- Engaging jurisdictional staff and a SS4A Steering Committee that can help guide plan development and provide direction on implementation.
- Attracting a broad and diverse audience, reaching beyond transportation safety advocates, and engaging people of all ages, abilities, genders, races/ethnicities, languages, and incomes throughout Bloomington.
- Prioritizing Communities of Interest (COI) in engagement outreach to ensure historically marginalized voices are included.
- Utilizing City of Bloomington communication methods and community partners to promote the project, direct people to project resources, and announce project meetings and engagement opportunities

Equitable Engagement

Community engagement provides local governments with key information and local expertise that may not be available anywhere else and is often required to receive federal, regional, state, or local funding. Conducting equitable engagement invites people to reflect on their lived experiences and bring their unique perspectives to the conversation in order to correct past planning wrongs and prevent inequities in future planning efforts.

Equitable engagement makes special effort to search out and listen to voices of Communities of Interest (COI) including BIPOC, low-income households, people with disabilities, people with low English proficiency, children, elderly adults, students, limited vehicle access households, and other groups who have intentionally and unintentionally been excluded from transportation planning efforts and decision-making in the past. This exclusion from prior community conversations, along with other factors, generally results in having less access to safe, comfortable, and convenient transportation, being overrepresented in serious and fatal crashes on our roadways and being displaced by transportation projects and planning efforts.

The engagement methods used as part of the Bloomington SS4A Saefty Action Plan were intentionally designed to be welcoming and engaging for historically marginalized communities. The project team worked to ensure that COIs felt empowered that their input can influence transportation decision-making and outcomes.

Participant Demographics

The project team gathered demographic data from about 450 webmap participants and 100 evening event attendees (more details on these methods are later in the memo). The following graphics show how the participant demographics compared with each other as well as with Bloomington's overall population. In general, webmap participants were more likely to be white, own their home, be highly educated, and older than Bloomington residents as a whole. Those that participated in evening events were more representative of Bloomington residents, especially in terms of race, home ownership, education, and income.

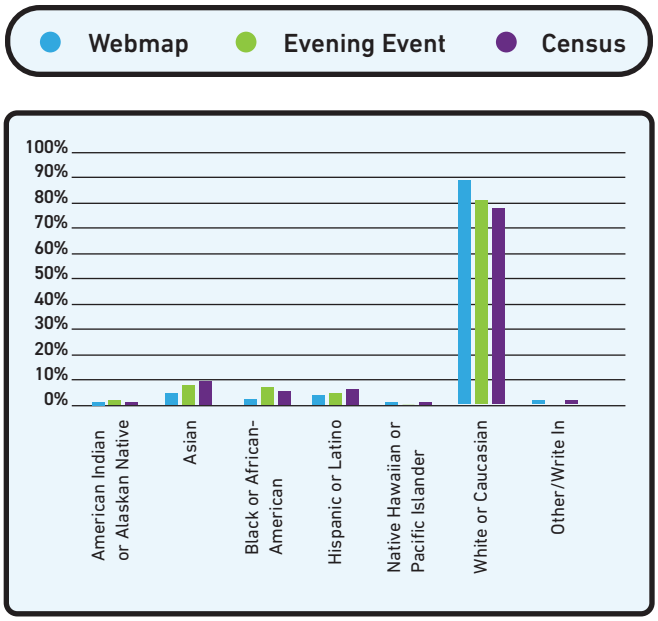


Figure 1. Race and ethnicity of public engagement participants

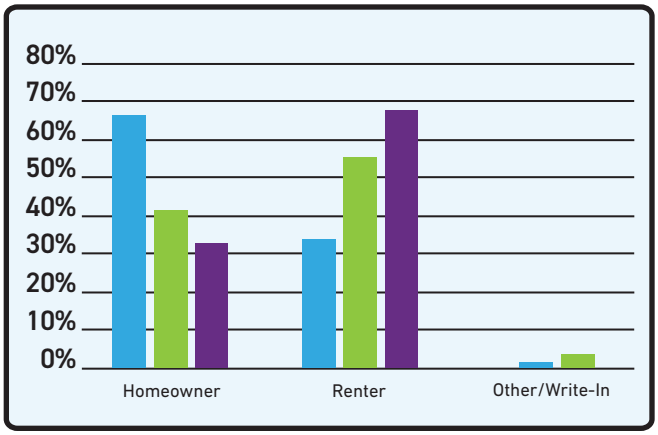


Figure 2. Housing situation of public engagement participants

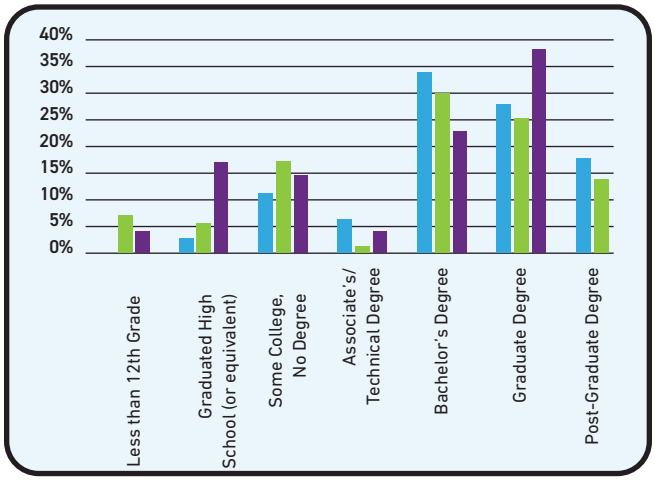


Figure 3. Highest level of education completed for public engagement participants

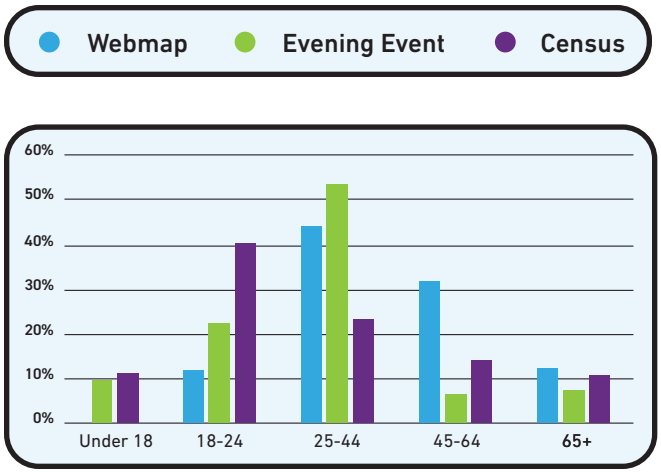


Figure 4. Age of public engagement participants

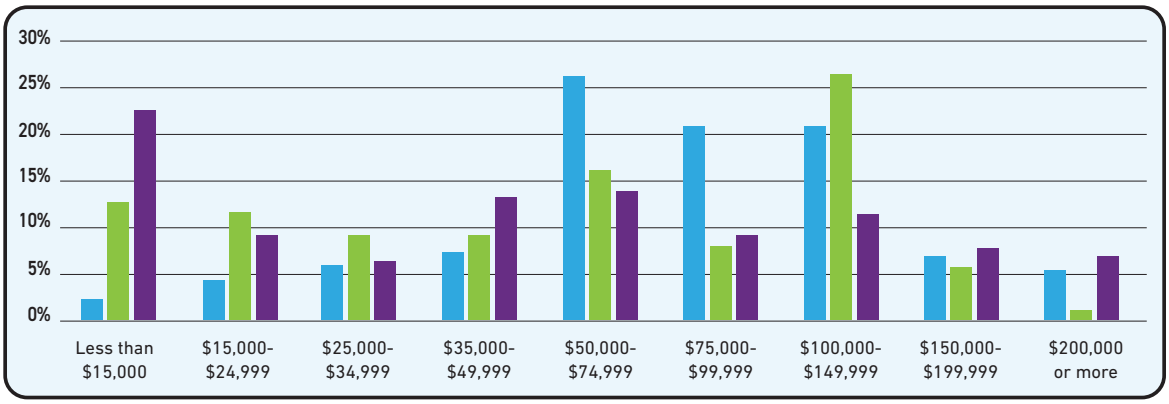


Figure 5. Income distribution of public engagement participants

It should be noted that neither the webmap nor evening event demographics align perfectly with Bloomington residents. Pop-up events conducted during Safety Week were intentionally located in areas frequented by younger, more diverse residents, including those with varying levels of education.

Engagement Methods

The project team used a diverse set of engagement strategies, both virtual and in-person, to reach a wide variety of Bloomington residents. An interactive webmap served as the primary virtual engagement option, and in-person opportunities were conducted during "Safety Week," a one-week engagement action that included many different techniques and locations. The following sections describe both efforts in detail.

Interactive Webmap

The project team prepared and administered an interactive webmap and survey that served as the primary virtual engagement method. This tool allowed participants to pinpoint locations and/or corridors where they experience safety concerns and leave comments on key issues and opportunities. Decision-making and outcomes.

The map had three distinct parts:

1. Landing Page. This was the participant's first view of the online webmap where they could learn about the project and the role of the webmap.

2. Intro Survey. The survey collected demographic information on who contributed to the webmap.

3. Interactive Webmap. The webmap let respondents enter points directly onto a map to indicate locations where they felt safe or unsafe. Respondents could also provide comments on the area selected, such as highlighting existing conditions, describing an experience that made them feel safe or unsafe, or proposing safety improvements.

Approximately 450 individuals left feedback – either through the survey or webmap. Just over 1,000 "safe" or "unsafe" points were placed on the map.

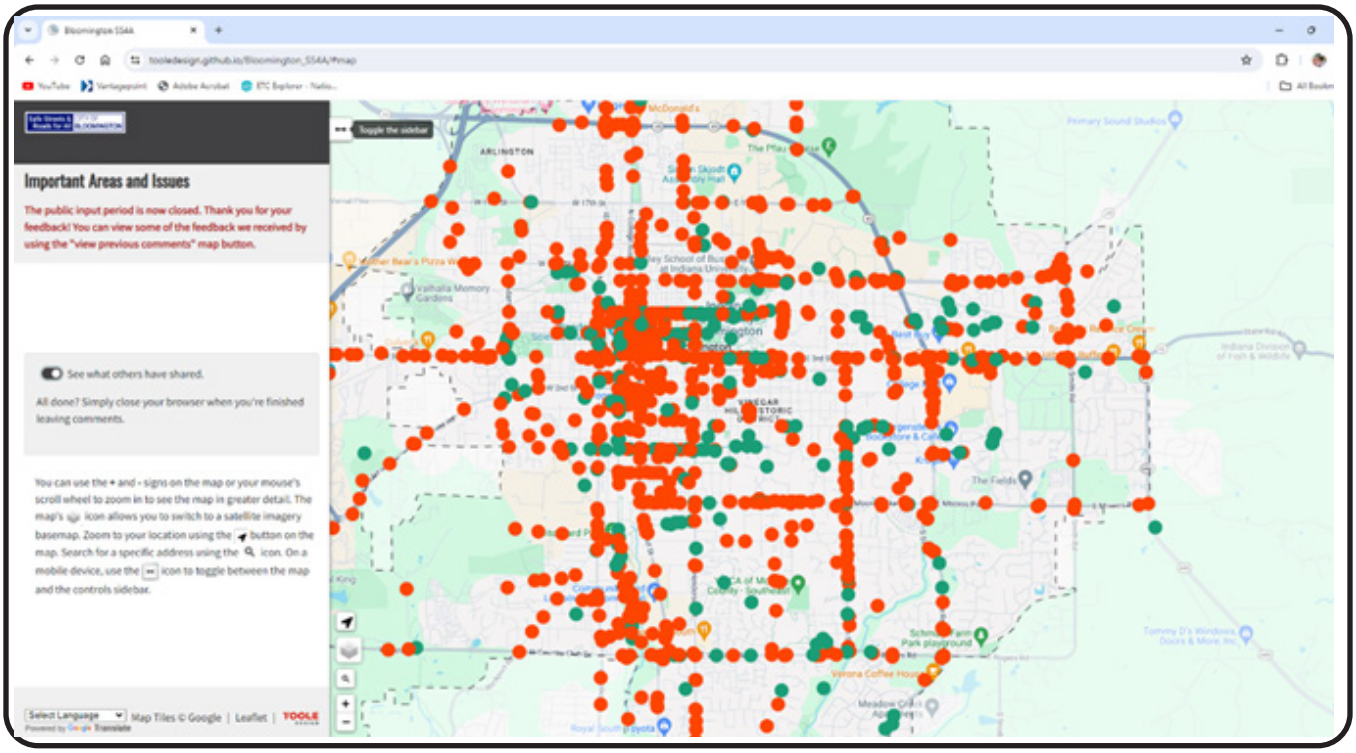


Figure 6. Screenshot of interactive webmap responses

In-Person Engagement Safety Week

While the online map generated and allowed for a wide range of feedback, the project team felt it was essential to have in-person opportunities. As such, the project team hosted "Safety Week" from April 1 – 5, 2024, which sought to get feedback from a wide and representative range of Bloomington residents and allow for more in-depth conversations than could be had through the webmap.

The following sections describe the different elements of Safety Week.

Pop-Up Events

Pop-up events are tabling activities that were set up throughout the community at places identified as having populations that we wanted to especially engage with as part of the SS4A Saefty Action Plan. The activity had two parts – (1) asking participants to respond to the question of "What are the top three things that make you feel unsafe on Bloomington's streets" by placing pom-pom balls in jars with potential answers, and (2) drawing on a map of Bloomington to show where they have safety concerns or see opportunities.

There were 13 pop-ups held during Safety Week, which engaged approximately 750 people. While demographics were not gathered, participants trended younger (20-30) and racially diverse. This, most likely, was due to the specific places the pop-up events were held which aimed to intercept student populations, which included:

- 3rd and Walnut Transit Center
- BloomingFoods Co-op
- Stadium Parking Lot
- 10th/Fee Arboretum
- The Back Door (LGBTQ+ bar)
- IU Health Sciences Building
- Hopscotch (coffee shop)
- Downtown Library
- Little 5 Practice
- Courthouse Square
- Sample Gates
- Student housing bus stop
- La Bonita (Hispanic/Latino grocery store)

Figure 7. Pop-Up at the 3rd and Walnut Transit Center

Figure 10. Pop-up at Sample Gates

Figure 8. Pop-up at Indiana University Health Sciences Center

Figure 11. Pop-up at Hopscotch coffee shop

Figure 9. Pop-Up at the Stadium parking lot

Figure 12. Pop-up at Bloomingfoods Co-op

Figure 13. Pop-up at student housing bus stop

Figure 14. Pop-up at the downtown library

Evening Open Houses

The project team hosted three evening events as part of Safety Week. These events were open to the general public and included six stations, each with an interactive activity, to garner feedback and spur discussion. The questions asked at the open houses closely mimicked those from the online webmap survey in order to complement that data set.

The open house locations were selected to be welcoming and, potentially, places where Bloomington residents might already be. The events were advertised using flyers posted throughout town, a local blog, social media, and word of mouth. The events were held at the following places, dates, and times:

- **City Hall Atrium.** April 2, 2024. 5-7pm. This event was originally supposed to be held at the Waldron Hill Buskirk Park but, because of thunderstorms, was relocated to the City Hall Atrium. There was a taco truck parked outside. All participants who completed all the activities were given a $10 gift card to the taco truck.

- **Chocolate Moose Ice Cream Parlor.** April 3, 2024. 6:30-8pm. At this evening event, all participants who completed the activities received a free small ice cream. This event had all ages and demographics attend, and probably had the most families of any event.

- **Friendly Beast Cider Company.** April 4, 2024. 6:30-8pm. This event was held during the location's weekly trivia night and trivia participants participated in the engagement stations before and after trivia rounds. Most of the participants were younger adults and, notably, very few knew about the project or attended that evening because of the engagement event. All participants who completed the activities received a gift card to a local taco shop.

Participants were greeted at a welcome table where a project team member introduced the project, gave them a "passport" to be stamped at each station (once completed, it could be turned in for the incentive), and had them fill out a brief demographic survey. After that, participants moved on to the following stations and activities:

- **Station #1**. Big Question. This station asked how important participants think it is to invest in safe and comfortable transportation in Bloomington. Participants placed a building block on the response area.

- **Station #2**. Trade-offs. This station presented participants with a variety of transportation safety-related trade-offs, and asked them to place a sticker along a line indicating how much they agreed or disagreed with the statements.

- **Station #3.** Safety Concerns. This station asked participants to select their top three transportation safety concerns on Bloomington's streets. This station was the same as the pop-up event.

• **Station #4.** Mode-Specific Safety. This station asked, per mode – walking/rolling, biking, driving, and transit – what would make the participant feel safer.

• **Station #5.** Map. This station had a large map of Bloomington where participants could mark locations of concern or opportunity.

• **Station #6**. Transportation Safety Quilt. Using Bloomington's quick logo as inspiration, participants wrote their "hopes and dreams" for transportation safety in the city on paper triangles. Staff then put these triangles on to a board to build a "Transportation Safety Quilt."

Figure 15. Evening event at the City Hall Atrium

Combined Advisory Committee Meeting

On April 1 from 5:30-6:30pm, the project team hosted a Multi-Commission meeting that invited members from a variety of City Advisory Committees to learn about and provide feedback on the project. Attendees included members of the following committees:

- Traffic Commission
- Public Transportation Corporation Board of Directors
- Parking Commission, Environmental Commission
- Environmental Commission
- Council for Community Accessibility
- Commission on Sustainability
- Board of Public Safety

The project team began the meeting with a presentation that gave an overview of the project as SS4A, reviewed the High Injury Network, and covered the variety of events occurring throughout Safety Week. Overall, committee members were supportive of the project and its mission. However, there were notable themes of the discussion:

- **Members would like to see a shorter timeline for the vision zero goal.** The project team provided clarification on process for selecting the timeline, traffic safety data trends, and goals and progress of other jurisdictions.

- **Attendees expressed concern about allocating any of the SS4A project and program funding to the police department,** which is not expected at this time.

- **There was concern for the consistency of data due to COVID, lack of self-reporting and reporting of near misses, perceived safety, and the exclusion of non-vehicle crashes in the data analyses.** The project team elaborated on the definition of safety in the context of SS4A and the emphasis on fatal and serious injury crashes, as well as how engagement provides additional context that is not captured in the data.

- **Addressing speed along the high injury network was a major point of discussion.** The project team provided insight about various proven countermeasures and how a comprehensive safety system minimizes error and impact.

- **Members expressed interest in how culture changes can be incorporated into this project and what type of impact this can have.** Educational and psychological strategies need to be paired with engineering strategies to create a comprehensive safety system, which will be incorporated in the Safety Action Plan. Additionally, land use gaps and opportunities will need to be addressed as land use and transportation are closely linked.

Figure 16. Project team staff presenting at the All-Commission Meeting

School Outreach

Children and their families were identified as a key engagement demographic for this project. To reach students, we worked with three schools in Bloomington – Fairview Elementary School, The Project School, and Tri-North Middle School to bring information and engagement opportunities to students. In the two elementary schools, a project team member led an engaging presentation about how students can practice safe behaviors using any mode and how they can behave to make Bloomington's streets safe for other roadway users.

The presentation also introduced transportation infrastructure that has and will continue to be installed around the city as part of safety efforts such as crosswalks, curb extensions, signs, lighting, bike lanes, etc. – and discussed what each of those elements do. The sessions ended with working with the students to create a "transportation safety quilt," where they could write or draw about ways to make the city's roads safer for all users on paper triangles, which were then assembled into a larger quilt.

Figure 18. Building a transportation safety quilt with Bloomington students

At the middle school, project staff held a pop-up event during the lunch period, which drew nearly 200 students. Students at all the activities were overwhelmingly engaged with the idea of making streets safer for all users. They were quick to discuss how they behave to be safe by walking on the sidewalk, looking both ways before crossing the street, and using Bloomington's trail system, especially the B-line (it should be noted that both elementary schools were close to downtown Bloomington near the B-line).

They were also very aware of dangerous behaviors that their parents often engage in, such as speeding and distracted driving. Students were very interested in understanding how different transportation countermeasures make streets safer and were hopeful to see these on more streets around the City in the future.

Figure 19. Teaching students about different types of transportation facilities that reduce speed

Engagement Results & Key Takeaways

Through virtual and in-person engagement, the project team received thousands of comments. These comments covered a wide variety of topics relevant to making Bloomington's streets safer for all users. The major takeaways from questions asked throughout the engagement processes are summarized in the following sections.

Question: Where do you feel safe and unsafe when traveling around Bloomington?

The webmap and in-person events allowed participants to label points on a map they deemed safe and unsafe and offer details into their opinions. Table 1 shows some of the main reasons webmap participants felt places were safe or unsafe; these responses were consistent with in-person discussion as well.

Table 1: Summary of safe and unsafe location webmap attributes

"This Location Is Safe Because"	Count	"This Location Is Dangerous Because"	
There are bicycle lanes or space for bicyclists	79	People drive too fast`	392
There are sidewalks	74	Drivers do not pay attention	324
There are a lot of other people walking or biking	66	There are no safe places for people walking, biking, or rolling to cross the street	219
People drive at the speed limit or slower	41	There are no bicycle lanes or space for bicyclists	189
There are safe crossings	40	There are no or inadequate sidewalks	189
Drivers are paying attention	35	Other (please specify below)	185
There is good lighting at night for pedestrians or bicyclists	22	There are too many cars on the road	177
Other (please specify below)	18	I have experienced personal safety or harassment at this location	110
		There is not enough lighting at night for pedestrians or bicyclists	84
		There is not enough lighting at night for driving	45
Total	**375**	Total	**1,914**

Safe Locations

Many respondents indicated that the presence of walking and cycling facilities, such as sidewalks, bicycle lanes, and crossings, contribute to a location feeling safe. Over half of the total "safe" locations were associated with a bicycle lane, sidewalk, or a crossing. Many of these points were placed in proximity to the B-Line Trail or 7-Line, and the comments characterized both facilities as being convenient, comfortable, and safe, the latter of which was due to their separation from cars.

Many other "safe" points were placed on locations where there are a lot of other people walking or biking. While these points were also placed near the B-Line Trail and 7-Line, parks (e.g. Switchyard Park, Bryan Park), and other specific streets other streets (e.g. Kirkwood Avenue) were specified in comments. Kirkwood Avenue was mentioned repeatedly, often with favorable comments about the 'Open Streets' events that temporarily close Kirkwood Avenue to motor vehicles.

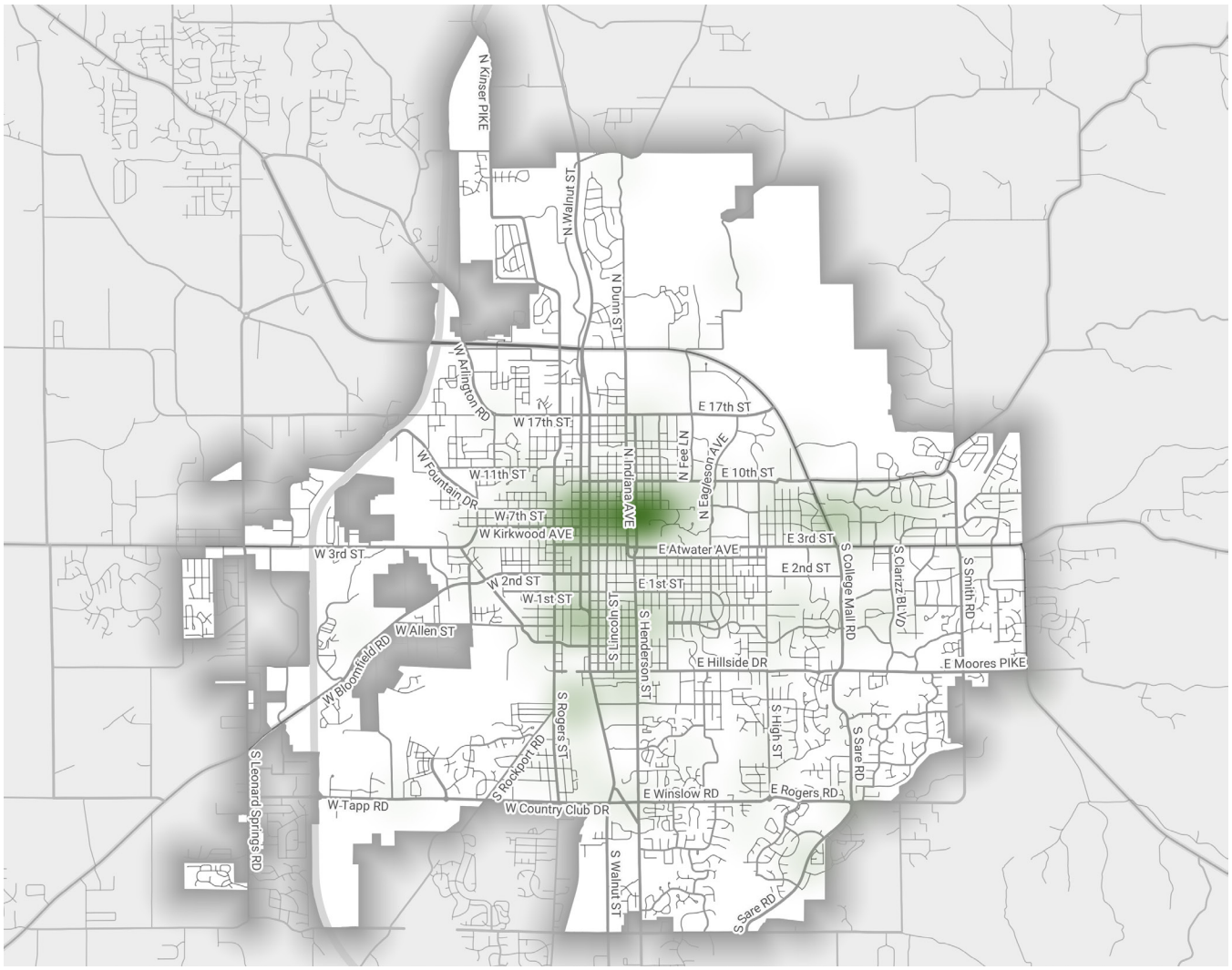


Figure 20. Heat map of areas selected as "safe" by webmap participants

Unsafe Locations

The most common reason for a spot being deemed "unsafe" was that people are driving too fast. This characteristic was pointed out the most near arterial and collector roadway segments such as College Avenue, Walnut Street, and East 3rd Street where a higher degree of bicycle and pedestrian traffic occurs, particularly adjacent to downtown and Indiana University. Respondents also targeted key intersections as being unsafe due to high vehicle speeds, particularly at intersections that include a greenway crossing such as Allen and Walnut Street Intersection (W Allen Neighborhood Greenway Crossing) and Hillside Drive and Weatherstone Lane/Olive Street Intersection (Highland-Hawthorne Greenway Crossing).

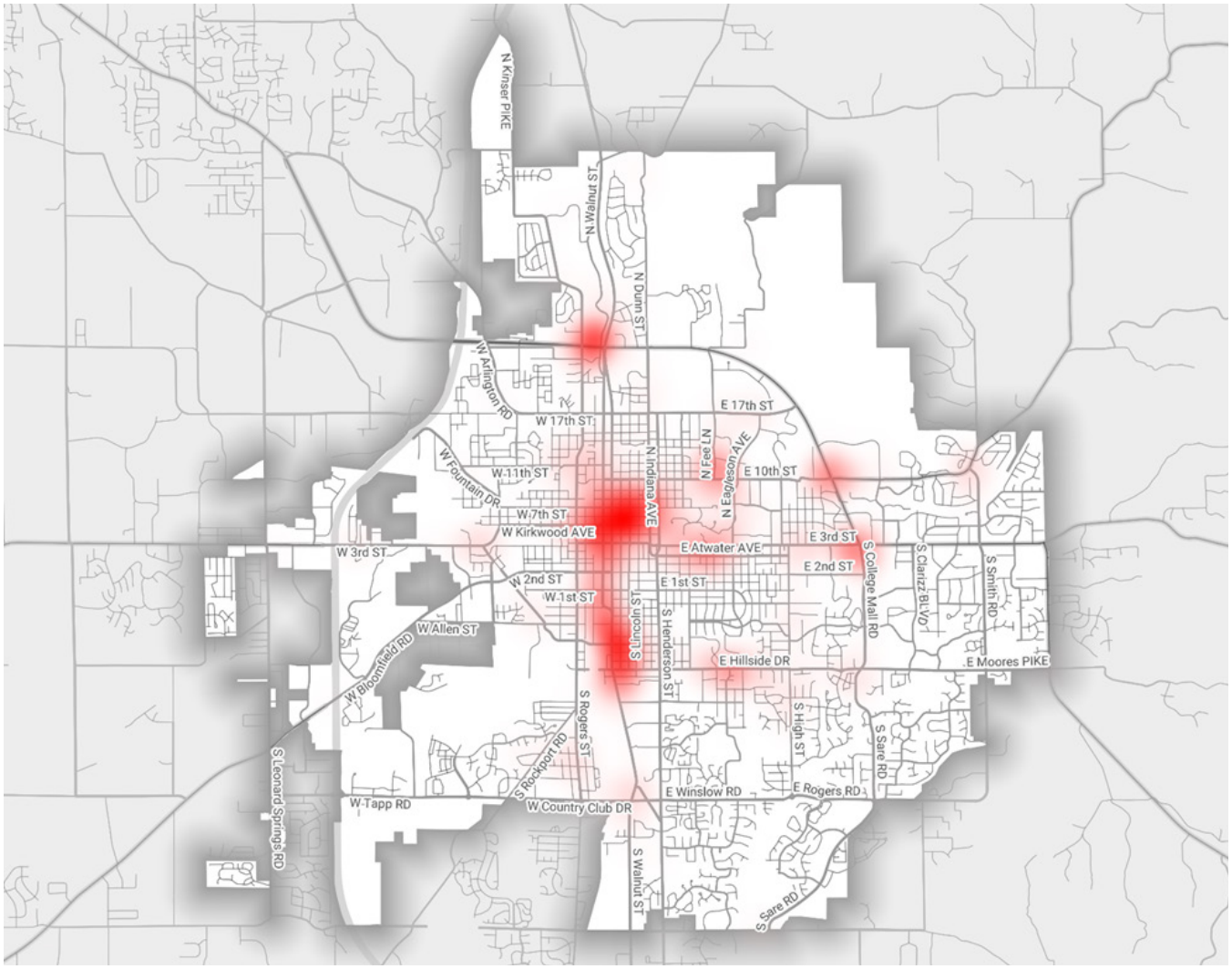


Figure 21. Heat map of areas selected as "unsafe" by webmap participants

Additionally, it should be noted that a number of 'unsafe' comments were associated with points placed along the 7-Line. Many respondents stated that they have experienced a near miss along 7th Street, and the comments suggest that the primary issues are visibility obstructions and determining who yields to the right-of-way.

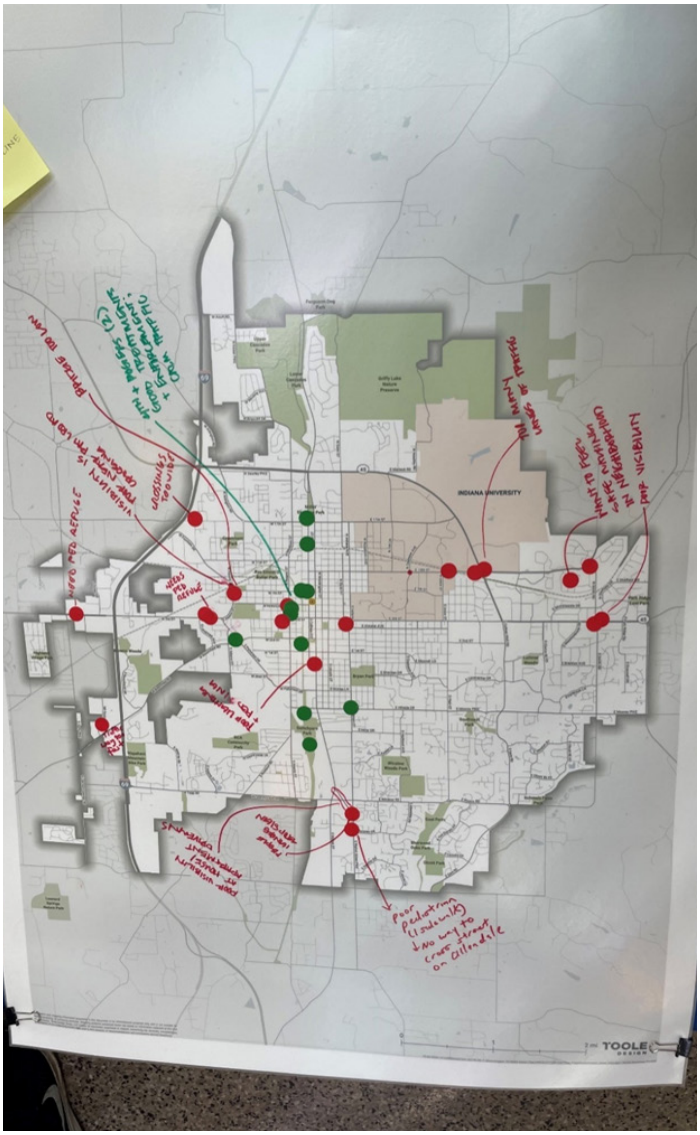


Figure 22. Map with written comments from a Safety Week evening event

Question: What are the top three things that make you feel unsafe on Bloomington's Streets?

Participants overwhelmingly selected distracted driving and people driving too fast as their top two safety concerns on Bloomington's streets. These two answers were followed by people not yielding at intersections, fear of physical or verbal harassment, lack of safe space to cross the street, and lack of safe places for bicyclists. It should be noted that different locations resulted in different distributions of responses. For example, at a pop-up help at Tri-North Middle School, a much higher percent of participants selected "fear of physical or verbal harassment" as one of their top concerns than overall pop-up participants. This variation is most likely due to middle school students mostly being on foot, bike, or scooter and, in general, feeling threatened by adults.

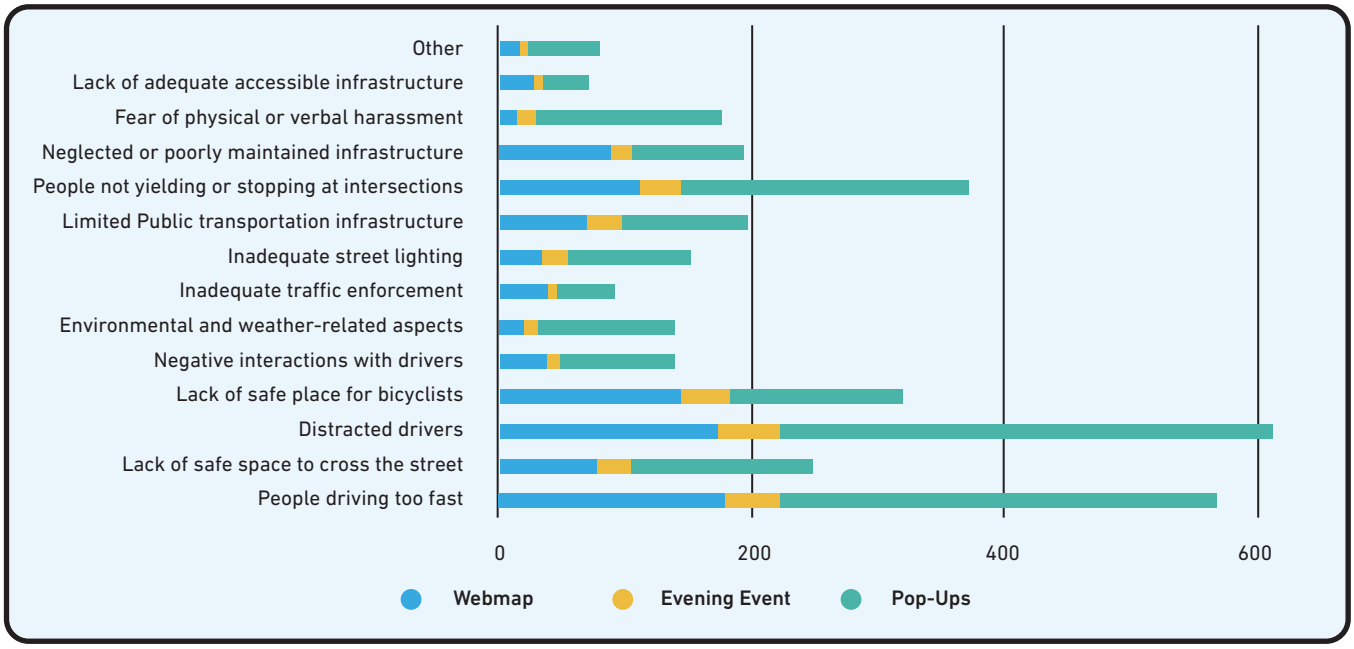


Figure 23. Responses to "What are the top three things that make you feel unsafe on Bloomington's Streets?"

Question. How important do you think it is to invest in a safe and comfortable transportation system in Bloomington?

At both the evening events and on the webmap, participants strongly believed that investing in a safe and comfortable transportation system was important. Very few selected "not important" as their answer.

Figure 24. In-person responses at a Safety Week evening event

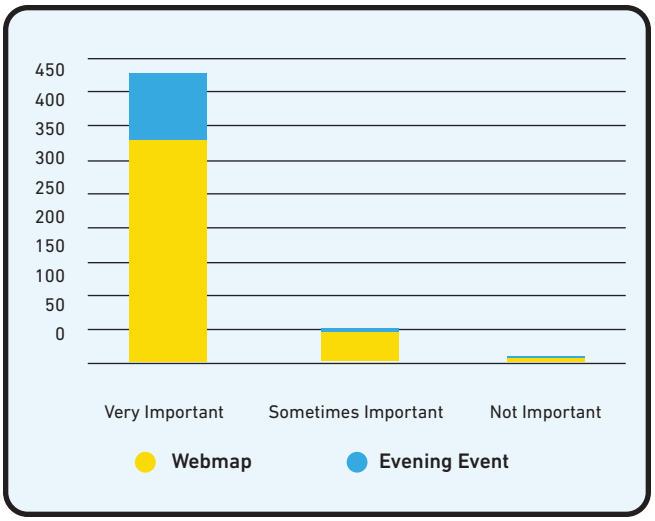


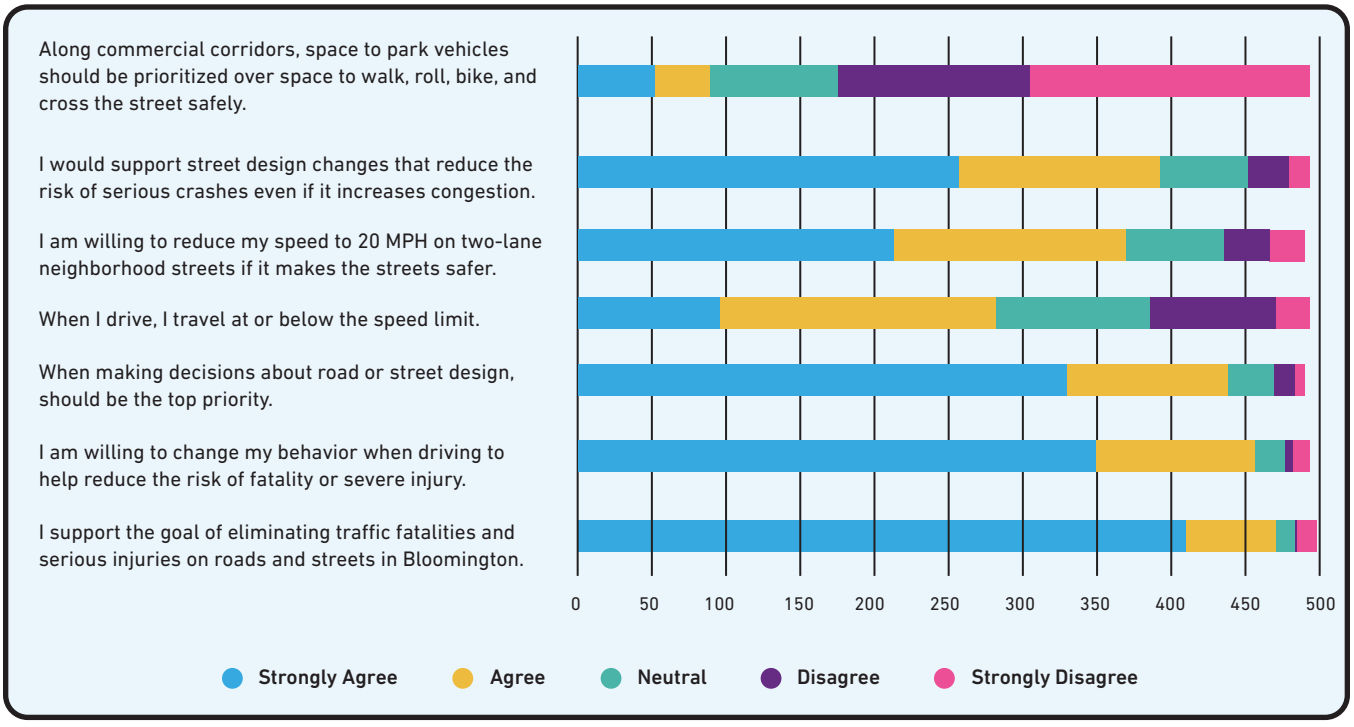
Figure 25. Responses to "How important do you think it is to invest in a safe and comfortable transportation system in Bloomington?"

Question: Trade-offs

Participants were asked how strongly they agreed with a variety of statements that focused on trade-offs between safety and speed or convenience. In general, most participants agreed with statements that align with safer roadways design and operational practices. That said, many participants said that they don't usually drive at or below the speed limit which shows that people are in support of safety but may need more than a speed limit to encourage them to drive at safe speeds.

Notably, for policy and project implications, only 20% of respondents believed that space to park vehicles should be prioritized over space to walk, roll, bike, and cross the street safely along commercial corridors. Parking is often a major source of conflict and pushback to safety-focused projects, and these results show that participants are, in theory, willing to make that sacrifice for active transportation and safety improvements.

Figure 27. Trade-off question station at a Safety Week evening event



Question: Generally, how safe do you feel traveling around Bloomington walking, rolling, biking, scooting, driving, or taking transit?

The feeling of safety can vary dramatically depending not only on where you're traveling, but also how you're traveling. Webmap participants were asked what modes of transportation they use and then, as a follow-up, how safe they feel using those modes around Bloomington.

Overall, respondents felt most safe while driving or on transit. Walking was the next "safest," with a very small amount of respondents saying it feels "very unsafe." Feelings of safety dramatically dropped from there with less than a quarter of people feeling safe while biking or in a wheelchair. Notably, nobody responded that they felt "very safe" on a scooter.

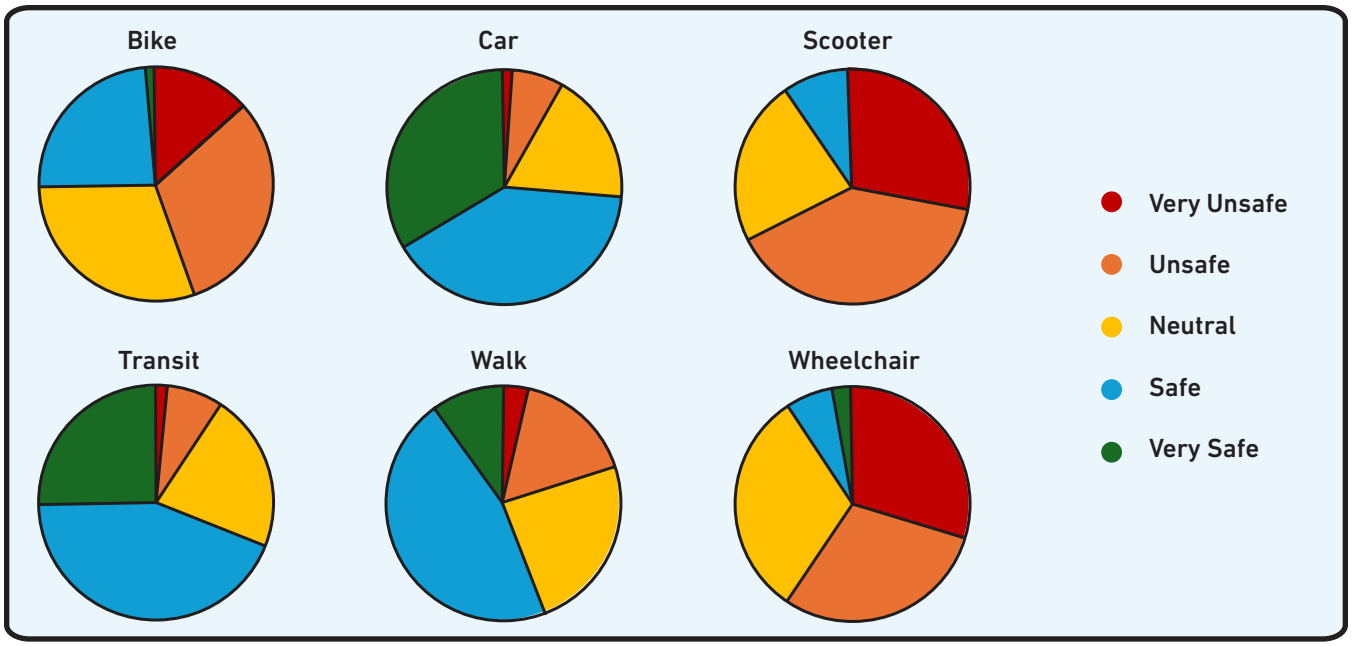


Figure 28. Responses to "Generally, how safe do you feel traveling around Bloomington walking, rolling, biking, scooting, driving, or taking transit?"

Question: "When walking or rolling, biking, taking transit, or driving, what would make you feel safer?"

As a follow-up to the prior question, webmap and evening event participants were asked to select three choices from a list to offer insight about what would make them feel safer while walking/rolling, biking, driving, or taking transit. For walking and biking, participants top answers were the same – they wanted more separation between them and vehicles, better maintained facilities, and more sidewalks, bicycle lanes, or trails in the community. For people biking, more secure bicycle parking and better wayfinding were also common selections. For pedestrians, participants selected better lighting and more accessible infrastructure as items that would make them feel safer.

Interestingly, participants selected "more space separating people bicycling from car traffic" and "better road maintenance" as the top two items that would make them feel safer while driving, which is nearly identical to the responses of pedestrians and bicyclists. Reducing driving speeds using speed bumps or lane reductions, and better or more visible signs were the next most common answers.

Transit riders (of which there were few) highlighted improvements at transit stops, especially adding more pedestrian crossings and/or signals near stops. Adding more shelters was the second most common choice, followed by the desire to increase lighting around transit stops.

What would make you feel safer when walking or rolling?	
More space separating people walking from car traffic	402
More sidewalks or trails	267
Better maintenance of sidewalks and trails	241
Better lighting of sidewalks, trails, and roads	176
Accessible infrastructure (curb-ramps, wheelchair access, wider sidewalks, etc.)	113
Additional signs or signals at intersections	94
Additional police presence	51
Other	48
Better wayfinding so I know where to go	21
What would make you feel safer when biking or scootering?	
More space separating people and bicycling from car traffic	243
More bicycle lanes or trails in the community	236
Better maintenance of bicycle lanes and trails	136
More secure bicycle parking	91
Additional signs or signals at intersections	82
Better lighting of trails and roads	73
Other	44
Better wayfinding so I know where to go	26
Additional police presence	19

What would make you feel safer when driving?	
Better road maintenance	235
More space separating people bicycling from car traffic	219
Increased street lighting	153
Reducing driving speeds using bumps or reducing the number of lanes	134
Lowering speed limits	130
Better or more visible signs so I know where to go	106
Other	78
Additional police presence	64
Increasing the number of traffic signals	36
What would make you feel safer when taking transit?	
Adding more shelters at transit	151
Increasing lighting around transit stops	145
Having more pedestrian crossings and/or signals near transit stops	133
More route information so I know where to go	117
Other	40
Additional police presence on transit	17
Additional police presence at the stops	11

Figure 29. Modal safety station at a Safety Week evening event

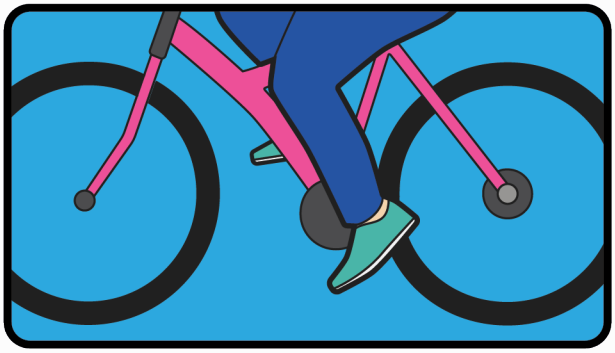
Activity. Transportation Safety Quilt

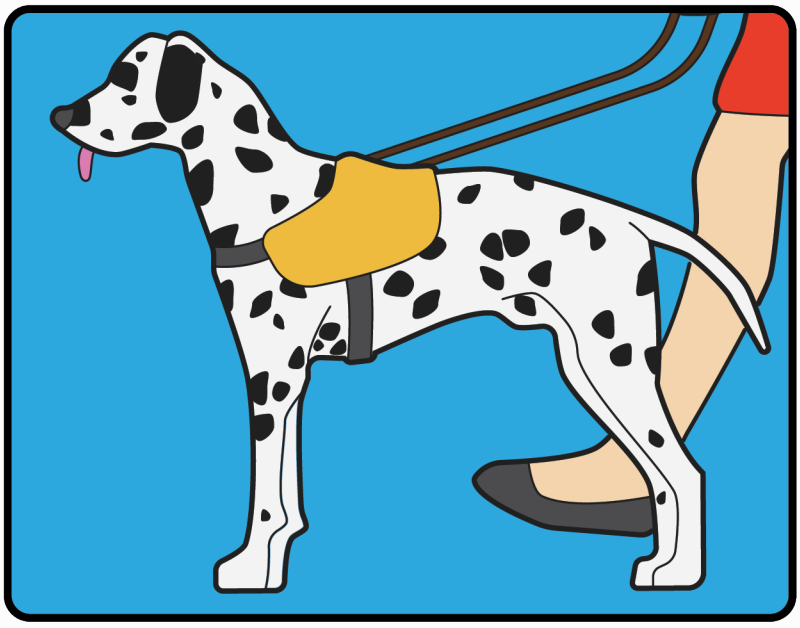
As a final activity at the evening events, participants were asked to write or sketch about how they would like to make Bloomington's streets safer for all users on quilt triangles. Many of the images reflected a desire for the roadways to be safer for all users through behaviors and facilities, like signage, bike lanes, and slower driving. Participants also wrote and drew about residents feeling respected on the streets and wishes for the roadways to feel "happy" and "fun."

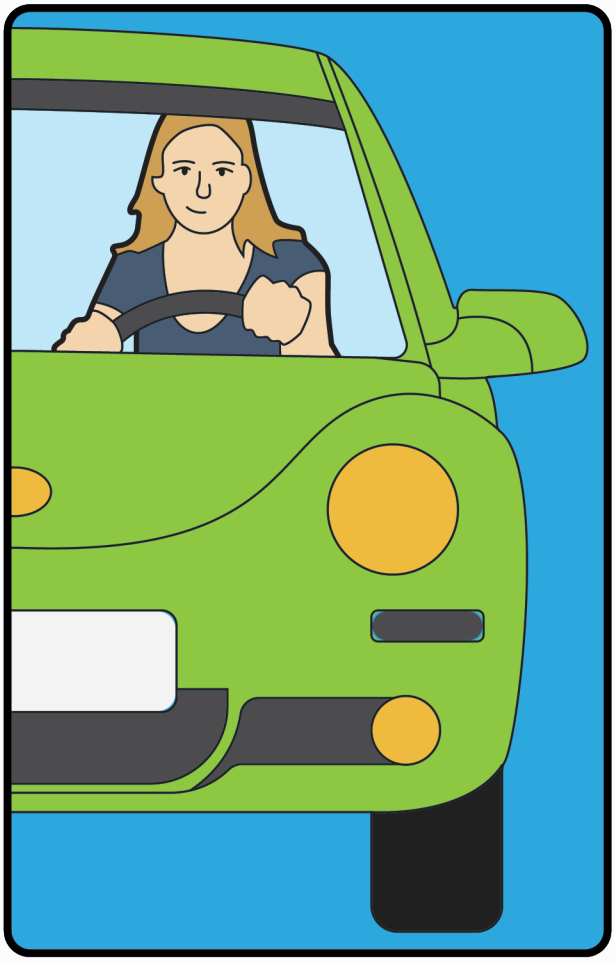
Figure 30. Transportation safety quilt from a Safety Week evening event

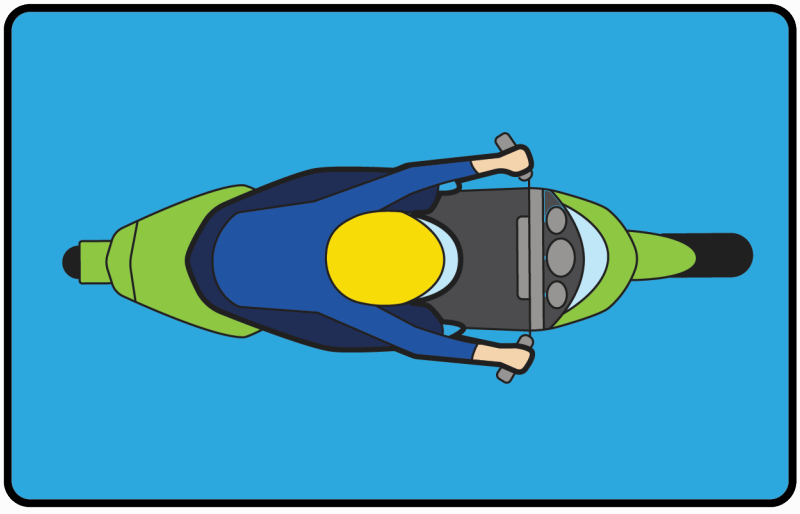
BLOOMINGTON

SAFE STREETS FOR ALL









Appendix C: Proven Safety Countermeasures

November 2024

4-to-3 Lane Conversions

Purpose:
Reduce the speed of traffic, reduce crossing distances and optimize available roadway space to improve levels of safety and comfort for pedestrians and bicyclists.

Description:
Reduce the number of lanes (road diets), the width of lanes (lane width reductions), or both. The additional space created is typically combined with other elements such as bike lanes, transit lanes, widened sidewalks, pedestrian refuge islands, and/or curb extensions. Typically, road diets are utilized on undivided, four-lane roadways, which in turn are converted into two through lanes and a center turn lane or painted median.

Estimated Cost:
$$$ per mile (no additional cost with paving work)

Applicable Locations

- Multi-lane roads are eligible for lane reconfiguration.
- Emphasis should be placed on roads with priority pedestrian and bicyclist routes.
- Lane reconfiguration can be done in urban, suburban, and rural areas.

Applicable Street Types

- Use INDOT collector/minor arterial

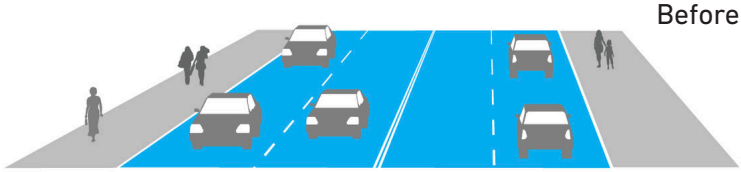
Safety Benefits

- Increase available space for additional safety infrastructure for pedestrians or bicyclists.
- May reduce the number of potential conflict points.
- May slow motor vehicle operating speeds on average, but will reduce "high-end" speeders (10 mph +) up to 90% per Seattle DOT.
- May reduce crossing distances by eliminating a lane or through provision of a pedestrian median island.
- Remove possibility of "double-threat" crashes from vehicles passing stopped vehicles.
- Improve sight distance for turning vehicles.
- Reduce emergency vehicle response timers per FHWA. (https://safety.fhwa.dot.gov/road_diets/resources/pdf/fhwasa17020.pdf)

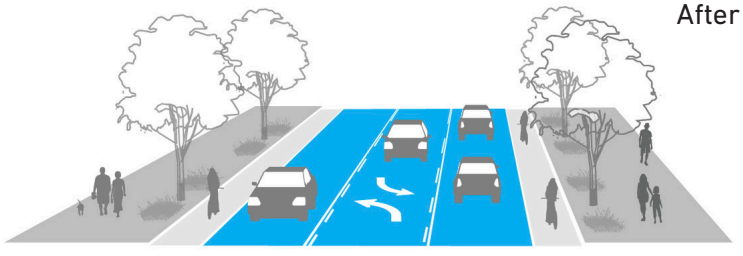
Expected Crash Reduction

- 47% reduction in total crashes in suburban areas (Pawlovich, et al., 2006)
- 19% in urban areas (FHWA, 2008)

Before

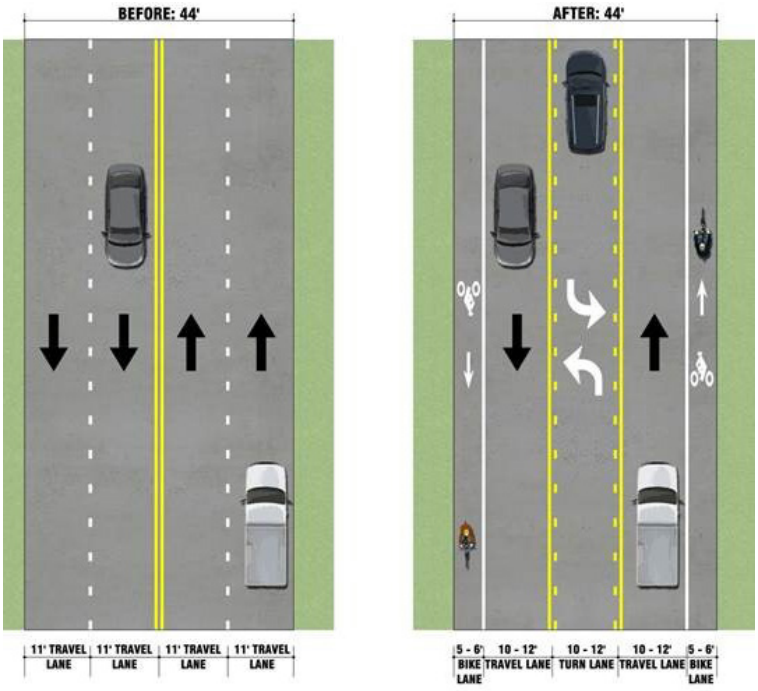


After



Design Guidance

- Eliminating a travel through lane can make room for a bicycle lane, turn lanes, wider sidewalks, median island, curb extensions, on-street parking, transit lane, landscaping, or other uses.
- Road diets are most successful on roadways with daily volumes of 8,000 to 20,000 motor vehicles.
- Road diets can be supplemented with painted, textured, or raised center islands or green infrastructure to reduce storm runoff.
- A conversion to a three-lane road can be compatible with a single-lane roundabout.



Considerations

- Eliminating a travel through lane may increase congestion and vehicle queuing and blocking during peak travel hours.
- Evaluate impact of a road diet on all road users, not just vehicles. Consideration should be given to Level of Traffic Stress.
- Consider implementing a road diet in conjunction with pavement overlay.
- Outreach should be conducted to determine if a candidate street is meeting the needs of the community.
- A traffic study may be necessary to determine if high-traffic streets are candidates for removing one or more parking or travel lanes.
- The FHWA recommends considering factors including:
  - Volume thresholds, such as average daily traffic
  - Vehicle speed
  - Trip generation estimates
  - Level of Service
  - Quality of Service
  - Pedestrian and bicyclist volumes
  - Transit and freight operations
  - Peak hour and peak direction traffic flow

Systemic Safety Potential

This is a systemic corridor recommendation that improves road conditions for all roadway users.

Before four to three lane conversion

After four to three lane conversion

Additional Information

- Evaluation of Lane Reduction "Road Diet" Measures on Crashes
- PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System
- Road Diet Informational Guide

Chicanes

Purpose:
Slow motor vehicles speeds by diverting the path of travel.

Description:
Horizontal treatments to restrict vehicle movement and reduce speeds. Chicanes are often made of curb extensions or islands that create "S" curves along a roadway.

Estimated Cost:
$$ to $$$$ (depending on design)

Applicable Locations

- Most effective at midblock locations on one-way and two-way streets

Applicable Street Types

- Neighborhood Residential Street
- General Urban Street
- Neighborhood Connector Street

Safety Benefits

- Improves speed limit compliance.
- Certain designs increase the amount of sidewalk width, buffer width, or both on corridors.

Expected Crash Reduction

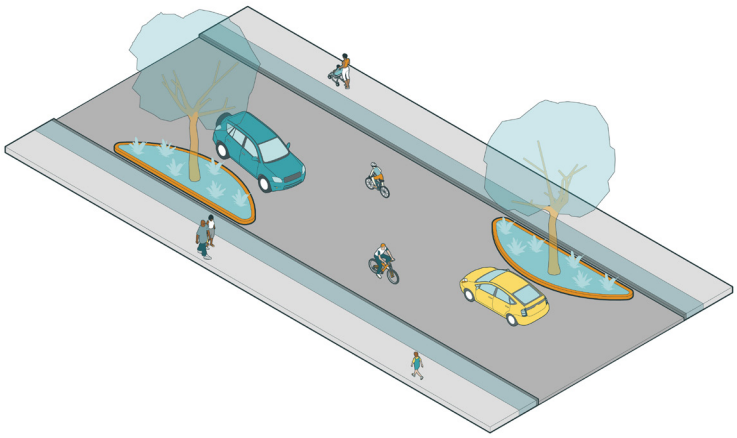
- 32% reduction of crashes (Elvik, R. and Vaa, T., 2004).

Design Guidance

- Interim treatments use striping and flex posts and temporary curb materials.
- Permanent treatments use curb extensions or islands and may include vegetation.
- Maintain sight lines by landscaping chicanes with lower shrubs and plants.
- Multiple treatments may be placed on alternating sides of the roadway.
- Drainage and utility location should be considered when implementing.
- Additional signing or pavement markings may be needed to ensure drivers and maintenance vehicles are aware of the bend in the roadway.

Considerations

- Vehicles and bicyclists must carefully maneuver around fixed objects. Traffic may be slowed when vehicles attempt to pass bicyclists.
- If drainage impacts are a concern, curb extensions may be designed as edge islands with a 1–2-foot gap from the curb.
- Neighborhood traffic circles should be considered at intersections of local roads.
- May reduce on-street parking depending on the design.
- Emergency vehicle and school bus access must be maintained.



Systemic Safety Potential

Best suited as a spot treatment.

Additional Information

- PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System
- NACTO Urban Street Design Guide

Curb Extensions

Purpose:
Shorten crossing distances and increase pedestrian comfort and visibility.

Description:
Also called bulb outs or neck downs, curb extensions extend a section of sidewalk into the roadway at intersections and other crossing locations. In addition to shortening crossing distances, curb extensions create more compact intersections, resulting in smaller corner radii and slower turns by people driving.

Estimated Cost:

$$ to $$$$ (depending on design)

Applicable Locations

- Curb extensions can make pedestrian, bicycle, or other crossings safer and more comfortable everywhere from a mid-block crosswalk to a large signalized intersection.
- Curb extensions can be built in all-day parking lanes or wide shoulders.
- Transitions to lower-speed areas.
- Curb extensions are particularly valuable in locations with high volumes of pedestrian traffic, near schools, bicycle/trail crossings at unsignalized pedestrian crossings, or where there are demonstrated needs.

Applicable Street Types

- Neighborhood Residential Street
- Main Street
- General Urban Street
- Neighborhood Connector Street
- Suburban Connector Street

Safety Benefits

- Slow the speed of motorists making turns at intersections.
- Create additional space for directional curb ramps.
- Provide opportunity to create accessible parking spaces.
- Improve visibility between crossing pedestrians and other street users.
- Prevent people from parking too close to or on crosswalks or blocking fire hydrants.
- Create space for utilities, signs, and amenities such as bus shelters or waiting areas, bicycle and micromobility parking, public seating, street vendors, and greenscape elements.

Design Guidance

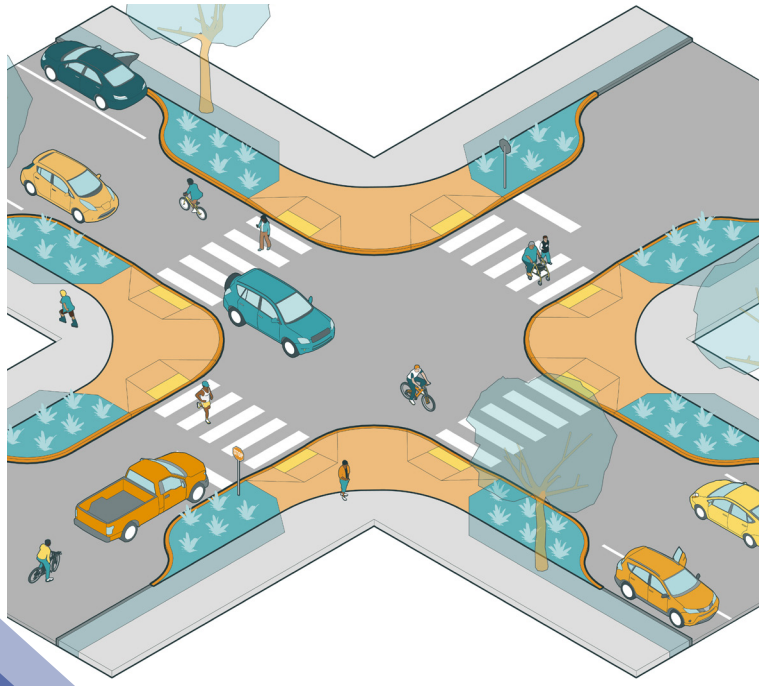
- Limit planting and street furniture height within curb extensions to preserve sight lines.
- Consider expanding curb extensions at bus stops to produce bus bulbs.
- Where curb extension installation on one side is infeasible or inappropriate (i.e., no parking lane), this should not preclude installation on the opposite side.
- A typical curb extension extends about 6 feet from the curb, or no further into the street than the parking lane.
- Protected bike lanes can go over or behind curb extensions, if present.
- The minimum width of a curb extension should match the existing NO PARKING requirements. The length of a curb extension can vary depending on the intended use (i.e., stormwater management, bus stop waiting areas, restricted parking).
- NO PARKING signs or yellow curb can be used to deter parking.

Considerations

- Curb extensions should not extend into travel lanes or bicycle lanes. Generally designed with one foot of shy distance between the face of curb and the edge of travel lane.
- When designing the corner radius on a curb extension, consider the appropriate large vehicle turning path to prevent encroachment into the pedestrian space.
- Consider the turning needs of emergency and larger vehicles in curb extension design and include mountable areas if necessary.
- Curb extensions can require modifications to or relocation of drainage structures. Consider drainage slots with solid surface plating at pedestrian crossings as an alternative.
- Temporary curb extensions may be created using paint, flexible delineators, and other temporary materials to speed installation or as a pilot project before permanent construction.

Systemic Safety Potential

Spot treatment or systemic safety improvement. Consider at all locations with on-street parking and as a gateway treatment to slow vehicle speeds.



Additional Information

- NACTO Urban Street Design Guide
- FHWA Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations

High-Visibility Crosswalk

Purpose:
Providing marked crosswalks communicates to drivers that pedestrians may be present and helps guide pedestrians to locations where it is best to cross the street.

Description:
High-visibility crosswalks are distinguishable from other crosswalk designs by use of longitudinal, ladder, or continental-style markings more readily visible to approaching motorists as opposed to parallel, or transverse, lines which are more difficult to distinguish from a distance.

Estimated Cost:

$ (per crossing)

Applicable Locations

- High-visibility crosswalks are appropriate at all signalized intersections or at high pedestrian volume or busy street intersections as noted in City of Bloomington PM-6: Standard Traffic Crosswalk Details.
- Uncontrolled intersections should meet requirements in MUTCD Section 3B.18.

Applicable Street Types

- All street types

Safety Benefits

- Increase motorist awareness of crosswalk location.
- Reduce crashes between pedestrians, bicyclists, and motor vehicles.
- Designate pedestrian right-of-way, and may reduce pedestrian crossings at unmarked locations.

Express Crash Reductions

- 40% reduction for pedestrian-motor vehicle crashes. (Elvik, R. and Vaa, T., 2004).

Design Guidance

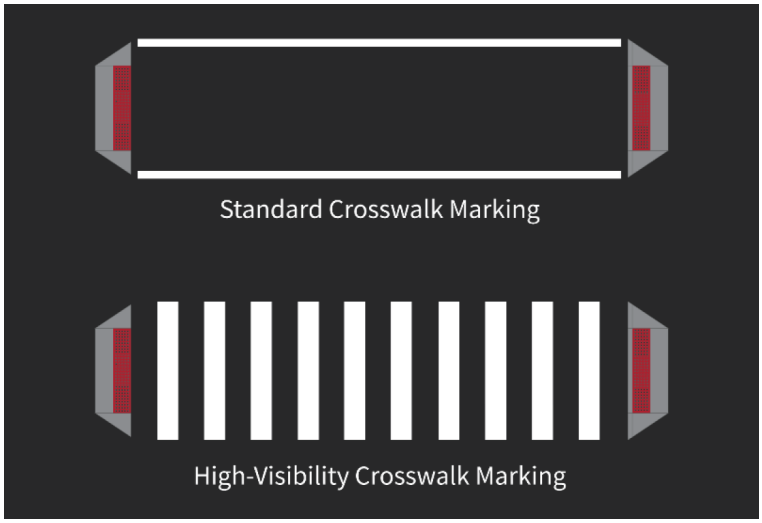
- Marking pattern should be continental: a series of wide stripes parallel to the travel lanes for the entire length of the crossing.
- Crosswalks should be as wide as the sidewalk width plus 1-2' either side (e.g., for a 6' sidewalk, mark the crosswalk 8-10' wide).
- Install with directional ADA compliant curb ramps.
- Stop lines at stop-controlled and signalized intersections should be located at least 8 feet in advance of crosswalks. At uncontrolled crossings, yield lines may be included 8 feet in advance of the crosswalk.
- Parking should be restricted in advance of a crosswalk to provide adequate sight distance.

Considerations

- Crosswalk location should be convenient for pedestrian access.
- Width may be wider than 10 feet at crossings with high pedestrian or bicycling demand.
- Crosswalk markings should consist of non-skid, retroreflective material.

Systemic Safety Potential

Apply as a systemic countermeasure at all controlled crossings. At uncontrolled crossings, apply in accordance with FHWA Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations, Table 1.



Additional Information

- Manual on Uniform Traffic Control Devices
- FHWA Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations

Floating Bus Stops

Purpose:
To eliminate the conflict between bicyclists traveling in bike lanes and transit vehicles that must pull into conventional bike lanes to load and unload passengers. Also to eliminate the conflict when buses merge back into mixed traffic.

Description:
Floating Bus Stops consist of a bus stop platform island extending into the street from the curb with a bicycle lane routed behind the stop on or adjacent to the curb, eliminating bus and bike conflicts at stations and reducing bus travel times.

Estimated Cost: $$$ to $$$$ (depending on design)

Applicable Locations

- Where bike lanes (separated, conventional, etc.) run along a transit stop. This treatment is compatible with near-side, far-side and midblock transit stop locations.

Applicable Street Types

- General Urban Street
- Suburban Connector Street
- Neighborhood Connector Street
- Suburban Connector Street

Safety Benefits

- Eliminates conflict between transit vehicles and bicyclists.
- Island stops maintain continuity of bike lanes.

Design Guidance

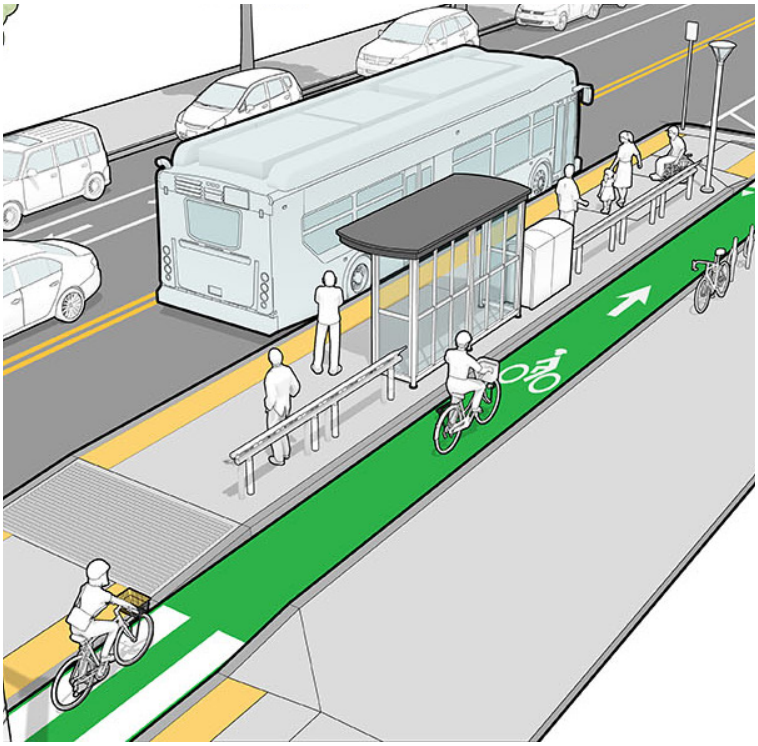
- Provide a buffer of 6 to 12 inches between the transit shelter and the bike lane. This buffer is narrower than the shy distance normally used for vertical surfaces (2 feet), but this is okay for short distances in constrained spaces.
- Channelizing railings, planters or other treatments can be used to help direct people to the crossing location(s).
- Bus shelters should be located away from pedestrian crossings to minimize bicyclist conflicts with pedestrians.
- Multiple pedestrian crossings are recommended, but not required.
- Provide a minimum 4-foot-wide walkway between the curb and the transit shelter.
- Minimum 8 feet of clear width at the location where the bus doors will open to accommodate people in wheelchairs.

Considerations

- The space between the bike lane and the sidewalk must have a detectable edge so pedestrians with vision disabilities can distinguish between the two. The bike lane may be located at street level, intermediate level, or sidewalk level. The bike lane elevation can affect the treatment used and can itself be a treatment for creating the detectable edge. The following design treatments can help provide this tactile cue:
  - Street furniture or other vertical objects.
  - A curb.
  - Curb height changes.
  - Continuous low landscaping.
  - A directional indicator installed linearly on the sidewalk adjacent to the edge.
  - Consider transit queuing and vehicle length to determine island length and pedestrian crossing placement.
  - Ensure visibility between bicyclists and pedestrians for safety.
- Consider raised pedestrian crossings between the floating transit island and the sidewalk to prioritize pedestrians and alert and slow bicyclists at the pedestrian crossing.

Systemic Safety Potential

Potential for systemic safety application at bus stops located along separated bike lanes. Best suited as a spot treatment along buffered bike lanes and conventional bike lanes.



Additional Information

- NACTO Transit Street Design Guide
- FHWA Achieving Multimodal Networks

Lighting

Purpose:
Increase visibility for all road users at dusk and darkness, especially at crossings.

Description:
Overhead lighting to illuminate crossings, signs, and street markings. Well-placed lighting improves visibility for all road users. Lighting can be placed overhead or in pavement, depending on the needs of each individual corridor. Pedestrian-scale lighting is often seen in commercial districts as it enhances the environment at night, while also enhancing security.

Estimated Cost:
$$ to $$$$ (depending on design)

Applicable Locations

- Controlled and uncontrolled intersections.
- On crossing approaches.
- Along sidewalks, paths, and trails.
- Beneficial at intersections in areas with high volumes of pedestrians, such as commercial or retail areas and at major bus stops.
- Near schools, parks, and recreation centers.
- On both sides of arterial streets.

Applicable Street Types

- All street types

Safety Benefits

- Improves visibility for all parties.
- May reduce crashes and injuries for all road users.
- May increase yielding and compliance with traffic control devices.
- Higher sense of personal security for pedestrians and bicyclists.

Expected Crash Reduction

- 42% for nighttime injury pedestrian crashes at intersections. (Elvik, R. and Vaa, T., 2004).
- 33-38% for nighttime crashes at rural and urban intersections. (Ye et al. 2008).
- 28% for nighttime injury crashes on rural and urban highways. (Elvik, R. and Vaa, T., 2004).

Design Guidance

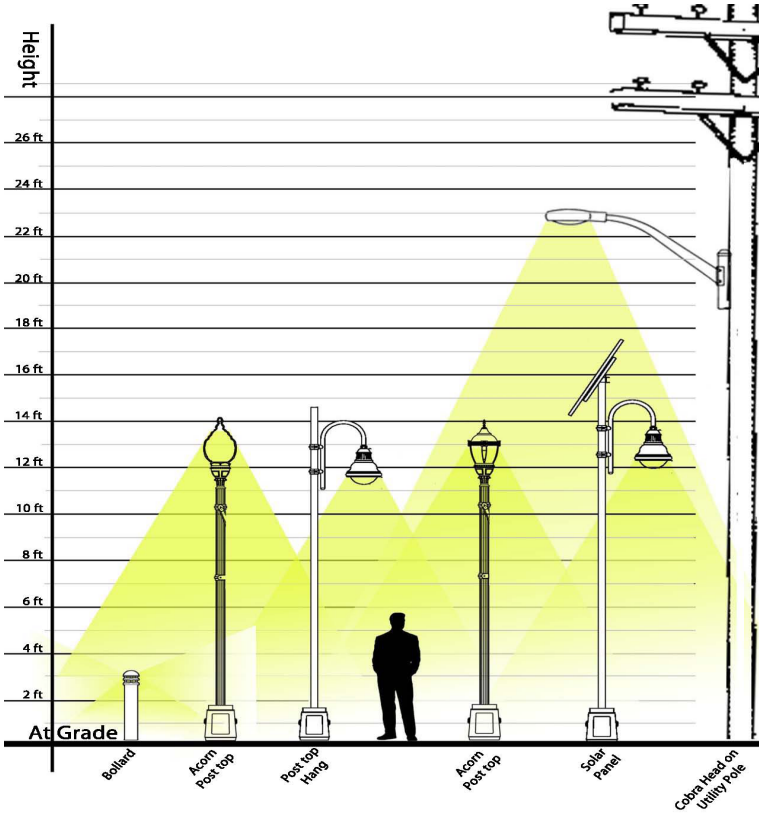
- Use 3000K shielded LED lights wherever possible.
- Lighting should be consistent and uniform.
- Consider placement of existing buildings and trees to reduce spillover.
- Install lighting to meet UDO requirements and minimize effects of light pollution.
- Lights should be placed in advance of a midblock or intersection crosswalk in both directions to illuminate the pedestrian in the front and avoid a silhouette.
- Should be co-located with traffic signs and signals to reduce clutter along or near sidewalks, paths, and trails especially at intersection corners.

Considerations

- Uniform lighting can suggest pedestrian use and create a sense of enclosure.
- Lighting should be provided on crosswalk approaches.
- If a crossing has a crossing island, additional lighting may be provided.
- Consider energy usage and environmental impacts.
- Consider quality and color of light.
- Nationwide, Black and Latino Americans have substantially higher pedestrian fatality rates at night (GHSA Pedestrian Traffic Fatalities by State), therefore pedestrian lighting should be prioritized equitably so neighborhoods that have not included pedestrian lighting in the past can be made safer.

Systemic Safety Potential

Potential for systemic safety application at all controlled and uncontrolled crossings.



Additional Information

- FHWA Lighting Handbook
- FHWA Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations
- ANSI/IES RP-8 Standard Practice for Roadway Lighting
- International DarkSky Association Outdoor Lighting Guidelines

Leading Pedestrian Intervals

Purpose:
Extends crossing time for pedestrians at signalized intersections. Also allows people walking to enter an intersection first to establish presence before turning drivers begin moving.

Description:
Leading pedestrian intervals (LPIs) are adjustments to traffic signals to give pedestrians a three to seven second head start before motorists enter the intersection.

Estimated Cost:

$

Applicable Locations

- Signalized intersections.
- Intersections with a significant number of turning vehicles and pedestrian volumes.
- At locations with protected bicycle lanes where people bicycling cross on the "Walk" signals.
- Locations with seniors or school children who tend to walk slower.

Applicable Street Types

- Main Street
- General Urban Street
- Neighborhood Connector Street
- Suburban Connector Street

Safety Benefits

- Increase visibility of pedestrians and bicyclists.
- Increase motorist yielding when turning across a parallel pedestrian or bicycle crossing.
- Provide exclusive crossing time for pedestrians and bicyclists.
- Prioritize pedestrian safety and convenience at intersections.
- Reduce conflicts between pedestrians and motorists.
- Can further enhance safety for pedestrians who need more time to cross the intersection by adding more time to the WALK phase.

Expected Crash Reduction

- 13% for pedestrian involved crashes (Goughnour, E., D. Carter, C. Lyon, B. Persaud, B. Lan, P. Chun, I. Hamilton, and K. Signor 2018),

Design Guidance

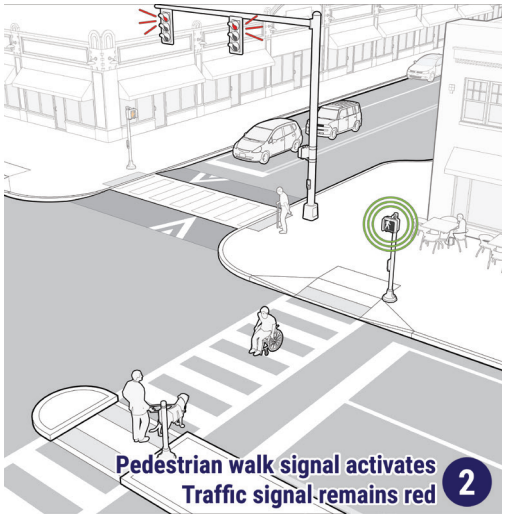
- LPIs should be installed with high-visibility crosswalk markings, curb ramps, accessible pedestrian signals, and "No Turn on Red" "(NOTR)" sign (MUTCD R10-11). NOTR should be considered, not required, unless the LPI is pedestrian actuated. Can include blankout signs that operate only during the LPIs.

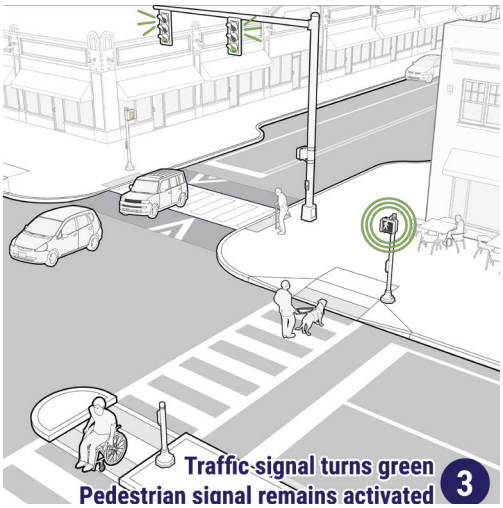
Considerations

- LPIs can be provided actively or provided only when actuated. Active detection requires an accessible pushbutton.
- The length of LPIs can be increased where pedestrian or bicyclist volumes are high or pedestrian only phasing should be used to eliminate conflicts.
- LPI may be accompanied with an audible noise for visually-impaired pedestrians.
- NO TURN ON RED signs should be considered with LPIs.
- Concurrent pedestrian phasing should appropriately match the motorist signal phasing.

Systemic Safety Potential

LPIs are suited for systemic use in areas with existing or planned pedestrian signals and high pedestrian and turning volumes.





Additional Information

- Pedestrian and Bicycle Information Center — Signals and Signs
- PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System

Pedestrian Refuge Island

Purpose:
Protect pedestrians and bicyclists crossing by slowing motor vehicle speeds, increasing motor vehicle yielding, increasing pedestrian visibility, providing a pedestrian waiting area, and allowing two-stage crossings for slower pedestrians.

Description:
Pedestrian islands are raised medians placed in the middle of a street that provide a protected space for people trying to walk across the street. Median crossing islands have a cut-out area for pedestrian and bicyclist refuge and are used as a supplement to a crosswalk.

Estimated Cost:
$$ to $$$$ (depending on design)

Applicable Locations

- Crossings at the midblock or at intersections.
- Most beneficial at uncontrolled crossings, multilane roads, wide signalized crossings, or complex intersections.
- On roads with two or more lanes of through traffic.
- Roads with insufficient gaps in traffic.
- Roads with high pedestrian crossing volumes.

Applicable Street Types

- All street types

Safety Benefits

- Reduce maximum distance and time pedestrians exposed to crash risk.
- Allow pedestrians to cross the street one direction of travel or fewer lanes at a time.
- Ease crossing for slower pedestrians (e.g. youth, elderly, and disabled).
- Provide space for additional lighting at the crossing.
- May slow motorist through speed.
- May slow motorists turning left.

Expected Crash Reduction

- 32 for vehicle-pedestrian crashes[1]

1 Zegeer, C., C. Lyon, R. Srinivasan, B. Persaud, B. Lan, and S. Smith. 2017. "Development of Crash Modification Factors for Uncontrolled Pedestrian Crossing Treatments." Transportation Research Record: Journal of the Transportation Research Board 2636. Transportation Research Board of the National Academies. Washington, D.C.

Design Guidance

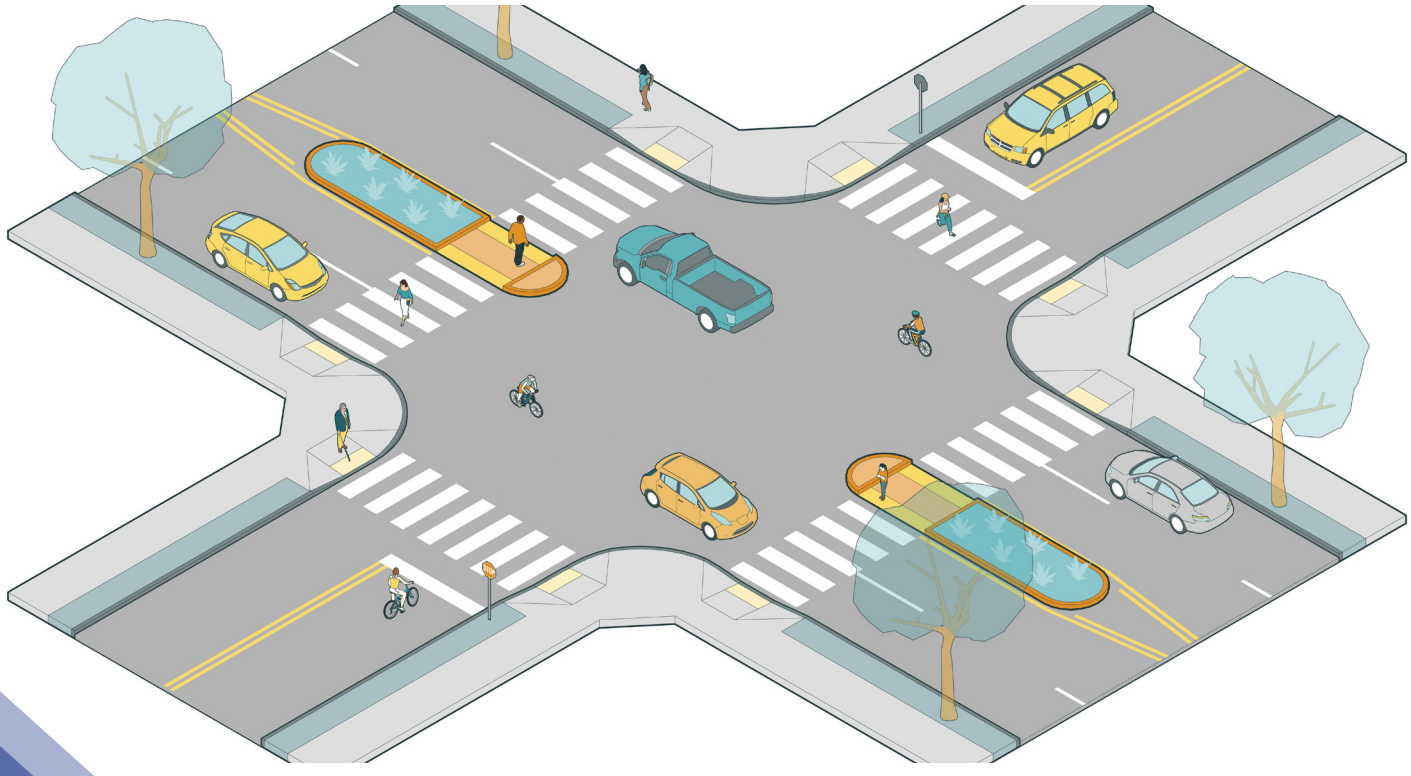
- Median crossing islands should be a minimum of 6 feet wide. To provide bicyclist refuge or for high pedestrian volumes, crossing islands should be a minimum of 8 feet wide. The refuge is ideally 40 feet long.
- Ramps or island cut-throughs are required to meet ADA requirements. They should be the full width of the crosswalk, 6 feet minimum.
- All medians at intersections should have a "nose" which extends past the crosswalk. The nose protects people waiting on the median and slows turning drivers.
- Mark with a high-visibility crosswalk.

Considerations

- Pedestrians may get caught on the crossing island if motorists do not yield or signal timing is too short.
- Crossing islands at intersections may restrict vehicles turning left without restricting pedestrian or bicycle crossings.
- Curb extensions can be built along with crossing islands to restrict on-street parking and reduce crossing distance.
- Temporary crossing islands can be constructed with temporary curbing or flex posts.
- Pedestrian islands should be considered at locations on busy 2-lane streets and on any street with more than two lanes.
- Where possible, stormwater management techniques should be utilized on pedestrian islands with adequate space, as long as a clear path for pedestrians is maintained.

Systemic Safety Potential

Potential for systemic safety application at mid-block crossings and at intersections along corridors with poor motor vehicle yielding, operating speeds over 30 mph, or motor vehicle volumes above 9,000 vehicles per day.



Additional Information

- Chapter 8 of Designing Sidewalks and Trails for Access: Part II of II: Best Practices Design Guide
- Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities
- FHWA Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations

Raised Crosswalk

Purpose:
Reduce drivers' speeds, increase driver yielding, and improve crossing safety for people walking or bicycling.

Description:
Raised crosswalks are ramped speed tables spanning the entire width of the roadway or intersection usually at minor locations. Crossings are elevated at least three inches above the roadway, and up to the sidewalk level.

Estimated Cost:
$$ to $$$$ (depending on design)

Applicable Locations

- Raised crosswalks are a treatment option often used at the midblock. However, intersections can also have raised crosswalks or the entire intersection can be raised.
- Roadways with a posted speed of 30 mph or lower.
- Common on school campuses, at shopping centers, and in pick up/drop off zones.

Applicable Street Types

- Main Street
- General Urban Street
- Neighborhood Connector
- Neighborhood Residential Street

Safety Benefits

- Reduce motor vehicle speeds.
- May reduce the frequency and severity of crashes for all road users.

Expected Crash Reduction

- 45% for pedestrian crashes. (Elvik, R. and Vaa, T., 2004).
- 36% for all vehicle crash types. (Elvik, R. and Vaa, T., 2004).

Design Guidance

- Place ramps on each vehicle approach.
- Raised crossings are often demarcated with different paving materials and additional paint markings. See MUTCD sections 3B.29 and 3B.30 for details.
- Mark the crossing with high-visibility crosswalk markings.
- Install with applicable warning sign (MUTCD W11-1, W11-2, W11-15, or S1-1). Consider advance warning signs such as SPEED TABLE or RAISED CROSSWALK (modified W17-1) and advisory speed plaques if applicable or on higher volume roadways.
- Raised crossings do not require curb ramps, though truncated domes should be included at each crossing entrance.

Considerations

- Raised crossings at sidewalk level are preferred for pedestrian accessibility and comfort, and safety.
- Raised crossings should not be used on steep curves or roadways with steep grades.
- May be used for bicyclists along crossings for shared use paths and multiuse paths including protected bicycle lanes.
- Consider drainage needs.
- Further consideration is needed for roadways heavily used by trucks, buses, and emergency vehicles.

Systemic Safety Potential

Best suited as a spot treatment.

Additional Information

- Field Guide for Selecting Countermeasures at Uncontrolled Pedestrian Crossing Locations
- FHWA Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations
- A Guide to Vertical Deflection Speed Reduction Techniques: Planning and Design of Speed Humps, Speed Tables and Other Related Measures from ITE.

Raised Intersection/ Speed Table

Purpose:
Raised intersections create a safe, slow-speed crossing and public space at minor intersections. These treatments provide many benefits, especially for people with mobility impairments, because there are no vertical transitions to navigate.

Description:
Raised intersections are created by raising the street to the same level as the sidewalk.

Estimated Cost:

$$$$

Applicable Locations

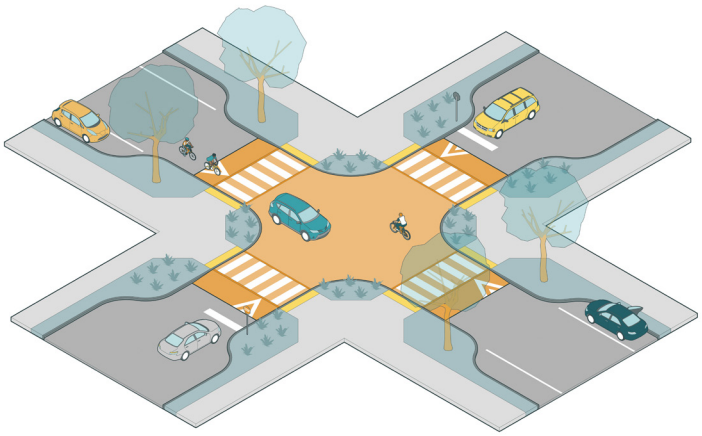
- Raised crosswalks and intersections are appropriate in areas with high pedestrian activity. They should also be considered at locations where poor pedestrian visibility and low motorist yielding have been identified.
- High-visibility or textured paving materials can be used to enhance the contrast between the raised intersection and the surrounding street.
- Raised intersections require detectable warnings at the curb line for people who are blind or have low vision.
- Directional curb ramps are preferred, as shown in the figure to the right.
- Raised intersections can be useful in placemaking where slow traffic speeds and decorative treatments are desirable and in conjunction with curb extensions and are generally best used on narrower, two-lane roadways.

Applicable Street Types

- Neighborhood Residential Street
- Main Street
- General Urban Street

Safety Benefits

- Improve motorists' awareness by prioritizing pedestrian crossings and helping define locations where pedestrians are expected.
- Reduce turning speeds of motorists at intersections and driveways.
- Increase visibility between drivers and pedestrians by raising pedestrians in the motorists' field of view and giving pedestrians an elevated vantage point from which to look for oncoming traffic.
- Create pedestrian crossings which are more comfortable, convenient, and accessible since transitioning between the sidewalk and roadway does not require negotiating a curb ramp.



Design Guidance

- Raised intersections and crosswalks can be used as gateway treatments to signal to drivers when there are transitions to a slower speed, pedestrian-oriented environment.
- Designs should ensure proper drainage.
- Raised intersections are flush with the sidewalk and ensure that drivers traverse the crossing slowly.
- Crosswalks do not need to be marked unless they are not at grade with the sidewalk. ADA-compliant ramps and detector strips are always required.
- Bollards along corners keep motorists from crossing into the pedestrian space. Bollards protect pedestrians from errant vehicles. Bollard placement and dissimilar pavement materials create space for occasional large vehicles similar to an apron.

Considerations

- Design speeds and emergency vehicle routes must be considered when designing raised crosswalks and intersections; these treatments may not be appropriate for high-speed streets without appropriate advanced markings and signing or other design changes.
- Installation of raised intersections and speed tables may affect snow removal operations. Snow plow operators should be adequately warned and trained.

Systemic Safety Potential

Best suited as a spot treatment.

Additional Information

- A Guide to Vertical Deflection Speed Reduction Techniques: Planning and Design of Speed Humps, Speed Tables and Other Related Measures
- PEDSAFE Countermeasures Guide
- Manual on Uniform Traffic Control Devices
- NACTO Urban Street Design Guide

Turn on Red Restriction

Purpose:
Turn on red restrictions prevent motorists from turning right (or left on intersecting one-way streets) while the traffic signal is red. Restricting this movement eliminates conflicts with pedestrians crossing in front of turning motorists.

Description:
Signs or dynamic electronic signs that prohibit motorists from making a right turn on a red signal.

Estimated Cost:

$ (for static signs)

Applicable Locations

Turn on red restrictions should be considered when one or more of the following conditions apply:

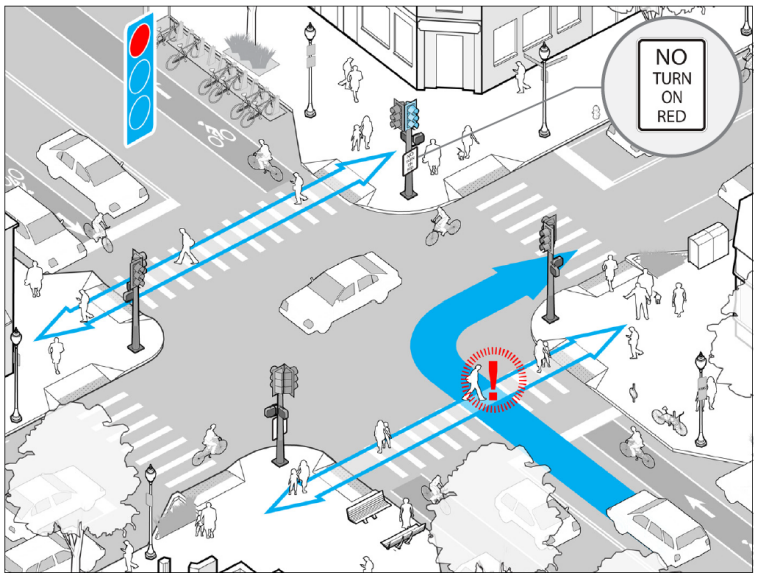
- An exclusive pedestrian phase.
- An LPI.
- High volumes of pedestrians.
- Where bicycle two-stage turn queue boxes are installed; bicycle boxes after two-stage turn queue boxes.
- Poor sight distances and visibility.
- Locations where poor intersection geometry causes unexpected conflicts; or specific cases located from intersections with 5 or more legs.
- Locations with a reported crash history.

Applicable Street Types

- Main Street
- General Urban Street
- Neighborhood Connector Street
- Suburban Connector Street

Safety Benefits

- Reduce conflicts between motorists and pedestrians.
- Prioritize pedestrian safety and convenience at intersections.
- Turn on red restrictions can significantly increase the portion of motorists who stop at marked stop lines and decrease the number of motorists who turn right on red without stopping.

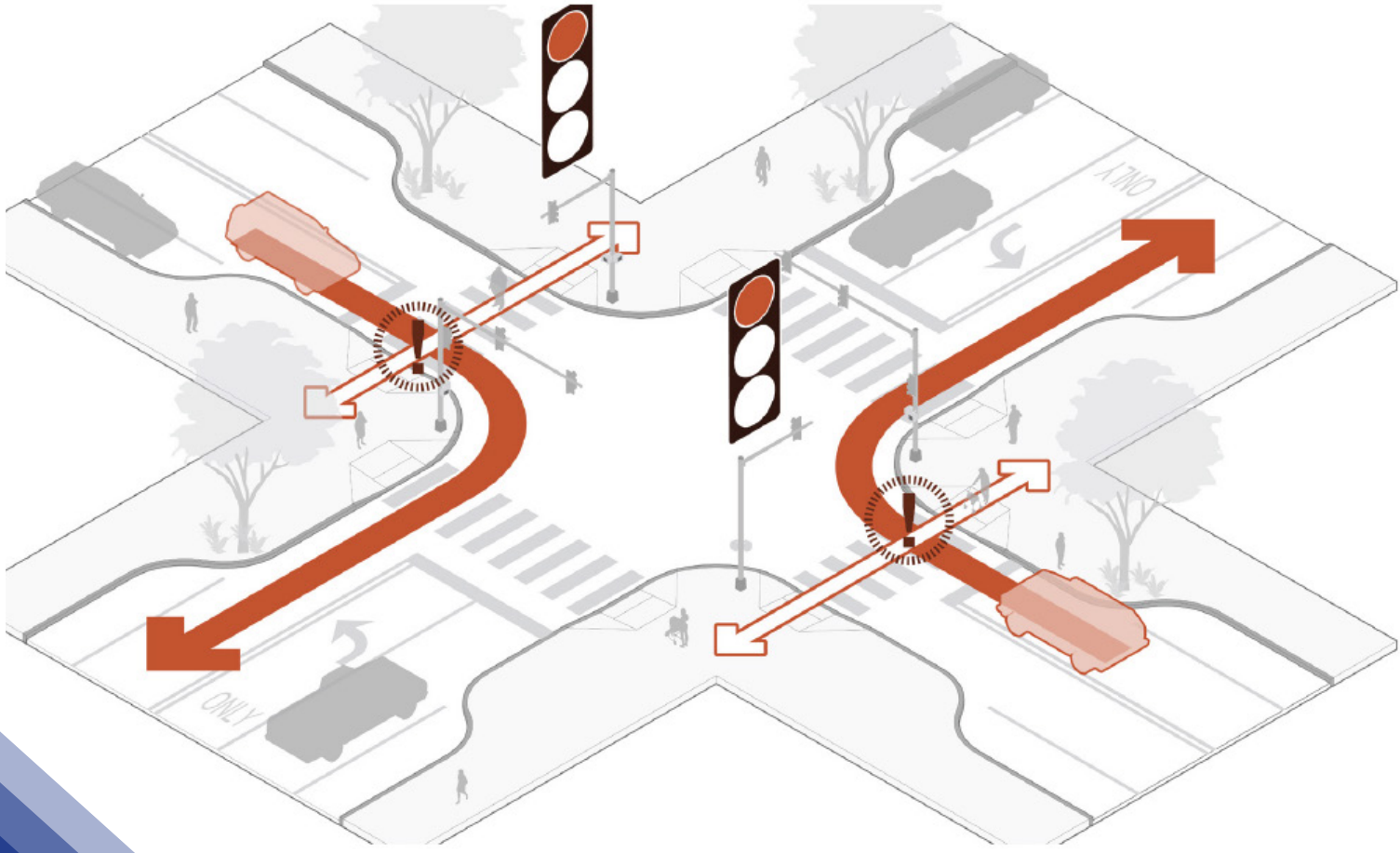


Design Guidance

- Consider dynamic electronic signs to restrict right turns only during certain times of day or during certain signal phases.
- Consider impacts to bus operations at near-side stops change to far-side if needed.
- Intersection impacts to vehicle operations should be studied.
- When used along a corridor or area of traffic signals, vehicle intrusions into pedestrian crosswalks and aggressive driving will be reduced.

Considerations

- Should be implemented all hours of the day, but can be considered by time of day in some circumstances.
- Can be used in conjunction with LPIs or bicycle signals that allow through movements when turning vehicular traffic is stopped.



Additional Information

- Manual on Uniform Traffic Control Devices (MUTCD)

Roundabout

Purpose:
All approaches must yield to traffic already within the roundabout. After yielding, drivers are able to circulate the center island before exiting to turn or continue straight. Eliminates left turning movements and intersection collisions by requiring all traffic to exit to the right of the circle.

Description:
Built with a raised circular island, roundabouts take the place of a traditional intersection. Roundabouts allow for traffic to flow and merge through the roundabout without stopping, reducing conflicts and facilitating increased motor vehicle yielding to pedestrians and bicyclists.

Estimated Cost:

$$$-$$$$ (depending on design)

Applicable Locations

- Signalized intersections
- Unsignalized intersections
- Intersections with protected bicycle lanes

Applicable Street Types

- Neighborhood Residential Street
- General Urban Street
- Neighborhood Connector Street
- Suburban Connector Street

Safety Benefits

- Reduces vehicular speeds.
- Facilitates motor vehicle yielding to pedestrians and bicyclists.
- Eliminates angle collisions.

Expected Crash Reduction

- 78-82% reduction in fatal and injury crashes (AASHTO HSM, 2010).

Design Guidance

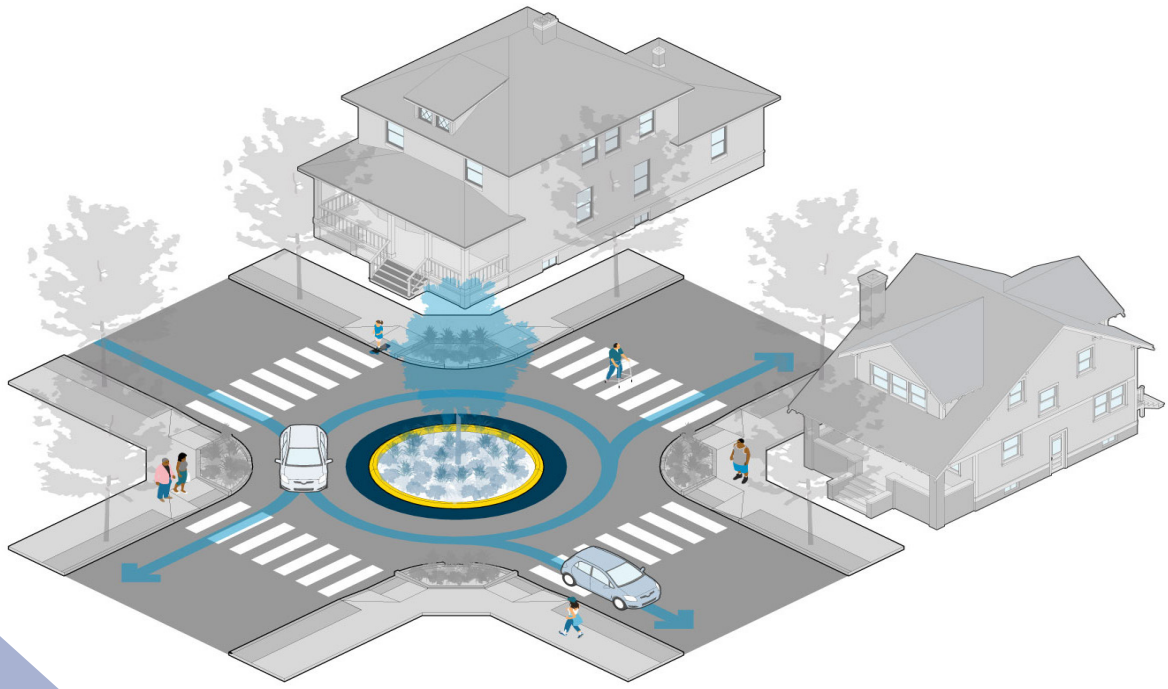
- Roundabouts should be designed for an entry speed of 15-18 mph on each leg.
- On a low speed and volume street, such as a local neighborhood street, consider installing mini-roundabouts, or neighborhood traffic circles.
- Accessible pedestrian signals are required in accordance with the Public Right-of-Way Accessibility Guidelines (PROWAG), particularly at roundabouts with more than one lane.
- Use yield rather than stop controls.
- Install signs to instruct vehicles to proceed to the right of the central shield per MUTCD Figures 2B-21 through 2B-24.
- May be used with shared lane markings, (sharrows) to indicate bicyclist usage.
- May be landscaped with low shrubs or vegetation that does not impede visibility.

Considerations

- General considerations include pedestrian and bicycle volumes, number of travel lanes, impacts on pedestrian routes, and available right-of-way.
- Where there are higher pedestrian volumes, it may be beneficial to install signal controls and wider crosswalks.
- Increasing turn radii or adding high speed slip lanes for motor vehicles can compromise pedestrian and bicyclist safety.
- Chicanes or other traffic-calming treatments can be installed on adjacent roadways.
- Consider restricting large vehicles from mini-roundabouts.
- Large vehicles, such as emergency response vehicles or school buses, may need to make left turns at intersections preceding the mini-roundabout.
- Implement parking restrictions on the approach to the traffic circle or create mountable curbs on the outside of the mini-roundabout to allow for emergency-response vehicle access.
- Modern roundabouts need to consider the needs of oversize and overweight (OSOW) vehicles. Consult the statewide OSOW routing as well as local businesses to determine appropriateness of installation.

Systemic Safety Potential

This is a systemic corridor recommendation that improves road conditions for all roadway users.



Additional Information

- Manual on Uniform Traffic Control Devices
- BIKESAFE Bicycle Safety Guide and Countermeasure Selection System
- PEDSAFE Pedestrian Safety Guide and Countermeasure Selection System
- NACTO Urban Street Design Guide
- FHWA Proven Safety Countermeasures

Rectangular Rapid Flashing Beacon (RRFB)

Purpose:
Used in combination with warning signage, Rectangular Rapid Flashing Beacons (RRFBs) provide a high-visibility warning to drivers when pedestrians are using a marked crosswalk.

Description:
Bright, irregularly flashing LEDs, mounted with pedestrian crossing signs, which increase pedestrian visibility to drivers at uncontrolled marked crossings. RRFBs consists of two rectangular-shaped yellow indicators with an LED light source that flashes with high frequency when activated, typically by pedestrian pushbuttons. RRFBs are often placed at locations with significant pedestrian safety issues but may also be located at a school or trail crossing.

Estimated Cost:

$$

Applicable Locations

- RRFBs are a treatment option at many types of unsignalized pedestrian crossings, including at standard pedestrian, school, or trail crossings.

Applicable Street Types

- Neighborhood Residential Street
- Main Street
- General Urban Street
- Neighborhood Connector Street
- Suburban Connector Street

Safety Benefits

- Increase driver yielding.
- May increase effectiveness of other safety treatments, such as advance yield markings with YIELD HERE FOR PEDESTRIAN (R1-5) signs.
- More effective than traditional overhead or post-mounted circular beacons.

Expected Crash Reduction

- 47% reduction for all pedestrian-motor vehicle crashes. (NCHRP Report 841, 2017).

Design Guidance

- Place on both sides of an uncontrolled crosswalk.
- If pole-mounted, place below a pedestrian, school, or trail crossing warning sign and above a diagonal downward arrow plaque.
- May also be used with an overhead-mounted crossing warning sign, located at or immediately adjacent to an uncontrolled marked crosswalk.
- If sight distance approaching the crosswalk is limited, an additional RRFB may be installed on the approach with a post-mounted W11-2, S1-1, or W11-15 sign with an AHEAD or distance plaque. Consider other treatments in these locations.
- Pedestrian detection, typically pushbuttons, must meet the requirements for PROWAG. Flashing time should conform to MUTCD, part 4L.

Considerations

- RRFBs should not be used in conjunction with "Yield," "Stop," or traffic signal control (except at roundabouts).
- An RRFB should not be used without a pedestrian crossing sign.
- RRFBs should only be used at locations with significant pedestrian safety issues. The overuse of RRFBs can diminish their effectiveness.
- Other treatments may be more appropriate in locations with sight distance constraints.
- Solar-power panels may eliminate the need for a power source.
- On high speed or multi-lane roadways, a Pedestrian Hybrid Beacon may be more appropriate (see Section 4U of the MUTCD).

Systemic Safety Potential

Spot treatment or targeted systemic locations, such as trail or school crossings are appropriate. Broad application suggests other treatments such as speed reduction or roadway redesign may be necessary.

Additional Information

- Manual on Uniform Traffic Control Devices
- FHWA Proven Safety Countermeasures
- PEDSAFE Pedestrian Safety Guide and Countermeasure Selection System

Multiuse Paths and Trails

Purpose:
Separates bicycle and pedestrian traffic from motor vehicles in a dedicated space outside the curb of the street.

Description:
Paths that accommodate two-way traffic for bicyclists and pedestrians. While separated from traffic, multiuse paths are located inside and parallel to the road right-of-way. Trails can be located along railway or utility corridors, land dedicated for planned but unbuilt streets, and through public land.

Estimated Cost:

$$$$

Applicable Locations

- Multiuse paths may be preferable to separated bike lanes if low pedestrian volumes are anticipated in order to minimize right-of-way impacts.
- Most useful on wide, multi-lane streets with speeds above 30 mph, or significant motor vehicle volume.
- Applicable on streets with three or more lanes, speeds of 30 mph or greater, or 6,000 vehicles or more.
- Suited for truck or bus routes, or streets where on street bike lane obstruction is likely to be frequent.
- Locations with limited right-of-way where combining walking and bicycling facilities to save space may be the only feasible option.

Applicable Street Types

- Neighborhood Connector Street
- Suburban Connector Street

Safety Benefits

- Fewer conflicts with motor vehicles than on-road bike lanes.
- Accommodate two-way pedestrian and bicyclist flow.

Expected Crash Reduction

- 25% reduction for all bicyclist-motor vehicle crashes. (Alluri et al, 2017)

Design Guidance

- Minimum 2-foot graded area with clearance from lateral obstructions, such as bushes, large rocks, bridge piers, abutments, and poles.
- A minimum 1-foot clearance from "smooth" features, such as bicycle railings or fences with appropriate flaring and treatments.
- Ideally, a graded shoulder area of 3 to 5 feet, with a 5-foot minimum buffer from traffic for user comfort and snow storage.
- Separation of modes in areas with existing or anticipated higher levels of activity, including a 10-foot (minimum width) bikeway and a 5-foot (minimum width) walkway.
- Adequate widths to enable side-by-side travel and passing and occasional maintenance vehicles typically at least 11 feet wide.
- Wider multiuse paths may be needed when adjacent to retail or commercial development to accommodate street furniture, swinging doors, etc, on steep up grade segments, or tight corners.
- PROWAG requirements for slopes must be followed.
- Lighting should be provided at path/roadway intersections at a minimum and at other locations where personal security may be an issue or where nighttime use is likely to be high.

Considerations

- To maintain year-round use, multiuse paths should be swept and plowed of snow, which may require additional maintenance equipment.
- High-quality construction and maintenance that avoids pavement cracking and buckling.
- Asphalt preferably as the surface material. If concrete is used, use longer sections with small joints for a smoother riding experience.
- Intuitive and safe intersection crossings.
- Straight alignments to allow direct and higher speed travel.
- Removal or relocation of poles, traffic signs, trees, or other obstructions that are present in many existing sidepath locations.
- Adequate lighting for nighttime use.

Systemic Safety Potential

This is a systemic corridor recommendation that improves road conditions for all roadway users.

Additional Information

- ODOT Multimodal Design Guide
- FHWA Bikeway Selection Guide
- BIKESAFE Bicycle Safety Guide and Countermeasure Selection System
- FHWA Shared Use Path Level of Service Calculator

Sidewalks

Purpose:
Sidewalks provide space along a street for pedestrian travel.

Description:
For sidewalks to function, they must be kept clear of any obstacles and be wide enough to comfortably accommodate expected pedestrian volumes (as anticipated by density and adjacent land use), and different types of pedestrians, including those using mobility assistance devices, pushing strollers, or pulling carts.

Estimated Cost:
$$-$$$$ (depending on design and length)

Applicable Locations
- Sidewalks should be installed on both sides of the street unless otherwise inconsistent with the City's Transportation Plan.

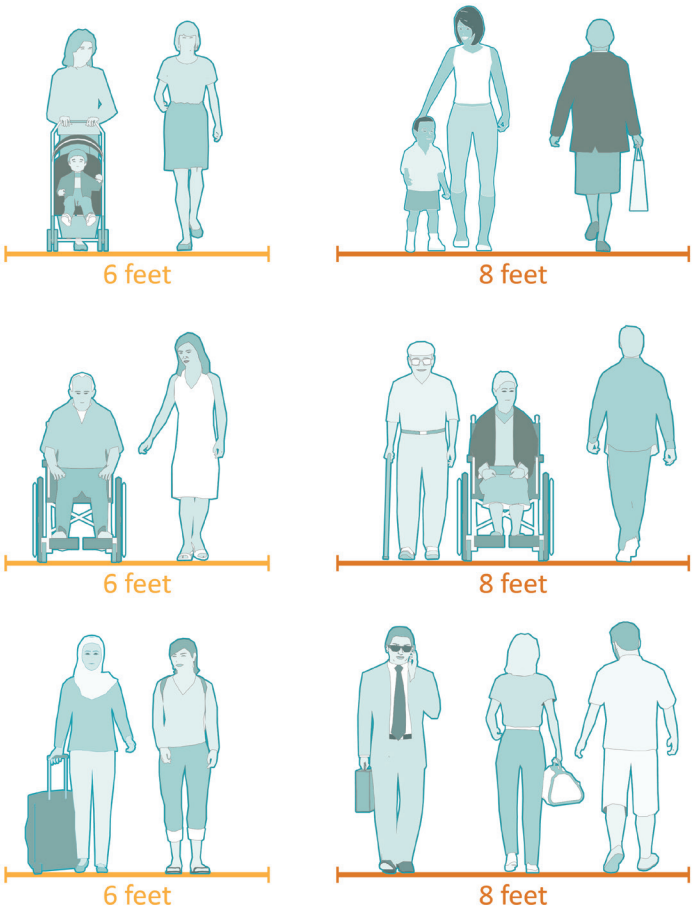
Applicable Street Types
- All street types

Benefits
- Sidewalks make walking an easy choice between destinations since they create a network for pedestrian travel throughout the city.
- Sidewalks and their buffers provide space for utilities, signs, and amenities such as bus shelters or waiting areas, bicycle parking, public seating, public art, newspaper stands, trash and recycling receptacles, and greenscape elements.
- Sidewalks are not only used for transportation, but for social walking, exercise, lingering, commerce, recreation, and as public social space—all activities that contribute to a vibrant and lively street.
- Sidewalks make access to transit possible since the majority of transit users walk between their destination and transit stops.

Expected Crash Reduction
- 65-89% reduction for pedestrian-motor vehicle crashes (Gan et al, 2005).

Design Guidance

- The widths of sidewalks will vary based on context and expected pedestrian volumes. Widths may range from 5 feet along residential and industrial streets to 12 feet or wider downtown and in areas of high use. Width can be lost due to grass on both sides and occasional large trees of up to 1 foot.
- Sidewalks must include an accessible pathway that is free of obstructions, such as light poles, traffic signals, trees, utilities, and furniture. ADA guidelines allow a minimum accessible pathway of 4 feet where there are major constraints. Bloomington uses a minimum width of 5 feet for the accessible pathway.

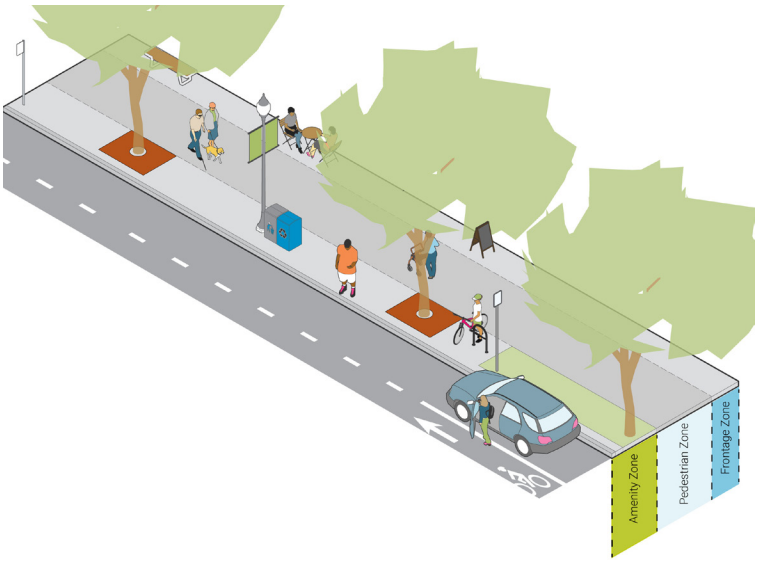


Considerations

- Sidewalks that are replaced for maintenance reasons should not be narrower than the sidewalk being replaced (e.g. a 6-foot wide sidewalk should not be replaced with a 5-foot wide sidewalk).
- All new sidewalks and curb ramps shall comply with ADA regulations, including running slope and cross slope.
- Sidewalks should be clear of any obstructions, including utilities, traffic control devices, trees, and furniture and large surface defects or heaved sections.
- The width and design of sidewalks will vary depending on street type, demand, and available right-of-way.
- Sidewalks should, as much as possible, follow the natural path of pedestrian travel parallel to the street. Crosswalks should be aligned with sidewalks to maintain the most direct path of travel.

Systemic Safety Potential

This is a systemic corridor recommendation that improves road conditions for all roadway users.



Additional Information

- NACTO Urban Street Design Guide
- PROWAG
- FHWA Guide for Maintaining Pedestrain Facilities for Enhanced Safety

Tree Lawn/ Boulevard

Purpose:
Separate sidewalk from the roadway, narrow motorists' field of vision. Add shade, comfort, and beauty to the street.

Description:
Trees or other appropriate plantings in raised medians or on the edge of streets.

Estimated Cost:

$$-$$$$ (depending on design and length)

Applicable Locations

- Residential neighborhoods.
- Downtown commercial areas.
- Rural roads.
- Areas near schools.

Applicable Street Types

- All street types

Safety Benefits

- Large, mature trees can provide a physical barrier between the road and pedestrian pathways.
- May reduce vehicle speeds due to increased perceived friction and sense of enclosure.
- Lower vehicle speeds can result in improved safety outcomes for all road users.

Design Guidance

- Select the right tree species for a space to provide canopy and minimize maintenance costs. Avoid tree species with shallow root systems that may heave sidewalks and pathways.
- Provide access to 800 cubic feet or more of unrestricted and unshared soil space.
- Provide soil depth of 36 inches or more.
- Street trees are healthier in areas with greater permeable surface access.
- Provide minimum 5-foot-wide tree pit or raised planter area in urban contexts, and continuous vegetation in the planting strip in non-urban contexts where possible.
- Coordinate placement of street trees with streetlights, overhead utilities, street furniture, traffic signals and signs (especially stop signs).
- Tree pits or raised planter areas may accommodate trees when additional sidewalk is needed to accommodate pedestrian volumes.
- Make sure to minimize construction impacts including trenching and soil compaction in root areas.

Considerations

- Width of planting zone should be considered so trees do not damage the sidewalk as they grow.
- Street trees can improve vibrancy of the streetscape.
- Street trees help to create a sense of enclosure.
- Consider allocation of space to optimize tree health and maintenance.
- Sight distance (and the maintenance needed to maintain a safe sight distance) must be considered for street trees near intersections or on roadway curves.
- Mature trees and other plantings by the City require ongoing maintenance, including regular trimming, pruning, and street sweeping.

Systemic Safety Potential

Street trees can be included for traffic calming on all street types. Sight lines should be maintained on all street types and clear zones as applicable.

Additional Information

- Bloomington Urban Forestry Plan
- Bloomington Tree Care Manual