Village of Flossmoor:

Local Road Safety Plan

June 2022

PREPARED FOR:
Chicago Metropolitan Agency for Planning (CMAP) and Village of Flossmoor

FLOSSMOOR

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Jacobs

Executive Summary

Project Overview

The Village of Flossmoor partnered with the Chicago Metropolitan Agency for Planning (CMAP) and Jacobs Engineering to develop a Local Road Safety Plan (LRSP). A LRSP takes a proactive approach to identifying, analyzing, and prioritizing roadway safety improvements. The plan is tailored to local issues identified through historical safety performance data, insights of the residents who walk, bike, and drive in the village daily, and its steering committee comprised of residents, village staff, and regional government representatives. LRSPs are intended to act as a preliminary guidance tool or planning document and are not commitments to acting on suggested countermeasures or implementing policies that are shared within the LRSP. The major items that LRSPs highlight are identifying, analyzing, and prioritizing potential roadway improvements that aid in reducing the frequency and severity of crashes on public roadways. However, the prioritized countermeasures and/or policies that are proposed to the local owner are all dependent upon the needs of the owners, their available funding resources, and the feedback obtained in outreach and engagement activities. For these reasons, this LRSP should be considered another tool in the toolbelt for the local agency to reduce roadway fatalities and severe crashes.

The focus of the LRSP is higher-severity crashes, such as fatal and injury (F+I) crashes. This prioritizes treatments that can save more lives and minimize crash-related injuries, while also striving to minimize crashes that only result in property damage. Figure ES-1 provides a map of crashes by severity that occurred on roadways in the Village between 2015 and 2019 (the most recent crash data when the project started).

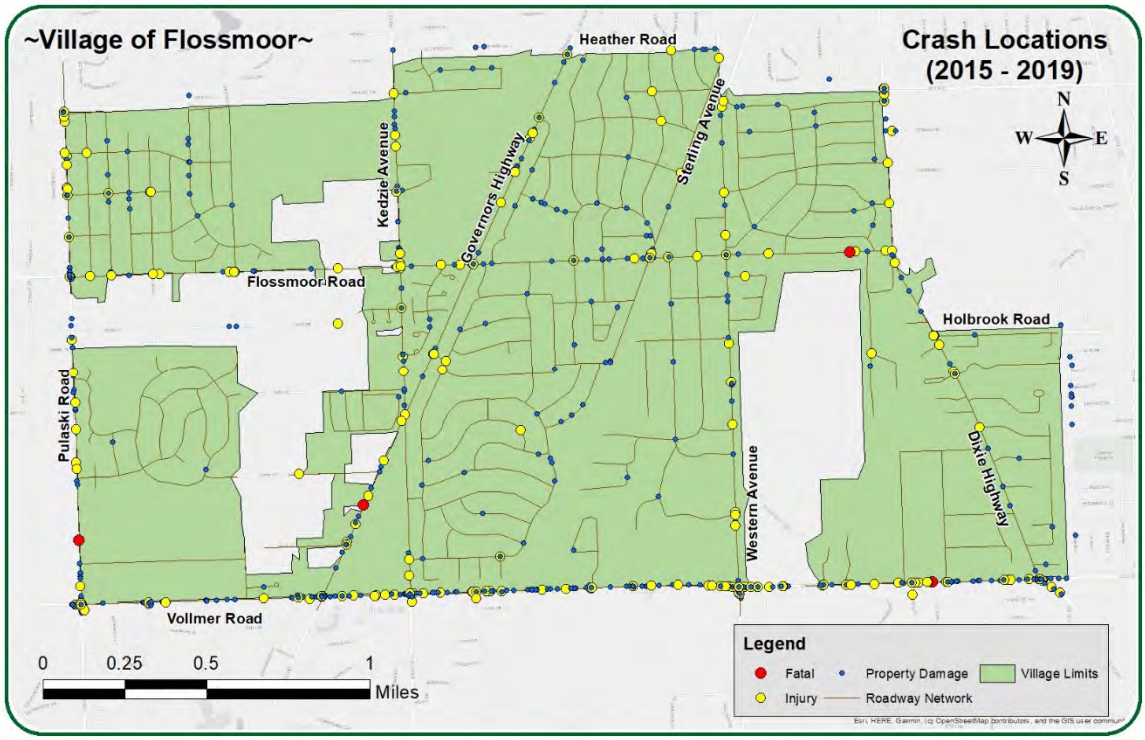

Figure ES-1. Village of Flossmoor Crash Locations

Between 2015 and 2019, 1,333 total motor vehicle crashes occurred within the Village of Flossmoor.

- Five fatalities resulted from four crashes.
- Three fatal crashes occurred with clear weather conditions, and one occurred during rain.
- One fatal crash involved a turning vehicle, and three involved vehicles striking a fixed object.
- Three fatal crashes involved dark lighting conditions and one with daylight conditions.
- One of the five fatalities involved drug impairment.
- 369 crashes resulted in at least one person involved in the crash obtaining some type of injury.
- Nine pedestrian or bicycle crashes, eight resulted in injuries, three serious injuries.
- The top two causes for injury crashes – failing to yield right of way and failing to reduce speed to avoid crash.

The long-term goal of the LRSP is to eliminate traffic fatalities in the Village of Flossmoor and make the roadways safer for all users. This goal aligns with CMAP's ON TO 2050 goal to eliminate traffic fatalities in the region by 2050.

This plan goes beyond the typical local road safety plan in that it evaluates all roads in the village regardless of roadway jurisdiction. Most roadway miles are under local jurisdiction (41.6 miles), followed by county jurisdiction (6.8 miles) and state jurisdiction (6.3 miles). By including all roadways in the village, this plan provides the public and village staff a holistic view of roadway safety in the Village of Flossmoor. This will allow the village staff to approach and work with Illinois Department of Transportation (IDOT) and Cook County Department of Transportation and Highways (DoTH) to improve the safety on roadways under their jurisdiction in the Village.

Plan Development

This LRSP is built upon the previous activities and steps outlined in Figure ES-2 below. It is informed by two previous deliverables, the Existing Conditions Report (ECR) and the Countermeasures and Policy Recommendations Memorandum (CPRM), which received support from the steering committee. This Local Road Safety Plan, the final deliverable of the project, was created to detail plan objectives, identify the most suitable transportation improvements for priority locations in the community, and provide implementation steps, process timelines, and funding guidance.

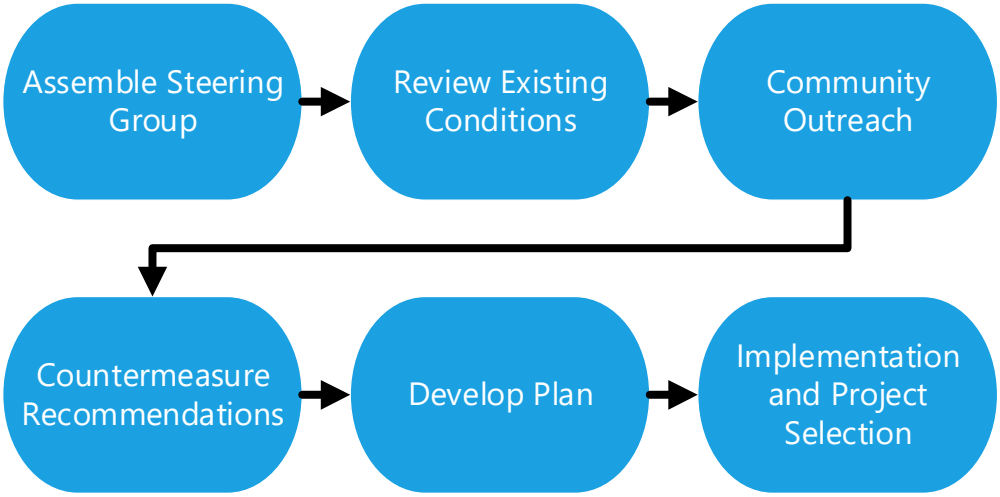

Figure ES-2. Local Road Safety Planning Flowchart

Existing Conditions

Figure ES-3 presents an analysis of the distribution of total as well as F+I crashes by crash type. This figure illustrates several key features of the Village of Flossmoor's traffic safety performance profile. First, the majority of F+I crashes within the village are crash types commonly associated with intersections (e.g., rear-end, turning, and angle). Although rear-end crashes are generally relatively lower in severity than some other prominent crash types, they also represent a large proportion of all severe crashes. These insights together indicate safety concerns related to congestion on high-speed roadways and intersections where the potential for severe rear-end crashes is elevated.

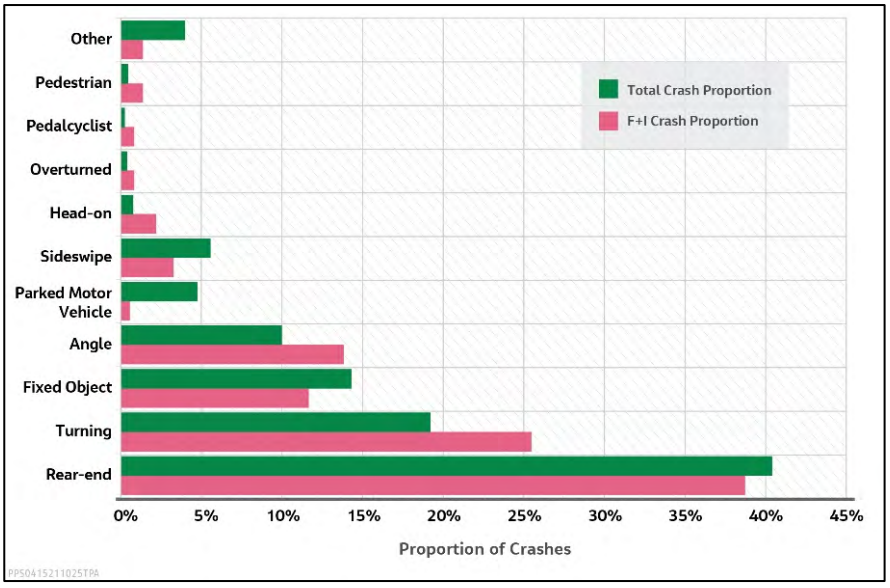

Figure ES-3. Crash Type Distribution

Like rear-end crashes, angle and turning-related crashes represent a large proportion of severe crashes. These crashes might commonly be addressed through thorough reviews of intersection geometry and signal timing. These treatments can be used to identify and address instances where turning motorists may not be able to adequately identify gaps in opposing traffic, intersection dilemma zones where there is an elevated chance for red-light running, and similar infrastructure-related cases. Similarly, using targeted enforcement or other policy-related means, improved intersection compliance may be achieved.

Though crashes involving vulnerable road users (e.g., pedestrians and pedal cyclists) represent only a small proportion of total crashes, these crash types have a strong tendency to be severe, resulting in significant injury. Within the 5-year study period, there were three pedestrian and three bicycle-related crashes. None of these incidents resulted in a fatality; however, all three pedestrian crashes were incapacitating severities, and all three bicycle-related crashes resulted in non-incapacitating injuries. Though no fatalities have been reported in these crashes during the study period, the potential for such incidents remains, making it a strong priority for consideration within the LRSP. These types of crashes are commonly addressed through improvements to intersection and mid-block crossing facilities, installation of bike lanes and advanced pavement markings, and speed management through traffic calming, enforcement, and lower speed limits.

Community input was collected throughout the project with four outreach activities, two in-person events (National Night Out and Flossmoor Fest) and two virtual activities (online survey and online interactive map). This outreach resulted in nearly 500 unique comments and survey responses that reflect the insights and priorities of Flossmoor residents. Figure ES-4 presents the number of comments received by general safety topic. Public feedback relating to pedestrian and bicyclist safety accounted for 190 comments followed by 163 comments related to intersections. Speeding issues and young drivers related comments accounted for 152 and 97 comments, respectively.

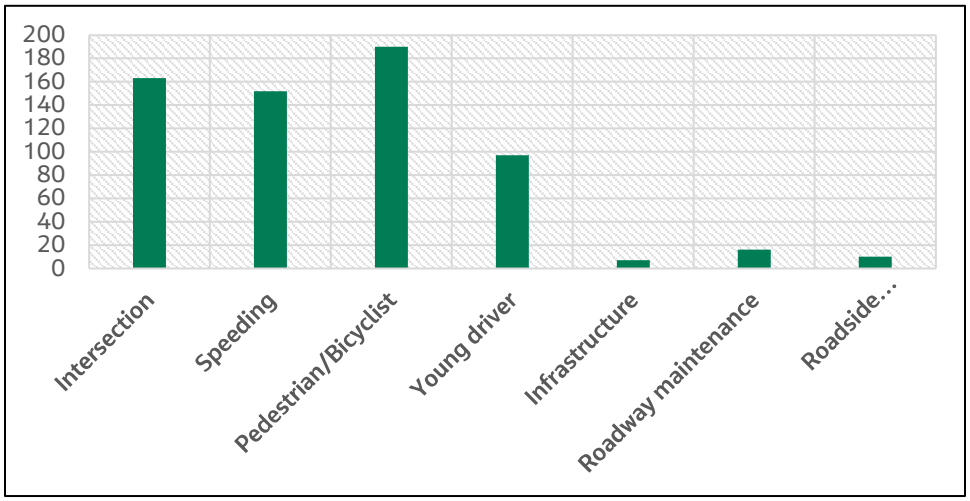

Figure ES-4. Public Comment Categories

Emphasis areas were identified to focus the direction of the Flossmoor LRSP. Emphasis areas are defined categories of crashes, roadway user behaviors, or infrastructure improvements that represent a unique need within a study area and should be specifically targeted to produce the greatest safety impact. They are typically selected based on patterns in crash data, local policies, and community need, and are intended to guide and unify strategic planners and stakeholders toward the goal of eliminating traffic related fatalities.

Based on the crash data analysis and comments received through outreach efforts, the following emphasis areas are highlighted for the Village of Flossmoor as a starting place for the LRSP:

- Pedestrians and Bicyclists
- Speed Management
- Young Drivers
- Intersections

Policy and Planning Recommendations

The LRSP process identified several policy and planning recommendations the village should pursue in the near term. These recommendations align with the emphasis areas discussed above. These strategies focus on speed management, pedestrians, bicyclists and improving driver behavior and compliance through non-infrastructure means.

The policy recommendations that focus on speed management include targeted traffic enforcement around schools and a school zone signing review. Aggressive driving in the near village schools was a concern among residents and steering committee members. In addition, the Flossmoor Police Department performed a study that found inconsistent signage was being used to warn motorists about the presence of the school, including some with inconsistent designs, and recommended replacing these signs with consistent, modern high-visibility alternatives. School zone signage should be consistent throughout the village and is absent around the Homewood-Flossmoor High School along Governors Highway.

Other policy recommendations are centered around young drivers and education. The village can engage young road users through social media to promote safe driving behaviors and traffic safety culture. Social media can also help connect with young people's parents and families indirectly, spreading important messages promoting road safety through social channels. Partnering with the school district to develop a Safe Routes to Schools program and expanding education on pedestrian and bicycle safety are also recommended.

The planning recommendations are focused on bicyclists and pedestrians. Pedestrian and bicyclist safety was the top concern for residents and the steering committee members. By developing a bicycle plan, the village will have a long-term plan for improved bicycle connectivity and safety in the village and surrounding areas. The pedestrian safety and accessibility plan will provide the village with a comprehensive vision for the future of its pedestrian accommodations.

Furthermore, the LRSP recommends the Village implement a Complete Streets plan that adheres to the Complete Streets policy that was adopted by the Village Board on March 16, 2020. Complete Streets are designs to reorient roadway spaces to better serve the surrounding community instead of operating purely as a facility to serve motor vehicle through traffic. Complete Streets seek to promote non-motorized transportation modes and achieve zero traffic fatalities.

Priority Locations

Priority locations to implement safety related infrastructure improvements were identified through a data-driven process that evaluated the crash history and community input at intersections and roadway segments throughout the village. The LRSP identified the top 3 intersections and roadway segments for each roadway jurisdiction (state, county, and local). Figure ES-5 shows all nine priority roadway segments and all nine priority intersections.

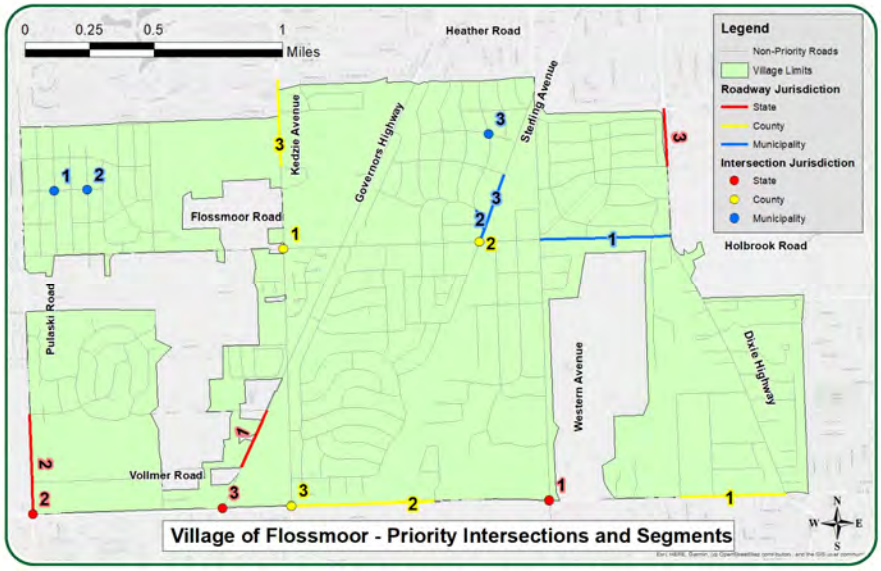

Figure ES-5. Priority Intersection and Segment Locations

Segments

Approximately 58 miles of public roadways were reviewed during analysis, which includes state, county, and local jurisdictions. It is recommended that the village prioritize roadway segment related projects based on breadth of impact and feasibility, focusing first on projects along major routes, followed by lower volume roads. This approach will positively impact the most people through the initial stages of implementation.

When observing the speed limit along the prioritized segments, nearly 70% of the project miles were assigned to segments which have a posted speed limit of 40 miles per hour or less. This aligns to many comments by community members that frequently expressed concern about speeding and aggressive driving on roads that typically serve residential and commercial areas rather than higher-speed corridors. Table ES-5 is ordered based on the jurisdiction, then priority ranking for each of the top nine segment locations.

Table ES-1. Priority Segments

Priority Rank	Street Name	Limit 1	Limit 2	Length (miles)	Jurisdiction	Crash Severity (2015-2019)				Public Comments	Emphasis Area(s)
						Fatal	Serious Injury	Injury	Property Damage Only		
1	Governors Highway	West 198th Street	196th Street	0.24	**State**	1	0	3	5	0	*Speed Management*
2	Crawford Avenue	Vollmer Road	Ballantrae Way	0.39	**State**	1	0	0	6	0	*Pedestrian & Bicyclists*
3	Dixie Highway	West 187th Street	Vardon Lane	0.23	**State**	0	0	6	12	1	*Intersections & Speed Management*
1	Vollmer Road	Dixie Highway	Cambridge Avenue	0.42	**County**	1	1	11	20	1	*Speed Management*
2	Vollmer Road	Kedzie Avenue	Oak Lane Road	0.56	**County**	0	2	13	66	2	*Pedestrians & Bicyclists, Speed Management, Heavy Vehicles*
3	Kedzie Avenue	Viking Drive	186th Street	0.34	**County**	0	2	0	6	2	*Pedestrians & Bicyclists, Young Road Users, Speed Management*
1	Flossmoor Road	Dixie Highway	Western Avenue	0.51	**Municipality**	1	0	2	0	7	*Pedestrians & Bicyclists, Speed Management*
2	Park Drive	Sterling Avenue	Argyle Avenue	0.08	**Municipality**	0	0	0	1	6	*Pedestrians & Bicyclists, Intersections*
3	Sterling Avenue	Flossmoor Road	Wallace Drive	0.28	**Municipality**	0	0	1	2	14	*Pedestrians and Bicyclists*

Intersections

It is recommended that the village prioritize intersection related projects which exhibit the greatest opportunity for improvement, featuring multiple countermeasure recommendations. Treatment of these locations will be expected to have the greatest impact, addressing multiple safety issues and resident concerns within a single project. All three of the state intersections are signalized. The prioritized county intersections consist of two signalized and one all-way stop controlled intersections, while all three local intersections are uncontrolled or lack a traffic control device. Table ES-2 is ordered based on the jurisdiction and then prioritized for each of the top nine intersection locations.

Table ES-2 Priority Intersections

Priority Rank	Street Name 1	Street Name 2	Jurisdiction	Total Entering Vehicles	Crash Severity (2015-2019)				Public Comments	Emphasis Area(s)
					Fatal	Serious Injury	Injury	Property Damage Only		
1	Western Avenue	Vollmer Road	**State**	27,900	0	2	38	127	6	*Pedestrians & Bicyclists, Intersections*
2	Crawford Road	Vollmer Road	**State**	33,150	0	4	30	80	0	*Intersections*
3	Governor's Highway	Vollmer Road	**State**	29,650	0	2	20	42	0	*Intersections*
1	Flossmoor Road	Kedzie Avenue	**County**	21,400	0	3	17	20	3	*Pedestrians & Bicyclists, Intersections*
2	Flossmoor Road	Sterling Avenue	**County**	8,300	0	0	4	9	11	*Pedestrians & Bicyclists, Intersections*
3	Vollmer Road	Kedzie Avenue	**County**	27,650	0	0	14	48	0	*Pedestrians & Bicyclists, Intersections*
1	189th Street	Springfield Avenue	**Municipality**	NA	0	0	2	4	0	*Pedestrians & Bicyclists, Intersections*
2	189th Street	Hamlin Avenue	**Municipality**	NA	0	0	3	0	0	*Pedestrians & Bicyclists*
3	Argyle Avenue	Gordon Drive	**Municipality**	NA	0	0	1	2	2	*Pedestrians & Bicyclists, Speed Management*

Forward Thinking

LRSPs and their supporting materials are intended to be a continually available reference tool for Village of Flossmoor staff and residents. The LRSP and its associated documents should be considered and referenced for guidance on all roadway projects. When the time comes for updating the LRSP, it should be an opportunity for evaluation. Consider which aspects of the LRSP and its supporting documents were and were not useful and let those answers guide the update. This allows the next version to advance the continual improvement of the village transportation system's needs.

Additionally, it is recommended that the village create a traffic safety working group that tracks the safety performance of the roadways. This group should be like the steering committee with representation from the different village departments and community stakeholders. The group should monitor the progress implementing the LRSP recommendations and be a forum where traffic safety issues that arise are discussed. This group would be responsible for the continued monitoring of locations where improvements are made, appropriately evaluating safety performance, and ensuring that the most current roadway condition and performance information is readily available for future use.

In the coming years, metrics should be tracked to determine the effectiveness of this plan and its execution. Helpful metrics that should be tracked include:

- **Crash data.** Track the frequency, severity, and type of crashes that occur after implementation of each project to determine effectiveness and to inform future use of such countermeasures.
- **Pedestrian and Bicycle Activity.** Keep an eye on active transportation modes and track how the installation of pedestrian- and bicycle-oriented facilities impact how community members travel. Increases in safe use of active modes indicates a great value for the community. Additionally, measuring bicycle ridership along certain routes within the Village where improvements are implemented is one way measure impact.
- **Community Sentiment.** As safety improves, often community sentiment will as well - which can be gathered via public online surveys. As drivers and other road users feel safer in their daily lives, this can provide a host of impactful community benefits.
- **Finances.** Avoiding crashes and saving residents from the health and financial impacts of roadway crashes can also produce financial benefits for the whole Village by minimizing the impacts of safety issues on local businesses, reducing the strain and cost of emergency services, and more. A different financial metric that can be tracked would be the success of securing grants or funds that are dedicated to improving roadway safety. In many cases, these opportunities provide 90% of the cost of the project with a 10% local match and are a great avenue to secure funding for safety-focused improvements.

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1. Introduction

1.1 Project Overview

To improve its transportation infrastructure and the quality of life for its residents, the Village of Flossmoor has developed a comprehensive Local Road Safety Plan in partnership with the Chicago Metropolitan Agency for Planning (CMAP). The overall goal of this plan was to foster collaboration with residents and local stakeholders to identify and equitably address the Village's most pressing traffic safety concerns and expand safe mobility—for all road users.

Local Road Safety Plans take a proactive approach to understand and address unmet traffic safety needs of residents. As communities grow and evolve, so do their transportation facilities and movement patterns, and so must their plans to achieve safe operations. This plan identifies practical goals for the Village's roadway facilities, as well as holistic strategies for achieving those goals, based upon contemporary traffic safety research, historical safety performance data, and the invaluable insights of the residents who drive, walk, and bike on these facilities every day.

Figure 1-1. A view of Flossmoor's central business district

1.2 Document Purpose

This Local Road Safety Plan (LRSP) is built upon the previous activities and steps outlined in Figure 1-2 below. It is informed by two previous deliverables, the Existing Conditions Report (ECR) and the Countermeasures and Policy Recommendations Memorandum (CPRM), which received support from the steering committee. This Local Road Safety Plan, the final deliverable of the project, was created to detail plan objectives, identify the most suitable transportation improvements for priority locations in the community, and provide implementation steps, process timelines, and funding guidance.

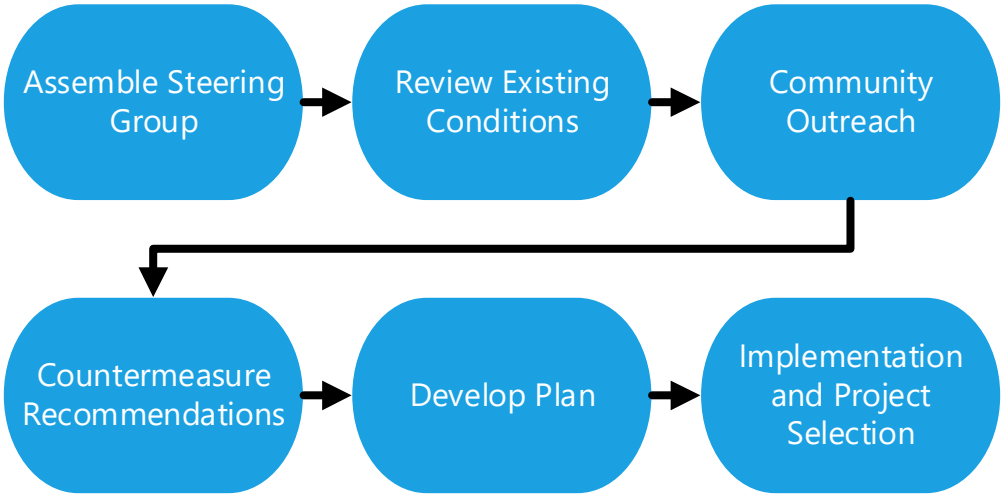


Figure 1-2. Local Road Safety Planning Flowchart

2. Pursuing Safety

2.1 A "Safe System" Approach

The "Safe System" approach to traffic safety is human-centered, focusing on creating an environment that anticipates and accommodates human error through robust transportation infrastructure and policies. In other words, a Safe System acts as a safety net for all road users, even in the face of mistakes or misjudgments, reducing opportunities for crashes to occur and minimizing the severity of crashes that do occur. This approach also recognizes the value of pursuing change in the behavior of road users through enforcement, education, and policy, viewing them as opportunities to further improve the safety of an already safe and forgiving roadway system.

The use of a Safe System approach is especially helpful when patterns of distracted or aggressive driving have been identified, as is the case in Flossmoor. While these behaviors cannot directly be influenced by roadway design features, their harm can be mitigated through a comprehensive, forward-looking, and safety-oriented design. Similarly, at locations that feature higher volumes of pedestrian and bicycle traffic—such as Flossmoor's local schools, Metra station, and central business district—additional design considerations are essential to ensure that these non-motorized road users are protected without sacrificing connectivity or convenience.

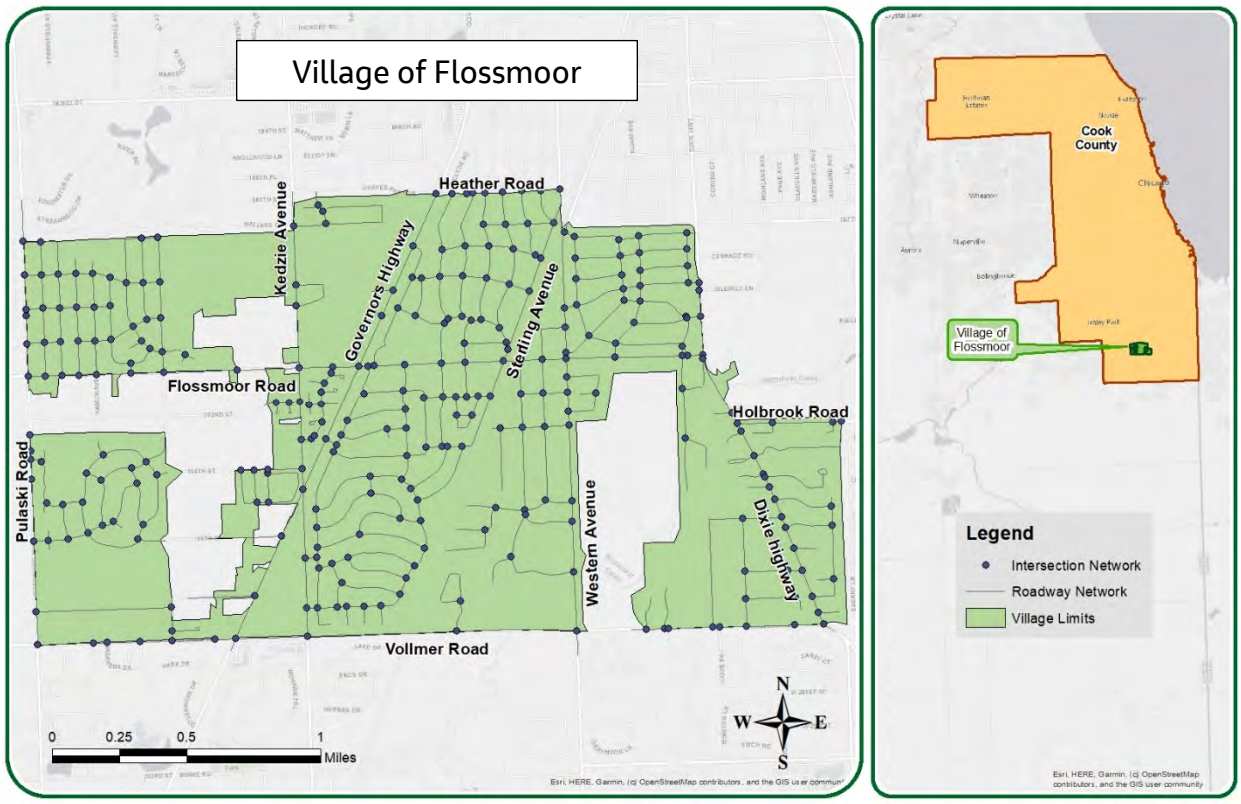


Figure 2-1. Village of Flossmoor location map and roadway network

2.2 A Comprehensive Strategy

While roadway design and infrastructure improvements are a central part of any traffic safety program, they must be complemented with similarly innovative and data-driven behavioral and cultural strategies. In studies of traffic safety, it is common to highlight five groups of major players using the "5 E's": engineers, educators, enforcement officers, emergency service providers, and everyone else.

2.2.1 Engineers

Responsible for the design and maintenance of transportation facilities, engineers at the local, regional, and state level play a crucial role in the pursuit of traffic safety. Using modern, data-driven best practices and design standards, engineers can create roads that prioritize safety and minimize severe traffic crashes. Through research-driven analyses, they can optimize the use of limited available funds to update existing facilities to achieve infrastructure improvements that can save lives and create a more walkable, reliable, and safe system.

2.2.2 Educators

Educators at all levels can help shape our community's drivers through safety-informed curricula and influential programming for students. By collaborating with educators and community leaders, the Local Road Safety Plan team can connect with younger road users to establish a stronger road safety culture that can produce long-term impacts. This can include awareness campaigns within schools, advancements in new driver education programs, safe school routes planning, and more.

2.2.3 Enforcement Officers

Local and state police play an important role in traffic safety by enforcing laws designed to keep road users safe. They can act as a deterrent, responding to patterns of unsafe driving behaviors such as speeding, running red lights, drunk driving, and more, producing long-term results when deployed effectively. Partnerships with enforcement agencies can also provide great value to safety planning by tapping the unique insights of officers regarding their community's roads and safety needs as well as historical patterns of unsafe driver behaviors.

2.2.4 Emergency Service Providers

Emergency response and medical professionals are other key players in the pursuit of traffic safety. Though their role looks very different from the others, their capacity to respond quickly and effectively when needed to traffic crashes can save lives, and margins of a few minutes can be the difference between a severe injury and a fatality. For this reason, emergency medical responders have a critical role in the development of an effective, comprehensive road safety plan. Partnerships can produce a greater understanding of the needs of responders to react quickly to incidents, what types of injuries may be the most crucial to address through infrastructure improvements, and more.

2.2.5 Everyone Else

A catch-all for all community members who may be able to improve safety for themselves and those within their spheres of influence, this group may be the greatest resource available to a road safety team. This group knows the community's roads, the shortcomings of their infrastructure, the needs of themselves and their neighbors, and more. They have the capacity to transmit messages and raise awareness, provide impetus to active programs, and represent the unique needs of their communities. Partnerships may involve local interest groups such as biking clubs and parent groups, institutions such as churches, community centers, and business groups, and more, involving all aspects of a community in the pursuit of safer roads.

2.3 Emphasis Areas

"Emphasis areas" are used in traffic safety analysis to better understand the unique needs of a study area. Each emphasis area is defined based on patterns of crashes, patterns of driver behaviors associated with crashes, or patterns of environments associated with crashes. They help analysts and community stakeholders improve safety by targeting individual emphasis areas with practical strategies and countermeasures that are specifically designed to address the needs of those emphasis areas.
For example, if an emphasis area of Speed Management is identified, a community could target it with countermeasures such as traffic calming or increased enforcement at critical speeding locations.

The four emphasis areas described below were chosen specifically for the Village of Flossmoor, based on the unique safety performance of the Village's roadway network. This included a comprehensive crash analysis performed during preparation of the Existing Conditions Report, priorities expressed by the plan steering committee and project team, and extensive input from the community. Countermeasure and policy recommendations that specifically target these identified emphasis areas are offered later in the plan.

Emphasis areas were also identified based on comments and feedback from residents and steering committee members. In some instances, crash data may show a pattern of property damage only crashes. If this is the case, it is likely that many near-miss instances also occur and these near-miss instances do not appear in the crash data. This is where comments from Flossmoor's roadway users help guide which emphasis areas are prioritized. Through this approach, crash data and public input are blended together to arrive at the four emphasis areas described in the next section.

What is an emphasis area?

Emphasis Areas are general topics of concern that we believe can be addressed with practical strategies and projects. They are determined based on patterns in historic crash data as well as community input. Emphasis Areas help us to answer questions like "**Who** is experiencing safety concerns?" "**What** do residents feel as they travel the village?" and "**How** can we make this better?"

Who, what, how?

2.3.1 Flossmoor Emphasis Area: Pedestrians and Bicyclists

Goals: ***Make Flossmoor safer and more comfortable for pedestrians and bicyclists***
Eliminate bicycle and pedestrian injury crashes

65%
of resident comments mentioned pedestrians or bikes

Fatalities of vulnerable road users are on the rise across the United States. Many communities are exploring how they can become more pedestrian- and bike-friendly through safer infrastructure, increased connectivity, and the elevation of "active" transportation as an essential form of movement. Flossmoor residents want better and safer pedestrian and bicycle connections between the Village's neighborhoods as well as between destinations such as downtown and schools. By focusing on locations in Flossmoor with a history of vulnerable road-user crashes, as well as those that do not have a crash history but exhibit risk factors, this plan seeks to directly curb this safety issue.

Community comments:

- "Most families end up driving due to the lack of crosswalk"
- "Crossing the street to go Flossmoor park or downtown, there should be a stop sign or better signage for pedestrians to be able to cross safely and not have to worry about their safety"
- "My family was nearly struck by a careless motorist at this intersection while crossing the street. I have seen this happen consistently to other families…as this is a major crossing point between a school and residential area"

2.3.2 Flossmoor Emphasis Area: Speed Management

Goals: ***Decrease the frequency of speeding drivers***
Reduce the severity of speed-related crashes

#1
Most survey respondents indicated speeding as their top concern

Most severe crashes involve elevated vehicle speed. With an increase in driving speed, there is a similar increase in the severity of any potential crash, especially when vulnerable road users are involved. Speeding was identified as a key concern by residents, particularly on Flossmoor Road and larger volume streets that border the Village and its schools. Speed reductions can be achieved through infrastructure modifications such as narrowing lane widths or traffic-calming measures that use horizontal deflection (such as chicanes) or vertical deflection (such as speed humps) to help guide motorists toward safer speeds that correspond with the adjacent environment. Policy and enforcement treatments can also be considered, based on identified needs, community input, and research-based assessment of existing facilities. Due to new traffic patterns and driving behaviors resulting from the COVID-19 pandemic—including reduced traffic volumes and increased driving speeds in some areas—this issue is more pertinent than ever.

Community comments:

- "The speed of traffic in front of Leavitt Park is too fast. Each and every day we see a near miss/potentially fatal accident"
- "Too many speeders and folks not paying attention to the crosswalk"
- "Drivers speed through this intersection and barely any stop for pedestrians, even during school hours"

2.3.3 Flossmoor Emphasis Area: Young Road Users

Goals: ***Increase education and awareness for active transportation road users (prioritizing locations near schools)***
Reduce the frequency and severity of crashes involving young drivers

36%
of community comments related to young road users

Many families call Flossmoor home and want a transportation network that serves residents of *all* ages, especially young people who are more vulnerable to safety threats and more likely to be involved in vehicle crashes. This emphasis area focuses on all young road users, including young pedestrians and bicyclists as well as high school and college-age drivers. With multiple schools around Flossmoor, there are many children and students walking and biking to school daily, interacting with traffic and sometimes getting distracted. Various infrastructure improvements and policies can help to elevate them as road users and ensure their safety as they travel. Social media campaigns and other non-infrastructure strategies can also help. Meanwhile, aggressive and risky driving behaviors are more common among younger drivers, which poses a danger to themselves as well as their fellow road users. For these reasons, focusing on young road users is a vital part of improving traffic safety for all.

Community comments:

- "There is heavy traffic during school drop-off and pick-up hours which doesn't allow for them to cross safely"
- "This is a frequently used crossing point for children and families and motorists tend to speed through with no regard for pedestrians"
- "People speed through this stop sign daily, and it is a drop off and pick stop for school buses"

2.3.4 Flossmoor Emphasis Area: Intersections

Goal: ***Reduce the frequency and severity of intersection crashes for all road users.***

78%

of crashes occurring during the study period related to intersections

Flossmoor residents identified specific intersections they consider dangerous which need to be made safer for motorists, pedestrians, and bicyclists. At the intersection of two or more streets, there can be many conflicting movements that create the potential for collisions—such as left-turning traffic that conflicts with through traffic, or right-turning traffic that conflicts with a pedestrian crossing the street. Though intersections are commonly designed to maximize "operational" performance—or motorized traffic throughput—many are not yet optimized for safety performance and may be suitable for further targeted safety improvement. An analysis of crashes in Flossmoor revealed that such intersections should be an emphasis area for the Village to address. By targeting these locations with proven safety countermeasures that address crashes related to red light running, risky left turns, congestion, and speeding, a great number of crashes may be prevented in the future, making these intersections—and the Village as a whole—a safer place.

Community comments:

- "I have personally witnessed many near misses at this intersection"
- "Opportunity to make this a safer intersection for both pedestrians and drivers - especially during school hours and baseball season"
- "If you are turning left, you can sit there forever during high traffic times"

3. Developing the Plan

There were four key components in the development of the plan:

- Partnership between Flossmoor and Chicago Metropolitan Agency for Planning (CMAP)
- Understanding Existing Conditions
- Engaging the Community and Stakeholders
- Community and data-driven Countermeasures and Policies

3.1 Agency and Community Partnerships

The Village of Flossmoor was selected to receive a grant to develop a Local Road Safety Plan, with CMAP providing technical oversight and assistance throughout the project. This enabled the Village to create a steering committee that represented a cross-section of the community. Figure 3-1 shows a high-level summary of the various entities that make up the steering committee:

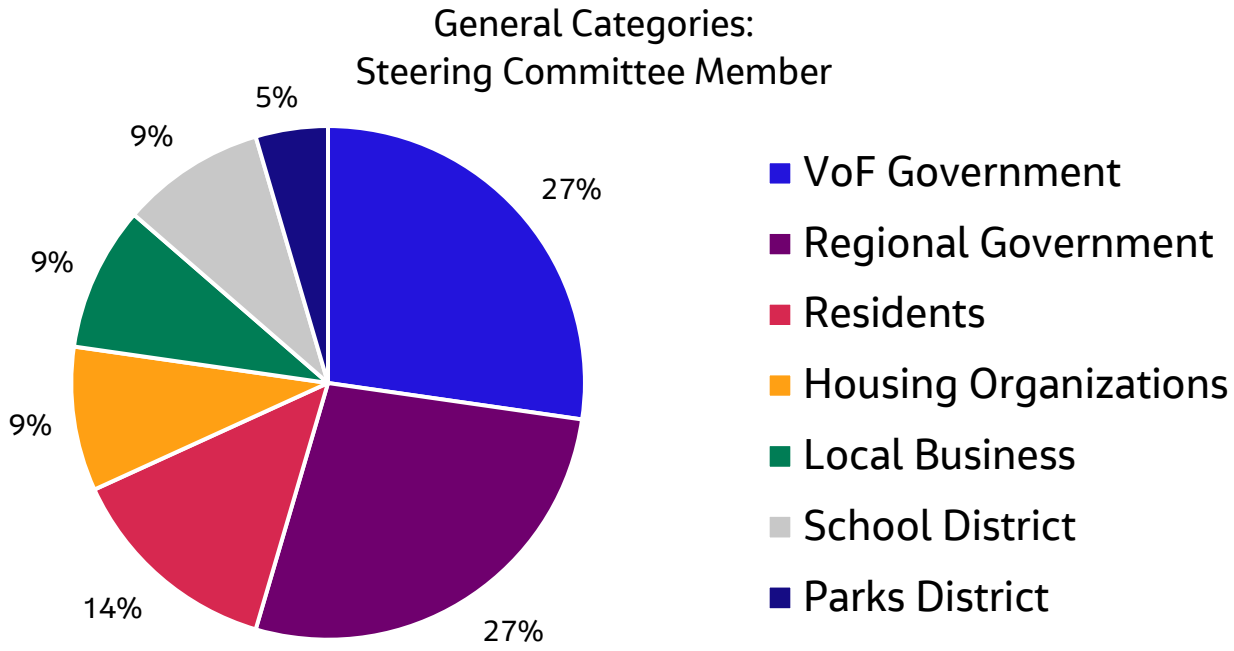


Figure 3-1. Steering Committee Member Summary

The steering committee was composed of a variety of individuals who volunteered their time to four separate meetings during the development of the plan. As shown in the roster in Table 3-1, approximately a quarter of the steering committee consisted of members representing regional government, who brought County and State perspectives to the project. Another quarter, which consisted of Village government staff and elected officials as well as representatives from the Homewood-Flossmoor (HF) school district, identified the problems they witness everyday along some of Flossmoor's busier public roads and erratic driver behavior observed. The other half of the steering committee consisted of housing organizations, parks districts, local businesses, and concerned residents who helped describe what it is like to drive around Flossmoor on a daily basis.

Table 3-1. Steering committee roster and affiliation

Member Name	Agency/Organization	General Category
Bridget Wachtel	Village of Flossmoor Administrative Department	VoF Government
Clint Wagner	Village of Flossmoor Police Department	VoF Government
Dan Milovanovic	Village of Flossmoor Public Works Department	VoF Government
John Brunke	Village of Flossmoor Public Works Department	VoF Government
Robert Kopec	Village of Flossmoor Fire Dept. & Emergency Medical Services	VoF Government
Tod Kamleiter	Village of Flossmoor Police Department	VoF Government
Gyata Kimmons	Residents	Residents
Margaret Hagerman Lawrence	Residents	Residents
Sasha Reyes	Residents	Residents
Craig Fantin	Village of Flossmoor School Districts	School District
Dana Smith	Village of Flossmoor School Districts	School District
Carolyn Armstrong	Flossmoor Station Restaurant and Brewery	Local Business
Steve Buchtel	GoodSpeed Cycles	Local Business
Dan Strick	New Star Services (Chicago Heights office)	Housing Organizations
Leonard Harris	Flossmoor Hills/Highlands HOA	Housing Organizations
Eric Scheutzow	Homewood Flossmoor Park District	Parks District
Adam Gabany	IDOT Central Office	Regional Government
John McFarlane	Metra Railroad	Public Transportation
Jonathan Lloyd	IDOT District 1	Regional Government
Leslie Phemister	SSMMA	Regional Government
Patrick McAneney	Homewood Public Works	Regional Government
Max Massi	Homewood Public Works	Regional Government
Tara Orbon	Cook County DOTH	Regional Government

3.2 Understanding Existing Conditions

An Existing Conditions Report (ECR) was developed to better understand the transportation environment of the Village of Flossmoor (see Appendix B for the report). The ECR provided an overview of historical traffic safety performance, highlighting crash patterns, hot spot locations, and opportunities for safety improvement. As shown in Figure 3-2, Flossmoor has experienced a relatively stable frequency of fatal and injury (F+I) crashes over this plan's 2015-2019 study period. Figure 3-3 provides a crash map of the downtown area that shows several crash points in the vicinity of a key project located near the Metra station on Sterling Avenue, which was previously approved by the Village Board (and for which this plan proposes a large-scale redesign that prioritizes pedestrian mobility). Figure 3-4 shows the Flossmoor downtown business district's crash locations by injury severity.

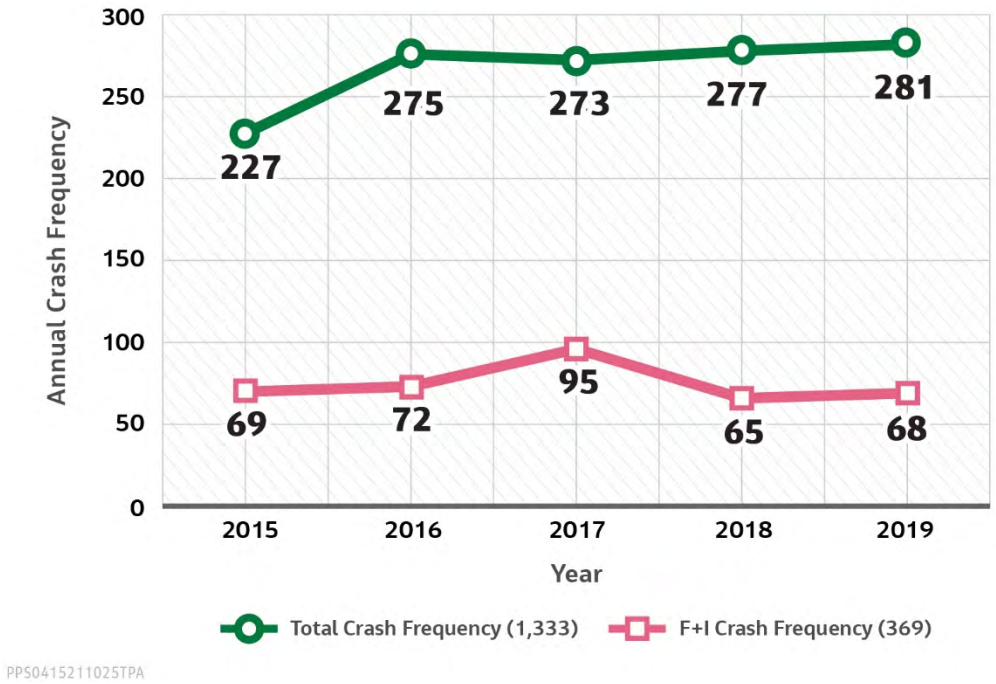


Figure 3-2. Crash history trendline, 2015-2019

With regards to evaluating historical crash patterns within the Village, it should be noted that all vehicle crashes are not included in the analysis process. Some crashes may be removed from consideration due to rare, non-traffic-related circumstances. One example of a crash that would not be included in the crash analysis would be if there was a major health issue inside the vehicle that leads to a crash. If a driver experienced a heart attack while driving which causes the driver to lose control and crash into a tree, the cause of their death would be due to the heart attack - not due to hitting a tree. Since these rare circumstances are unavoidable and unrelated to roadway design, they are omitted from the crash analysis.

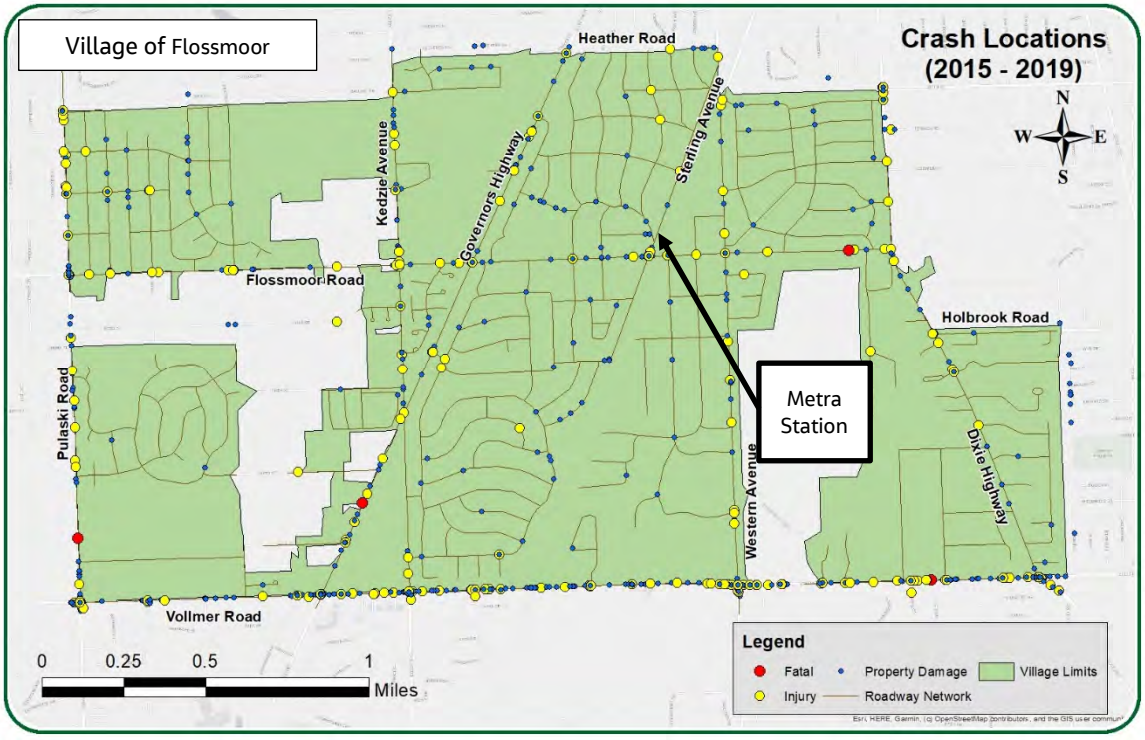


Figure 3-3. Village of Flossmoor crash map

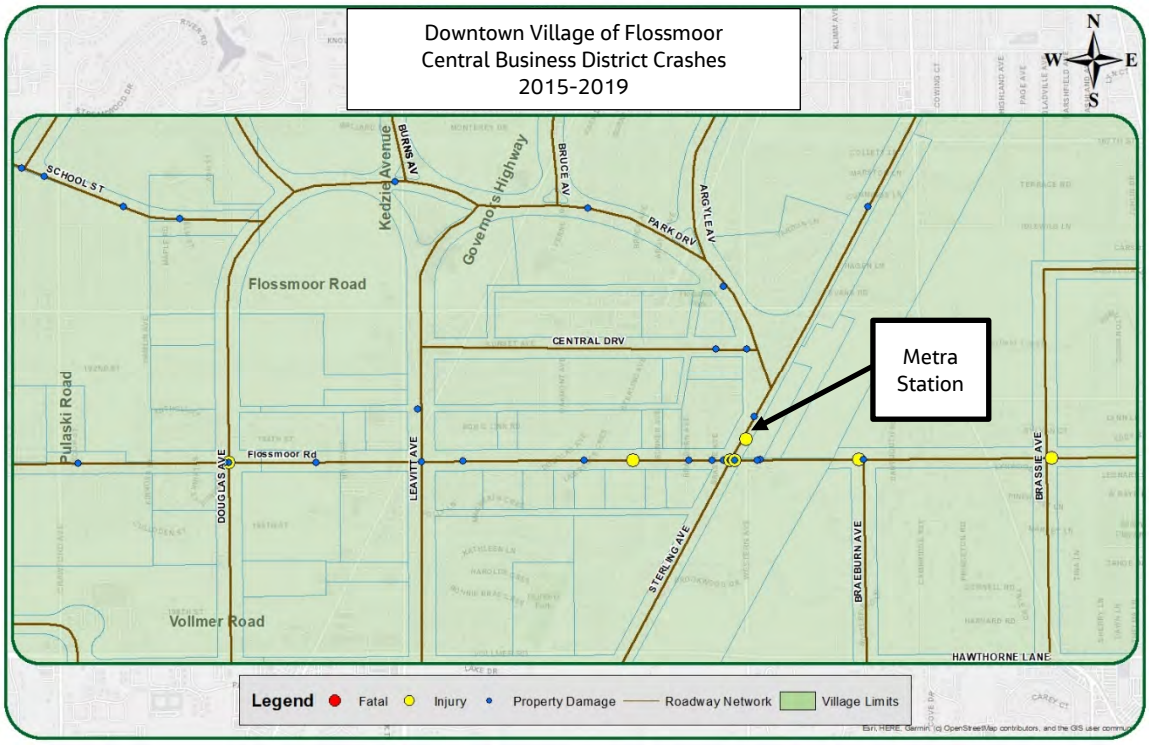


Figure 3-4. Central Business District crash map

Source: Illinois Department of Transportation's historic crash database, years 2015-2019, received 5/12/2021

Overall, the ECR assessed safety performance and traffic characteristics (such as speed limits, volumes, and traffic control devices) within a broader context of Flossmoor's roadway, sidewalk, and public transportation facilities, along with demographic and land use data necessary to ensure an equitable and context-sensitive understanding of findings. This crucial information on the state of the Village's current transportation system led to the identification of four "emphasis areas" (explained in section 2.3) and laid the groundwork for the plan, which has been tailored to the community's unique needs, objectives, and aspirations.

3.3 Engaging the Community and Stakeholders

Strong communication with the community is crucial to the success of any safety planning process. Four outreach activities were conducted during the development of the plan, allowing the team to collect nearly 500 unique comments and survey responses that reflect the insights and priorities of community members and stakeholders.

At the onset of the project, the team established a strong outreach strategy (see Appendix A). This included engaging the community directly as well as providing stakeholders the opportunity to share their concerns related to traffic safety via a community survey and project website.* The project website allowed users to place comments and suggestions about specific locations within the Village on an interactive map (as shown in Figure 3-5). Comments were also gathered from residents during two in-person engagement events: National Night Out and the Flossmoor Fest (see Figures 3-6 and 3-7). A full review of all community engagement activities can be found in Appendix C.

** LRSP project website can be accessed at: https://engage.cmap.illinois.gov/flossmoor-local-road-safety-plan*

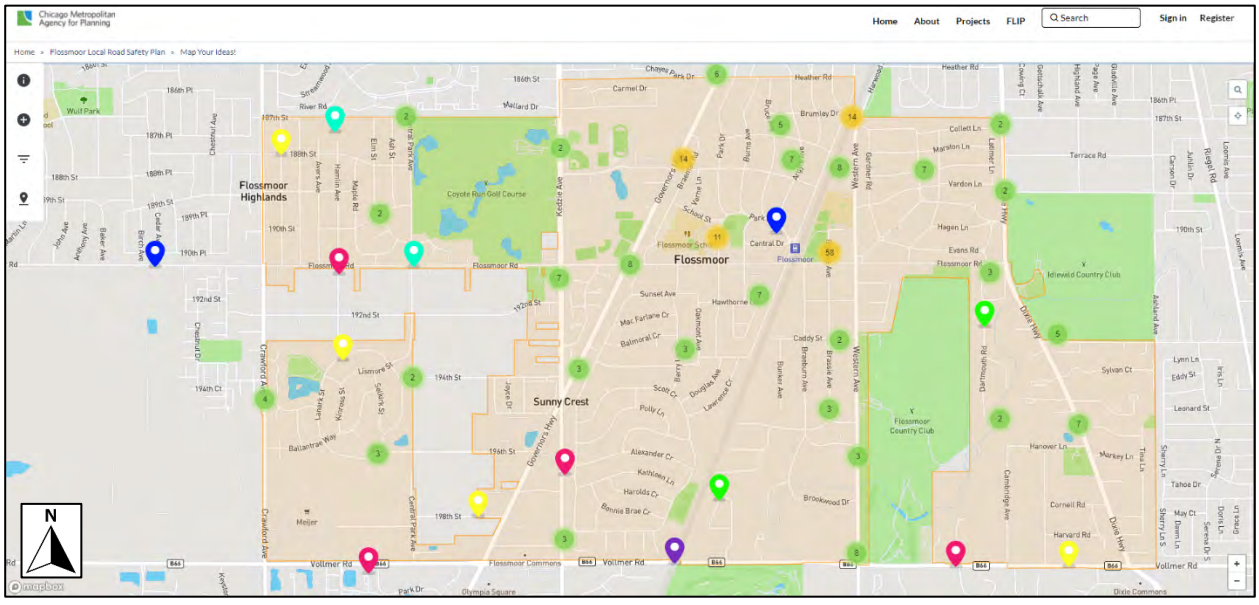


Figure 3-5. Interactive WebMap of the Village of Flossmoor on the LRSP project website

Figure 3-6. CMAP tabling at the National Night Out, 2021

Figure 3-7. CMAP tabling at Flossmoor Fest, 2021

3.4 Community-driven Countermeasures and Policies

The plan used a holistic, proactive, and community-oriented approach to improve safety in Flossmoor. It revealed particularly strong community support for improving pedestrian safety. The Countermeasures and Policy Recommendation Memorandum (CPRM, see Appendix D) outlined a menu of effective safety countermeasures and policies identified through analysis and community input, building upon the insights presented in the ECR and ongoing efforts including upcoming plans to redesign the Flossmoor central

business district. It provided an overview of high-priority infrastructure-related strategies—including pedestrian-related countermeasures (such as improved pedestrian crossing, bump-outs, and refuge islands) and speed-related countermeasures (such as traffic calming)—as well as actionable safety policies and community safety activities.

4. Policy and Activity Recommendations

This section provides a high-level summary of proposed policy and activity recommendations, which were discussed in the Countermeasures and Policy Recommendation Memorandum and at the third steering committee meeting. These strategies focus on speed management and improving driver behavior and compliance through non-infrastructure means, a crucial and complementary part of the Local Road and Safety Plan effort. While the targeted educational and policy strategies are discussed in greater detail below, it is important to consider potential implications or barriers to successfully implement the recommendations and additional evaluation must be considered before moving forward. These recommendations can also be viewed as high-level and an initial step to assess community concerns and determine what the appropriate level of outreach and education is needed based on the information gathered throughout the LRSP process. Enforcement Campaign Efforts

4.1.1 Targeted Traffic Enforcement Near Schools

Discouraging dangerous driver behaviors near schools with targeted enforcement

Safety strategies that rely on local and state traffic laws to attempt to reduce the frequency of poor driver behaviors are typically deployed at isolated locations, such as red-light running cameras at signalized intersections. Most steering committee members expressed concern about the frequency of vehicles driving at excess speeds, and the highest priority locations where active enforcement could be most beneficial were near schools.

The designated school zone along Western Avenue was cited as an excellent example of implementing school zone messaging. Communication with school faculty, students, and parents will help ensure the safe arrival and departure of all. Partnerships with enforcement agencies can also provide great value to safety planning by tapping the unique insights of officers regarding their community's roads and safety needs, as well as historic patterns of unsafe driver behaviors.

4.1.2 School Zone Signing Review

Establishing consistent and clear school zone signing and messaging The Flossmoor Police Department performed a study of the uncontrolled intersection of Scott Crescent and Lawrence Crescent near Heather Hill School in 2017. The study found that inconsistent signage was being used to warn motorists about the presence of the school, including some with inconsistent designs, and the author recommended replacing these signs with consistent, modern high-visibility alternatives. This plan recommends that similar reviews of intersections and roadways near schools be conducted to replace old or deprecated school zone signage with new, high-visibility signs to improve safety around these critical public locations.

4.2 Student and Young Driver Safety Outreach

4.2.1 Safe Routes to School Program

Encouraging safe use of active transportation for students

Safe Routes to School (SRTS) is an approach to school commuting that promotes "active" transportation modes for young students. By promoting infrastructure improvements, enforcement tools, educational programming, and other incentives, SRTS initiatives work to create safe and accessible opportunities for children to bike (as shown in Figure 4-1), walk, or take public transportation to school. SRTS promotes

physical activity, community walkability, and vulnerable road user safety within communities and especially around schools. By ensuring safe and reliable connectivity such as sidewalks and bike paths, as well as safe roadway crossings and enforcement of safe driving behaviors near student commute routes, these programs can help improve safety for students and reduce unnecessary driving trips in sensitive areas around schools.

SRTS programs can be implemented locally within Flossmoor through partnerships between school districts or individual schools and local agencies including the Village of Flossmoor and the Chicago Metropolitan Agency for Planning. Extensive resources are available to support such programming through the U.S. Department of Transportation, including an SRTS guide, safe routes partnership, and more.

Figure 4-1. Students biking to school

4.2.2 Social Media Engagement

Engaging young road users and sharing messaging through social media

To promote safe driving behaviors and traffic safety culture among young road users, Flossmoor can leverage social media platforms. Social engagement with young road users creates opportunities to connect with them in everyday life, sharing messages of the importance of safety and their role in keeping our roads safe. Engaging with students can also promote safe walking and biking behaviors, as well as set the stage for them to adopt safe driving behaviors when they begin driving. Social media can also help connect with young people's parents and families indirectly, spreading important messages promoting road safety through social channels.

This can involve periodic posting on Twitter and Facebook accounts owned by the Village, school districts, or enforcement agencies, along with development of shareable media content such as graphics, educational videos, personal stories, and more. While it is important to understand the nuances of social media interaction to maximize the effectiveness of this approach and the breadth of delivery, any effort can begin to provide great results in the short term. Example engagement strategies to consider include:

- **Weekly thematic messaging** – For example, "Walk to Work/School Wednesdays," where followers are encouraged to share photos of themselves walking to work or school to promote active transportation and pedestrian safety.
- **Hashtag promotion** – Encourage community members to use a safety-themed hashtag when posting related content online, such as "#SlowDownFlossmoor" to encourage safe driving speeds,

"#Brake4Peds" to encourage yielding to pedestrians at crosswalks, or "#WeFullStop" to encourage compliance with stop controls.

- **Photo frames** – Create photo frames for social media users' profile pictures which feature a simple graphic and tagline which promote safe driving practices or programs.

4.2.3 Expanded Education of Pedestrian and Bicycle Safety

Additional opportunities for promoting safe road user behaviors

The Village of Flossmoor may work with local schools to expand education for students on pedestrian and bicycle safety, incorporating it into more regular activities. Specific options for consideration include:

- Incorporating pedestrian and bicycle safety into the driver's education curriculum, helping new drivers to understand their role in keeping vulnerable road users safe.
- Programming Walk, Bike, and Roll to School days, encouraging students to explore active transportation alternatives to their daily commutes and teaching them about safety and crash avoidance through the process.
- Exploring the science behind traffic safety in relevant technical classes, analyzing, visualizing, and learning about the data that underlies planning efforts such as this one. This may be relevant to classes involving computer science, math, statistics, government, and more.

4.3 Policy Planning Efforts

4.3.1 Bicycle Plan and Policy

Creating a long-term plan for improved bicycle connectivity and safety in the Village

Beyond installation of individual bicycle facilities around Flossmoor, the community may want to consider developing and implementing a village-wide Bicycle Safety Action Plan. Such a plan would involve an in-depth review of existing bicycle routes and bike parking racks, as well as a study of bicycle traffic demand across the community, to determine where there is the greatest interest or need for new bicycle facilities. Audits may be conducted for common bicycle routes to identify needs and what improvements best suit existing roadways, and to create targeted plans to address them. Additionally, a review of the greater subarea surrounding Flossmoor may be conducted, working with adjacent municipalities (such as the Village of Homewood) to ensure consistency in planning and infrastructure design and tie into existing networks and bicycle plans for greatest effect. Planning should also involve extensive input from community members as well as school district staff, bicycle advocates, and enforcement officers, all of whom would have important insights. Additionally, a legal review of an agency's municipal code should be performed to identify locations that may restrict non-motorized users.

With a comprehensive understanding of the state of bicycle connectivity and bicyclist safety across Flossmoor, the Village can achieve success more quickly and efficiently. Collaborating with community members will also increase resident awareness of the effort and produce more effective outcomes for all road users, ensuring that roadways are designed to serve all. Creating a safer and more accessible environment for bicyclists will also increase bicycle traffic, reduce vehicle traffic, support active transportation modes, bolster cultural and community gathering spaces, and more. It should be noted that Flossmoor may want to combine bicycle and pedestrian safety goals to produce a unified Bicycle and Pedestrian Safety Action Plan.

Some examples of resources and comparable plans include:

- How to Develop a Pedestrian and Bicycle Safety Action Plan – FHWA
- Bicycle Safety Information Resource – NHTSA
- Bicycle and Pedestrian Safety Action Plan – Broward MPO, Florida
- Michigan Pedestrian and Bicycle Safety Action Plan – Michigan

4.3.2 Pedestrian Safety and Accessibility Action Plan

Creating a long-term plan for improved pedestrian accessibility and safety in the Village

Fortunately for the Village of Flossmoor, between 2015 and 2019 there were no pedestrian fatalities, but there were 6 crashes involving pedestrians, which represents 1.6 percent of all transportation injury related crashes in the community. While this is a relatively small portion of the injury crashes, pedestrian-involved crashes tend to be severe. During the development of this plan, approximately 34.5% of comments from community members were focused on pedestrian safety and recommendations to improve safety for walking.

There are a several policies that may be considered to improve pedestrian safety in Flossmoor. One of the most effective long-term, low-cost strategies is the development of a Pedestrian Safety and Accessibility Action Plan (PSA). A PSA involves more in-depth analysis and understanding of existing pedestrian accommodations such as existing sidewalks, Americans with Disabilities Act (ADA) accommodations, pedestrian crossings, and pedestrian traffic control devices and pavement markings. It also involves gaining a better understanding of pedestrian and vehicle conflicts (and potential conflicts), current pedestrian movements, exposure, and origin-destination through surveys and stakeholder input. Such a plan would identify gaps in pedestrian infrastructure, identify specific treatments, locations for improvement, funding sources and applications. It could also identify areas for additional enforcement or education programs, as well as the focus for PSAs. Overall, such a plan could provide Flossmoor with a comprehensive vision for the future of its pedestrian accommodations—along with a roadmap of the specific steps needed to achieve that vision—and lay the foundation to support local businesses, elevate active transportation modes and physical health, bolster culture and community gathering spaces and improve livability while improving safety.

Some Pedestrian Safety Action Plans resources include:

- How to Develop a Pedestrian Safety Action Plan – FHWA
- How to Develop a Pedestrian Safety Action Plan – PedBikeInfo.org
- Culver City Bicycle and Pedestrian Action Plan – Culver City, California
- Regional Pedestrian Safety Action Plan Outline – Metropolitan Council, Minnesota
- USDOT Pedestrian Safety Action Plan – USDOT

4.3.3 Complete Streets Plan and Policy

Creating a long-term plan for designing streets to serve all users in the region

This Local Road Safety Plan provides actionable countermeasures and strategies to support the goals of "Complete Streets" plans, which seek to promote non-motorized transportation modes and achieve zero traffic fatalities. Complete Streets are designs to reorient roadway spaces to better serve the surrounding community instead of operating purely as a facility to serve motor vehicle through traffic. An example of a Complete Streets transformation is shown in Figure 4-2, which provides many benefits to all road users. Greater accessibility to vulnerable road users, including pedestrians and bicyclists, make facilities safer and

more attractive for active transportation modes, improving quality of life and generating more traffic for local businesses. Additionally, lower speeds increase safety for motorists as well, reducing crashes of all kinds.

A Complete Streets Policy was adopted by the Village Board on March 16, 2020. The adopted policy should be considered for projects involving roadway improvements and the movement of people where feasible. While the Village views all transportation improvements as an opportunity to consider Complete Streets, the primary goal is to promote a transportation principle that residents should be able to drive, walk or bike safely and conveniently throughout the Village for daily needs and activities. This policy should be considered when evaluating the recommendations described in this LRSP. However, due to the complex nature of each improvement and the unique locations, the policy is not intended to be a barrier for improving safety performance.

There was strong community support for a broader plan of this sort. Development of a Complete Streets plan could be scaled to meet the unique needs of Flossmoor. A more specific Complete Streets plan would require study of existing roadway facilities to understand traffic patterns and geometric design to determine appropriateness of potential conversions. Additionally, plan development may be done in concert with pedestrian or bicycle safety action plans to align the visions and produce more cohesive outcomes. The Village of Flossmoor could also collaborate with local and regional organizations to leverage existing plans. For example, the South Suburban Mayors and Managers Association (SSMMA) helped coordinate the development of a regional Complete Streets Plan in 2017.

Some examples of resources and similar plans include:

- CMAP's Complete Streets Toolkit – CMAP
- Complete Streets Policy for the Village of Skokie – Skokie, Illinois
- City of Aurora Complete Streets Policy – Aurora, Illinois
- Montgomery County Complete Streets Design Guide – Montgomery County, Maryland

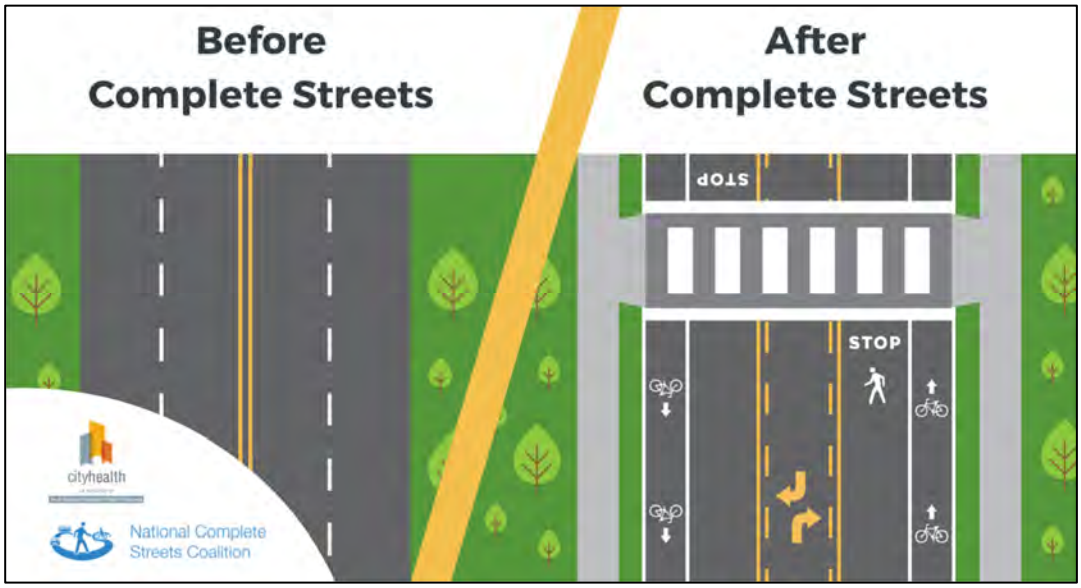


Figure 4-2. Sample complete streets conversion schematic

5. Priority Locations

The process for identifying priority locations included evaluation of crash history and considering community input. This complimentary approach highlights not only locations that have a history of crashes but also those that may be expected to produce future crashes or that generally underperform based on community insights. Prioritizing and executing a robust communications and outreach plan from the beginning of the LRSP effort has led to a comprehensive list of locations and countermeasures that overlap with multiple emphasis areas to help maximize the potential benefit for Flossmoor residents.

Section 5.1 focuses on Flossmoor's downtown area across from the Metra Station. During the public engagement activities, many comments were expressed by residents for the desire to improve the functionality of this area. Residents' concerns are confirmed in Figure 5-1. It identifies multiple priority locations near the downtown area. Cumulatively, Figure 5-1, shows all nine priority roadway segments (Section 5.2) and all nine priority intersections (Section 5.3) that are described in further detail. There are multiple top priority locations that share jurisdictional boundaries which will require coordination efforts between the various agencies during the evaluation or implementation stages of projects. Additionally, Appendix E includes a table that shows a portion of the segment that did not fall into the priority list, while Appendix F shows that same for intersections. The truncated tables shown in Appendix E and F are limited to locations that have a sum of at least six crashes or public comments.

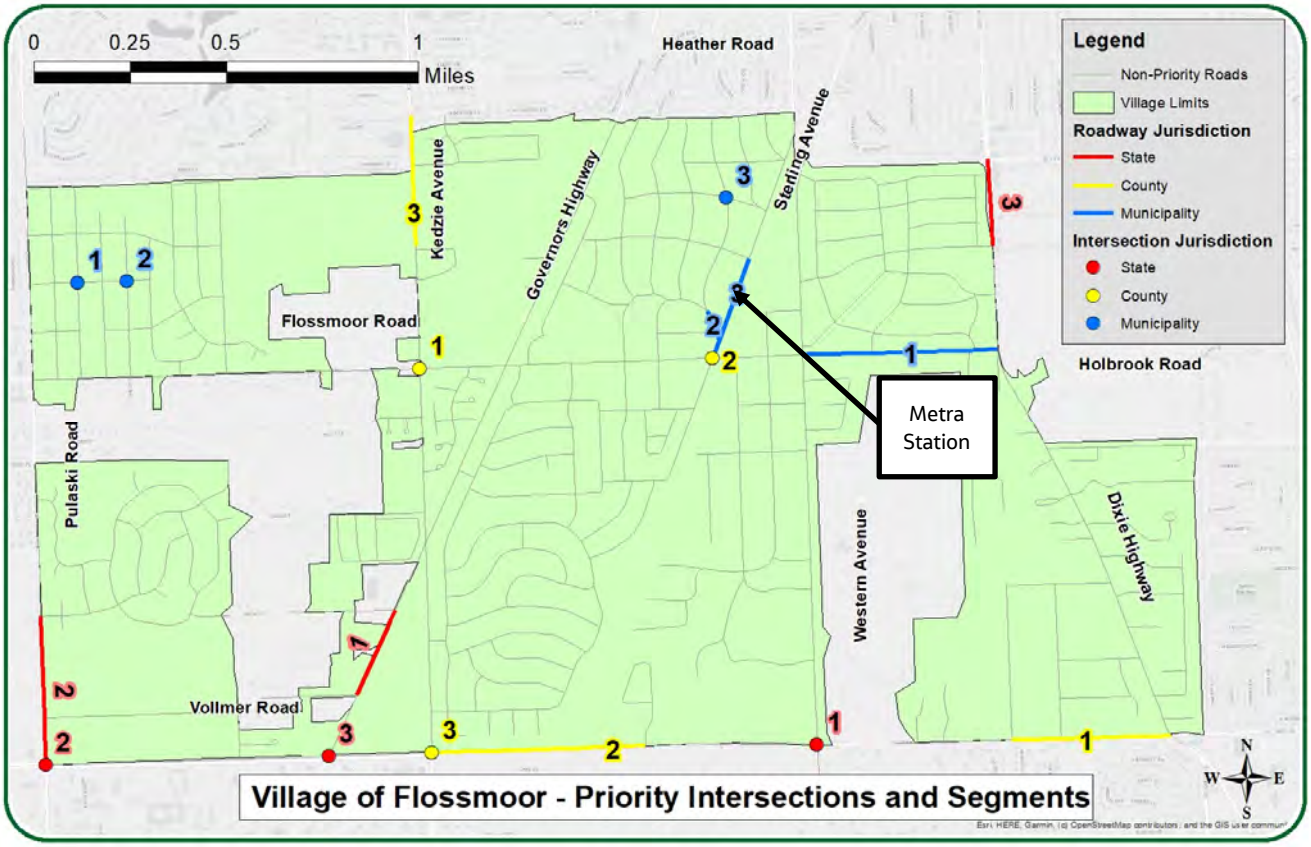


Figure 5-1. Priority Locations Map for Segments and Intersections

To arrive at nine priority locations for intersections and nine priority locations for segments, each of the three jurisdictions had three priority locations identified. The three jurisdictions analyzed were state, county, and municipality. While the Village of Flossmoor has the authority to initiate projects that take place on their roadways, it should be noted that the Village can only promote collaboration and encourage support for the recommendations along county- or state-owned routes.

With the intent to normalize locations - or create an even playing field to rank all locations - segments and intersections were analyzed based on the number of crashes that occurred at the location and the number of public comments that were received during the public engagement events. The segment length and the intersection's count of total entering vehicles were also considered. Crashes were counted on severity and translated to a weighted crash score. The weighted crash score, more specifically, is based on the average comprehensive cost by injury severity, as determined by the National Safety Council, based on 2020 dollars (source). Table 5-1 shows the translation between cost and crash weight in the second and third columns. This relationship implies that one "K", or fatal crash, is equivalent to 217.25 "O" crashes, or property damage only crashes. Additionally, each comment received for a location contributed as being equivalent to a score of 1. The last step to normalize locations was to divide the PM score by their segment length or total entering vehicles. This accounts for differences in exposure or traffic volumes or different lengths of segments.

Table 5-1. Performance Metric Calculations Example

Crash Severity	Average Comprehensive Cost by Severity	Crash Weight	Crash Count	PM Score
K	$ 11,449,000	217.2	1	217.2
A	$ 1,252,000	23.7	0	0.0
B	$ 345,000	6.5	2	13.1
C	$ 160,000	3.0	0	0.0
O	$ 52,700	1.0	4	4.0
			Comments -	11.0
			PM Sum	245.3

In Table 5-1, an example calculation is shown for an arbitrary location. The location has one fatal crash (accounting for a crash weight of 217.2), two B-injury crashes (accounting for a crash weight of 2 * 6.5 = 13.1) and received four comments (4 * 1 = 4) during the public engagement events. Adding these points up, a PM score of 245.3 is assigned. If the length of the segment is 1.23 miles, the normalized PM score would be 199.43 (245.3 / 1.23 = 199.43). Once all locations have been assigned a normalized PM score, they were ranked from highest to lowest normalized score. Due to some municipality intersections having no value for the total entering vehicles, these locations were prioritized based on their total PM score, not a normalized PM score.

The top three locations were taken from each of the following three jurisdictions: state, county, and municipality. In all, this resulting in nine priority segments and nine priority intersections - all of which are shown in Figure 5-1 and in Table 5-2. The colored numeric labels in Figure 5-1 represent the priority rank for the corresponding jurisdiction. For example, a number with red background would represent the ranking for a state jurisdiction location.

The following subsections provide a description of the ongoing efforts near the downtown area (Section 5.1), an overview of mobility, functionality, and speed management strategies located on priority

segments (Section 5.2), and a review of the priority intersections (Section 5.3) that focus on configuration improvements, active transportation projects, and treatments specific to traffic signals. Priority recommendations provided in the following subsections focus on locations that are expected to produce safety improvement for the community and which are strong candidates for funding based on the findings of the LRSP process. It is suggested that these nine intersections and nine segments be considered first for funding opportunities, with non-priority locations being considered once these have been exhausted.

Priorities were identified based on several factors, including:

- Data-driven site selection based on historic crash data
- Priority locations identified by residents through outreach platforms and events
- Opportunities which address the identified emphasis areas of pedestrians and bicyclists, speed management, young road users, and intersections
- Projects which will provide greater east/west connectivity
- Projects which will maximize safety benefits given limited funding opportunities
- Equitable safety performance and distribution of funds throughout the community

What are our priorities?

Priority locations were selected based on a variety of factors. Where does data show us we can have the greatest impact? What have community members prioritized? How can we maximize our impact with limited funds? This plan represents a collaborative effort to improve safety. If there are recommendations in here that you are excited about or if you think of more projects to consider in the future, let us know by contacting the Village of Flossmoor Public Works Department!!

5.1 Flossmoor Central Business District

The Village of Flossmoor's central business district, located just north of the intersection of Flossmoor Road and Sterling Avenue, is a popular and central location within the village. It features a diverse selection of local businesses, outdoor spaces, and public amenities, including the Flossmoor Public Library and the Flossmoor Metra station, which serves as the 6th highest ridership station of the 32 outlying stations on the Metra Electric - Main Line (as of Fall 2018). As of Spring 2019, roughly 32% of Metra riders walked or biked to the Flossmoor station, while the rest arrived by vehicle.

At the center of the area is a traffic circle which connects Sterling Avenue, Park Drive, and Central Drive, serving both vehicle and non-motorized traffic entering and exiting the Metra station, the library, and the surrounding businesses. During commuting and high business hours, this area often gets considerably congested, exhibiting unsafe driving patterns which residents have shown great concern with.

Due to complex traffic patterns at this traffic circle and historic traffic safety concerns, the Village of Flossmoor hired Baxter and Woodman, a consultant engineering company, to provide multiple design geometry alternatives for the downtown area. The purpose of this study was to improve facilities for pedestrians and bicyclists, along with improving the traffic flow. This required consideration of countermeasures in the downtown area that are aesthetically pleasing.

What do residents say about this location?

- "The downtown traffic circle pedestrian safety resolution should focus on motorist avoidance, improved Metra parking, and law enforcement, not measures to accommodate through traffic."
- "It requires traveling by car to participate in the great downtown Flossmoor activities."
- "Motorists speed through downtown and ignore crosswalks."

5.1.1 Location Description

As shown in Figure 5-2, the traffic circle in the downtown area of Flossmoor presents motorists with non-standard driving paths due to the four legs of the intersection all converging at an island that contains a post office drop-box, mature vegetation, and a path leading to sitting areas. Many residents expressed discontent with the area during the National Night Out and Flossmoor Fest. The discontent led to the Village's desire to explore alternatives for the area.

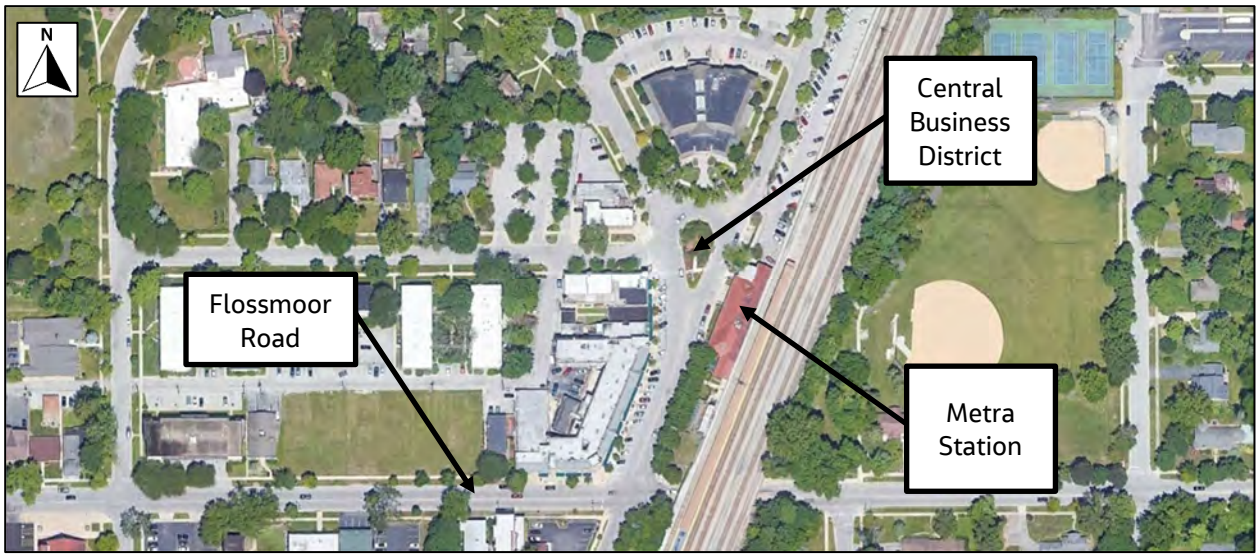


Figure 5-2. Central Business District

5.1.2 Proposed Improvements

Based on traffic and safety studies, as well as input from the community, an upgrade to Sterling Avenue just north of the Metra station was proposed, as shown in Figure 5-3, which is identified as the #3 ranking municipal segment. Many of the proposed improvements in the downtown area focus on providing pedestrians with much improved facilities. Additional evaluation for potentially relocating the mailbox in the center island should also be considered in order to improve safe and easy access to mail services.

Figure 5-3. North pedestrian island, looking northeast

Pedestrian crossing distances are significantly reduced by implementing curb extensions which allow pedestrians to cross a shorter distance. Figure 5-4 shows a pedestrian refuge island which breaks the crossing up into two movements. This is the same location as shared in Figure 5-3, however this shows a view looking south toward the downtown area with the Metra station on the left.

Figure 5-4. North pedestrian island, looking south on Sterling Avenue

Traffic calming measures are applied which will help to reduce vehicle speeds and improve compliance with pedestrian crossings. Additionally, high-visibility pavement markings, as shown at Central Drive and Park Drive in Figure 5-5, along with parking arrangements, and lane channelization will help to guide motorists along a safe route, limiting exposure for pedestrians and bicyclists and further calming traffic.

Figure 5-5. Roundabout, looking east towards the Metra station

Figure 5-6 illustrates the proposed cross-section configuration along Flossmoor Road at Douglas Avenue. This area has a junior high school immediately north, Village Hall and the Police Department on the south side of the road, along with a church and many other commercial businesses in the immediate area. These serve as prominent pedestrian and bicyclist generators.

These improvements delineate between bike lanes and vehicle travel lanes with a raised curb. At minor leg stop control intersections, like at Douglas Avenue, skip-dash pavement markings are implemented to further emphasize to drivers to be aware and ready for bicyclist in the bike lanes. If desired, 'shark's teeth' pavement marking, which are essentially isosceles triangles positioned side by side, can be an even higher visibility warning marking for motorists as they proceed past the stop bar on Douglas Avenue. 'Shark's teeth' are currently used on the south end of the traffic circle across from the Metra station.

Signage on both sides of the road is included in Figure 5-6 to help provide reinforcement to drivers along Flossmoor Road and Douglas Avenue to expect pedestrians near the crosswalks. Combined with a sign in the middle of the road that reads "STATE LAW - STOP FOR PEDESTRIANS WITHIN CROSSWALK", the 'gateway effect' is implemented, resulting in much higher yielding behavior for motorists.

Figure 5-6. Flossmoor Road at Douglas Avenue, looking west

5.1.3 Next Steps for Implementation

The Village of Flossmoor and its consultant are moving forward with the completion of Phase 1 Engineering and are planning on moving ahead with the Phase 2 Engineering in fiscal year 2023.

5.2 Priority Segments

Approximately 58 miles of public roadways were reviewed during analysis, which includes state, county, and municipal jurisdictions. Figure 5-7 shows the number of segment projects or policies that were suggested for each of the three jurisdictions. Based on countermeasures and locations identified in the CPRM and related steering committee activities, approximately 5.2 percent of the public roadway network has been designated as priority segments for safety improvements. Table 5-2 is ordered based on the jurisdiction, then by the normalized PM score for each of the top nine segment locations. The segments are also color-coded by jurisdiction, matching the colors shown in Figure 5-1. State jurisdiction is shown in red, county jurisdiction is shown in yellow, and municipal jurisdiction roads are shown in blue.

It is recommended that the village prioritize the projects described in the following subsections based on breadth of impact and feasibility, focusing first on projects along major routes, followed by lower volume roads. This approach will positively impact the most people through the initial stages of implementation.

When observing the speed limit along the prioritized segments, nearly 70% of the project miles were assigned to segments which have a posted speed limit of 40 miles per hour or less. This aligns to many comments by community members that frequently expressed concern about speeding and aggressive driving on roads that typically serve residential and commercial areas rather than higher-speed corridors.

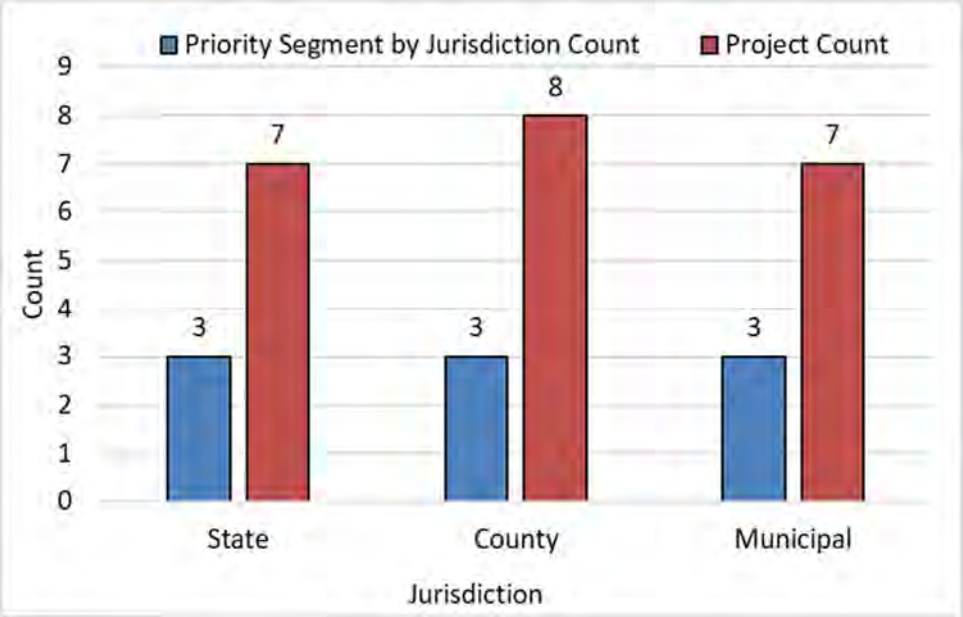


Figure 5-7. Project Count by Segment Jurisdiction

Table 5-2. Details of Priority Segment

Priority Rank	Street Name	Limit 1	Limit 2	Length (miles)	Jurisdiction	KABCO Crash Frequency and Weights (2015-2019)					PM Score - Crashes	PM Score - Comments	PM Score Sum	Normalized PM Score
						K - 217.248	A - 23.757	B - 6.546	C - 3.036	PDO - 1.0				
1	Governors Highway	West 198th Street	196th Street	0.24	State	1	0	2	1	5	238.4	0	238.4	978.5
2	Crawford Avenue	Vollmer Road	Ballantrae Way	0.39	State	1	0	0	0	6	223.2	0	223.2	579.2
3	Dixie Highway	West 187th Street	Vardon Lane	0.23	State	0	0	4	2	12	44.3	1	45.3	199.3
1	Vollmer Road	Dixie Highway	Cambridge Avenue	0.42	County	1	1	9	2	20	326.0	1	327.0	787.4
2	Vollmer Road	Kedzie Avenue	Oak Lane Road	0.56	County	0	2	8	5	66	181.1	2	183.1	329.3
3	Kedzie Avenue	Viking Drive	186th Street	0.34	County	0	2	0	0	6	53.5	2	55.5	163.4
1	Flossmoor Road	Dixie Highway	Western Avenue	0.51	Municipality	1	0	2	0	0	230.3	7	237.3	467.1
2	Park Drive	Sterling Avenue	Argyle Avenue	0.08	Municipality	0	0	0	0	1	1.0	6	7.0	82.7
3	Sterling Avenue	Flossmoor Road	Wallace Drive	0.28	Municipality	0	0	1	0	2	8.5	14	22.5	81.3
			Total Miles -	3.03		4	5	26	10	118				

5.2.1 State Jurisdiction Priority Segments

5.2.1.1 Governor's Highway from West 198th Street to 196th Street

Segment Priority Rank - State Jurisdiction: #1

Emphasis Areas: Speed Management

What do residents say about this area?

- "Excessive traffic speeding"
- "Need signing upgrades"

The southern limit of this quarter-mile segment is West 198th Street, shown in Figure 5-8, while the northern limit of the segment is 196th Street. Governor's Highway is represented by the yellow line and has a 45 MPH speed limit. Along this stretch of Governor's Highway, there are about eight access points to commercial properties or minor leg routes, which can be a contributing factor to some of the turning crashes identified in Table 5-3.

The vast majority of this segment has a paved surface no more than one foot wide *beyond* the shoulder edge line marking. With very little to non-existent shoulders, combined with many fixed objects on the roadside (trees, culverts, and utility poles that run the entire length of the west side of the roadway) any vehicle that leaves the travel lane is likely to have an unforgiving experience. Considering public comments that emphasized vehicle speeds higher than the posted speed limit, a roadway departure would appear to be nearly unrecoverable.

Table 5-3. Governor's Highway (W. 198th to 196th) Crash History (2015-2019)

Crash Type	Crash Severity					*Total*	*KAB %*	*KABCO %*
	Fatal (K)	A-Injury	B-Injury	C-Injury	PDO			
Animal	0	0	0	0	1	***1***	***0%***	***11.1%***
Fixed Object	1	0	1	1	1	***4***	***66.7%***	***44.4%***
Other Non-Collision	0	0	0	0	2	***2***	***0%***	***22.2%***
Turning	0	0	1	0	1	***2***	***33.3%***	***22.2%***
Total	**1**	**0**	**2**	**1**	**5**	***9***	***100%***	***100%***

- **Speed Feedback Signs** – During discussions with Village of Flossmoor staff and officers from the Police Department, it was mentioned the Village owns two speed feedback signs. These two units are relocatable and one of the data outputs is the speeds observed. It is suggested that the Village implements similar signage on the Village's roadway network where high speeds are noticed.
  - An online public poll can be used to gather opinions of residents to see where they would prefer to see these feedback signs. After a deployment of 2-4 months, the unit can be relocated.
- **Shoulder and Roadside Improvements** – Many of the infrastructure features, or lack thereof, along the roadside can be improved. Providing a paved shoulder, combined with rumble strips or rumble stripEs (edge line painted on top of rumble strips) can help to reduce the frequency of the fixed object crashes shown in Table 5-3.
  - Determine how wide of a shoulder can be constructed.
  - Perform a public engagement activity to gauge the public acceptance of rumble strips. With very few residential homes along this corridor, it appears unlikely that the village would get noise complaints.
  - If paved shoulders and/or rumbles cannot be constructed, consider refreshing the edge lines with retroreflective pavement markings. If possible, increase from 4-inch width to 6-inch width.

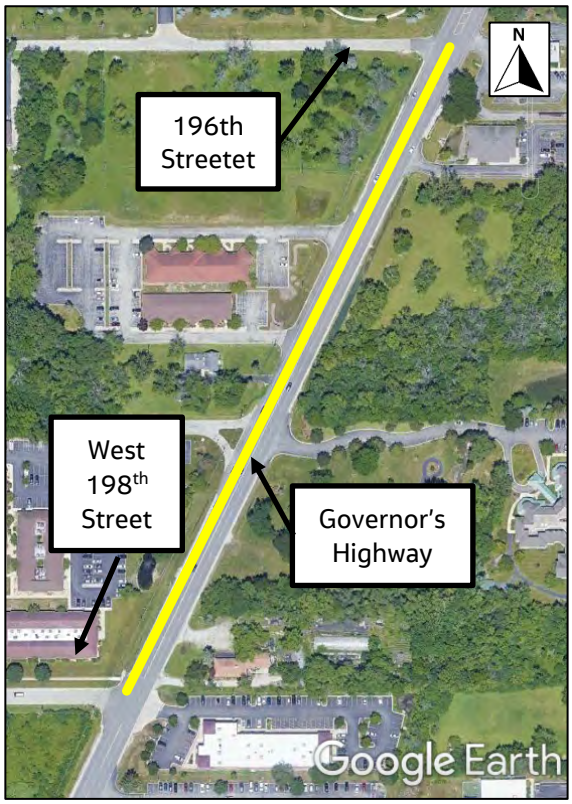


Figure 5-8. Governor's Highway

5.2.1.2 Crawford Avenue from Vollmer Road to Ballantrae Way

Segment Priority Rank - State Jurisdiction: #2

Emphasis Areas: Pedestrian & Bicyclists

The cross-section of Crawford Avenue, shown in Figure 5-9, has a 14-foot painted median with one 12-foot lane in each direction, and about two-thirds of the corridor has a 5-foot paved shoulder. This corridor has a 45 MPH speed limit.

Figure 5-10 shows the corridor being situated on the southwest border of the Village. Roughly 85 percent of the west side of this corridor is green space - Vollmer Road Woods. The southern half of the east side of the corridor is mainly the Meijer grocery store property and about three other small commercial locations.

Figure 5-9. Crawford Avenue cross section

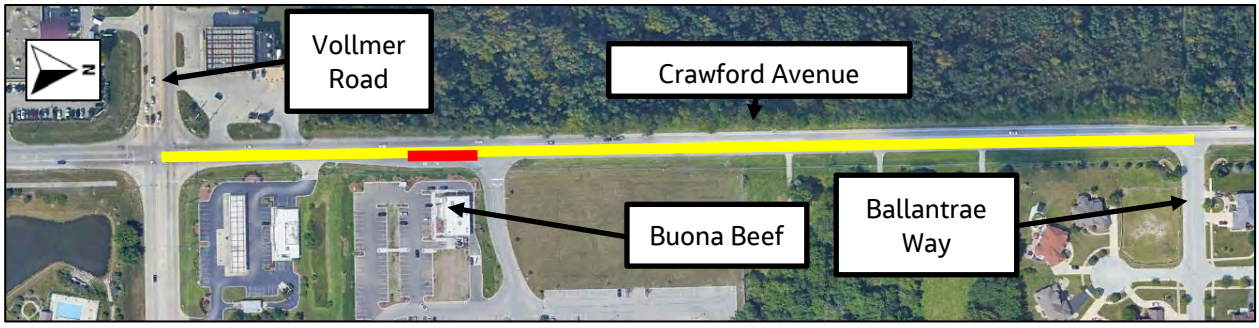


Figure 5-10. Crawford Avenue from Vollmer Road to Ballantrae Way

- **Bicycle Lanes** – Figure 5-10 shows a small red line in front of Buona Beef that represents about 85 feet of bike lane pavement marking for the northbound direction. However, continuing travel in the north direction beyond Buona Beef, the bike lanes come to an abrupt stop. The existing 5-foot paved shoulder can be converted into a bike lane.
  - Even though Table 5-4 does not highlight any frequency of vehicle/bicyclist crashes, this is still an opportunity to be proactive and take a step towards making more complete bike facilities in Flossmoor.

Table 5-4. Crawford Avenue (Vollmer to Ballantrea) Crash History (2015-2019)

Crash Type	Crash Severity					*Total*	*KAB %*	*KABCO %*
	Fatal (K)	A-Injury	B-Injury	C-Injury	PDO			
Animal	0	0	0	0	2	***2***	***0%***	***28.6%***
Rear End	0	0	0	0	2	***2***	***0%***	***28.6%***
Sideswipe - SD	0	0	0	0	2	***2***	***0%***	***28.6%***
Turning	1	0	0	0	0	***1***	***100.0%***	***14.3%***
Total	**1**	**0**	**0**	**0**	**6**	***7***	***100%***	***100%***

5.2.1.3 Dixie Highway from West 187th Street to Vardon Lane

Segment Priority Rank - State Jurisdiction: #3

Emphasis Areas: Intersections

Dixie Highway, shown by the yellow line in Figure 5-11, is a minor arterial road with a 30 MPH speed limit. This corridor is located on the east side of the village, northwest of Idlewood Country Club. The west side of Dixie Highway is mainly residential, while the east side is mainly commercial buildings. Recommendations for this priority segment are focused on speed management and general foliage maintenance activities. Some of the overgrown vegetation at the minor leg stop control intersections along Dixie Highway obstructs the views of turning vehicles, potentially creating an environment with greater risk of a crash.

Figure 5-11. Dixie Highway from Vardon Lane to West 187th Street

As shown in Table 5-5, the most frequent crash type is turning crashes representing nearly 40 percent of crashes, while angle crashes represent almost 17 percent of crashes. With roughly 8 access points to commercial buildings and 3 side-streets off Dixie Highway, these access points contribute to the frequency of turning and angle crashes.

What do residents say about this location?

- "Dixie Highway vegetation is so overgrown."
- "It would be nice to see a bike friendly route or path from Flossmoor to connect to the Forest Preserve Trail in Glenwood."
- "It is very hard to see oncoming traffic on Dixie when trying to turn off Vardon due to overgrown bushes." (see Figure 5-12)

Figure 5-12. View from eastbound Vardon Lane, looking north towards overgrown vegetation on west side of Dixie Highway

Table 5-5. Dixie Highway (W. 187th to Vardon) Crash History (2015-2019)

Crash Type	Crash Severity					*Total*	*KAB %*	*KABCO %*
	Fatal (K)	A-Injury	B-Injury	C-Injury	PDO			
Angle	0	0	1	0	2	***3***	***50.0%***	***16.7%***
Fixed Object	0	0	1	0	1	***2***	***50.0%***	***11.1%***
Parked Motor Vehicle	0	0	0	1	0	***1***	***0%***	***5.6%***
Rear End	0	0	0	1	2	***3***	***0%***	***16.7%***
Sideswipe - SD	0	0	0	0	2	***2***	***0%***	***11.1%***
Turning	0	0	0	2	5	***7***	***0%***	***38.9%***
Total	**0**	**0**	**2**	**4**	**12**	**18**	***100%***	***100%***

SD - Same Direction

- **Speed Feedback Signs** – Use motion-sensing technology to provide live feedback to motorists of their current speeds and how they compare to the posted speed limit.
  - Low-cost treatment that can help make motorists aware of the posted speed limit and when they are speeding.
  - Reduced speed typically reduces severity in the event of a crash, especially angle and turning crashes.
- **High-Visibility Enforcement** – Universal traffic strategy approach designed to create a deterrence and change unlawful traffic behaviors related to speeding or reckless, distracted, and impaired driving.
  - Extra law enforcement presence during off-peak hours increases speed compliance.
- **Roadside Maintenance** – Trim or remove vegetation along the roadway that impedes visibility of driveways, roadside features, and prevent motorists turning onto Dixie Highway from properly judging gaps in traffic, as shown in Figure 5-12.
  - Prioritize foliage maintenance activities for near-term improvements.
- **Turning Channelization** – There are many access points from Dixie Highway into commercial parking lots. Convert some of these to right-in/right-out with the intent of reducing the frequency of angle and turning crashes.
  - Even though the number of vehicles making left-turns onto southbound Dixie Highway from the commercial buildings would be expected to remain the same, the mainline Dixie Highway traffic will not have to be as concerned with the roughly eight opportunities at access points for left-turning vehicles to cross northbound traffic for the southbound travel lanes.

5.2.2 County Jurisdiction Priority Segments

5.2.2.1 Vollmer Road from Dixie Highway to Cambridge Avenue

Segment Priority Rank - County Jurisdiction: #1

Emphasis Areas: Speed Management

This 0.4-mile portion of Vollmer Road, shown with the yellow line in Figure 5-13, is situated at the southeast corner of the village and is just east of the Flossmoor Golf Club. Similar concerns have been expressed about speeding vehicles through this section and speed management techniques should be considered. This priority segment is largely residential, with two smaller commercial buildings on the southeast portion of corridor, while a portion of the south side of the street is jurisdiction of the neighboring agency. Coordination between neighboring jurisdictions should be considered during the evaluation or feasibility process. Addressing speed-related issues that are currently observed could lead to a more welcoming environment for active transportation modes, too.

Figure 5-13. Vollmer Road from Cambridge Avenue to Dixie Highway

Table 5-6 shows the majority of crashes along this segment of roadway being some variation of rear end or front to rear crashes, combining for more than 80 percent of the KABCO crashes. This can largely be attributed to the roughly 18 access points or residential driveways along the 0.4-mile corridor.

What do residents say about this location?

- "Speeds are dangerously excessive."
- "A speeding car recently ran off the road and hit a AT&T utility box."

Table 5-6. Vollmer Road (Dixie to Cambridge) Crash History (2015-2019)

Crash Type	Crash Severity					*Total*	*KAB %*	*KABCO %*
	Fatal (K)	A-Injury	B-Injury	C-Injury	PDO			
Animal	0	0	0	0	1	***1***	***0%***	***3.1%***
Fixed Object	1	0	1	0	1	***3***	***20.0%***	***9.4%***
Front to Rear	0	0	1	1	4	***6***	***10.0%***	***18.8%***
Head On	0	0	0	0	1	***1***	***0%***	***3.1%***
Rear End	0	0	6	1	13	***20***	***60.0%***	***62.5%***
Turning	0	0	1	0	0	***1***	***10.0%***	***3.1%***
Total	**1**	**0**	**9**	**2**	**20**	***32***	***100%***	***100%***

Excessive speeding was a primary safety concerns from engagement activities along this corridor. The combination of excessive speeding and frequent access points, where vehicles are coming to unexpected slow speeds to make a turn to a driveway, is the most likely culprit for the overwhelming number of rear end and front to rear crashes. Since removing driveways to residential homes is not an option, other methods need to be used to slow drivers down.

- **Speed Feedback Signs** – Uses motion-sensing technology to provide live feedback to motorists of their current speeds and how they compare to the posted speed limit.
  - Low-cost treatment that can be relocated periodically to existing signage, as shown in Figure 5-14.
  - Reduced speed typically reduces severity in the event of a crash.
  - Establish project limits and identify potential constraints such as route designation along Vollmer Road and what priority is currently given to vehicle traffic.
  - Conduct traffic study and signal warrant analysis at Vollmer Road and Cambridge Avenue to evaluate alternatives to speed management techniques.

Figure 5-14. Re-locatable speed feedback sign

5.2.2.2 Vollmer Road from Kedzie Avenue to Oak Lane Road

Segment Priority Rank - County Jurisdiction: #2

Emphasis Areas: Heavy Vehicles, Pedestrians & Bicyclists, Speed Management

Figure 5-15 shows a yellow line that represents a 0.56-mile section of Vollmer Road that travels under the Metra train tracks and straddles the border between Flossmoor and Olympia Fields. This segment has been a cause of large trucks frequently hitting and getting stuck under the viaduct structure, causing severe traffic backups. Additionally, the lack of sidewalks or bike facilities creates undesirable conflicts between pedestrian or bike and vehicles. This provides an opportunity for greater sidewalk and bike connectivity for the west and east sides of the village and will require municipal coordination between the jurisdictions that are adjacent to this segment

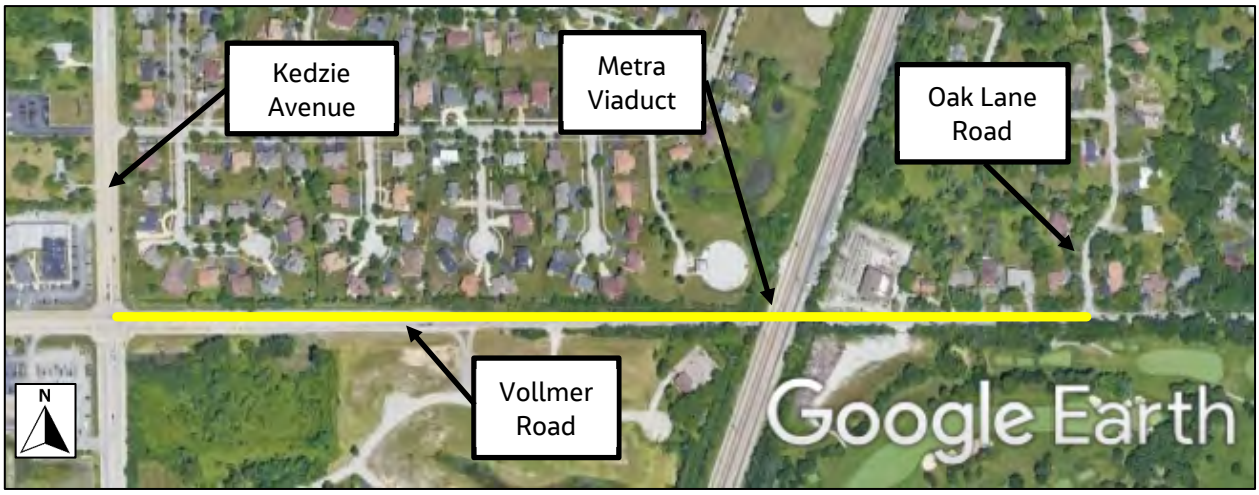


Figure 5-15. Vollmer Road from Kedzie Avenue to Oak Lane Road

Table 5-7. Vollmer (Kedzie to Oak) Crash History (2015-2019)

Crash Type	Crash Severity					*Total*	*KAB %*	*KABCO %*
	Fatal (K)	A-Injury	B-Injury	C-Injury	PDO			
Fixed Object	0	0	0	3	37	***40***	***0%***	***48.8%***
Front to Rear	0	0	0	0	3	***3***	***0%***	***3.7%***
Head On	0	0	1	0	0	***1***	***10.0%***	***1.2%***
Other Non-Collision	0	0	0	0	1	***1***	***0%***	***1.2%***
Rear End	0	0	6	1	24	***31***	***60.0%***	***37.8%***
Sideswipe - OD	0	1	0	0	1	***2***	***10.0%***	***2.4%***
Sideswipe - SD	0	1	0	0	1	***2***	***10.0%***	***2.4%***
Turning	0	0	1	0	1	***2***	***10.0%***	***2.4%***
Total	**0**	**2**	**8**	**4**	**68**	**82**	***100%***	***100%***

SD - Same Direction

OD - Opposite Direction

- **Sidewalks** – Concrete paths that are often adjacent to public roadways allow for pedestrians and bicyclists to travel along similar paths to motorized vehicles. Facilities should be designed for full ADA compliance with adequate ramps and lateral space.
  - The sidewalk recommendation is intended for at least one of side of the corridor, north or south. An additional feasibility study may be required to determine the most appropriate pedestrian facility (e.g. multiuse path)
  - On both the north and south side of the Metra viaduct, there is currently about 9 feet of available width between the bridge piers and the retaining wall. This could be used for sidewalk or path construction. Metra owns the western half of the viaduct, while Canadian National Railway owns the eastern half. Coordination with these two railroads is suggested for any of the improvements near railroads.
  - One of the most difficult tasks in implementing a sidewalk project is to establish project limits and identify constraints for sidewalk construction. Additionally, with major construction on Vollmer Road, it would be likely that one direction of travel would need to be closed, resulting in the need of a thorough Maintenance of Traffic plan. The next nearest east-west connection is 1 mile to the north at Flossmoor Road and 1.5 miles to the south at US-30.

What do residents say about this location?

- "Heavy vehicles and trucks get stuck under the overpass due to clearance, need signage and other means to reroute them elsewhere, stopped trucks create backups and endanger other drivers."
- "No sidewalk, dangerous to try and cross under the viaduct by foot."

- **Heavy Vehicles** – During meetings with the steering committee and officers from the police department, along with discussions with residents, the most desired improvement for heavy vehicles along this corridor would be the prevention of heavy vehicle collisions with the Metra bridge structure overhead. To create a deterrence to this, there is advanced warning signage with flashing beacons in both directions prior to the bridge, yet collisions are still occurring.
  - A complete roadway rehabilitation of this corridor will create a more significant sag vertical curve in order to increase the vertical clearance between the roadway and the bottom of the Metra bridge structure.
  - If implementing a roadway rehabilitation, consider simultaneous construction of a multi-use path or sidewalk.
- **Speed Feedback Signs** –Uses motion-sensing technology provides live feedback to motorists of their current speeds and how they compare to the posted speed limit. An example of a speed feedback sign currently located in Flossmoor is shown in Figure 5-14.
  - Low-cost treatment that can help make motorists aware of the posted speed limit and when they are speeding.
  - Reduced speed typically reduces severity in the event of a crash.

5.2.2.3 Kedzie Avenue from Viking Drive to 186th Street

Segment Priority Rank - County Jurisdiction: #3

Emphasis Areas: Pedestrians & Bicyclists, Young Road Users, Speed Management

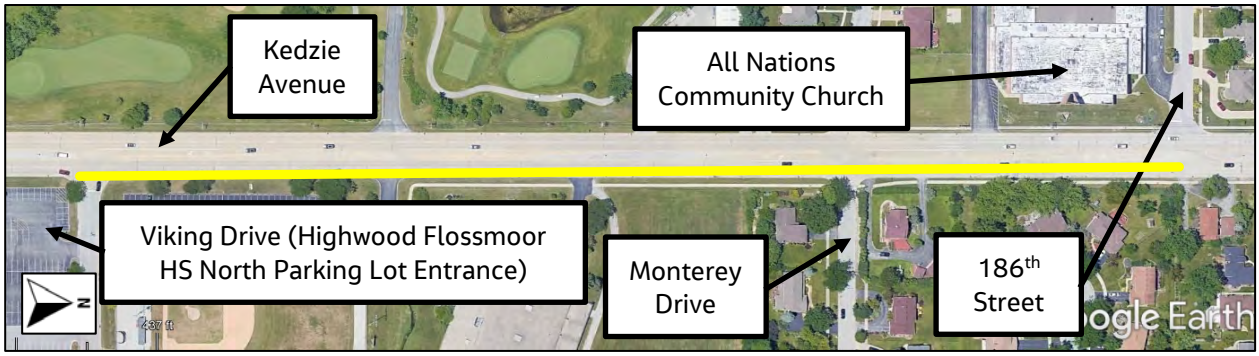


Figure 5-16. Kedzie Avenue from Viking Drive to 186th Street

The 0.35-mile priority segment along Kedzie Avenue, represented by the yellow line in Figure 5-16, is situated on the west side of Homewood-Flossmoor (HF) High School. Coyote Run Golf Course is located just west of the corridor while All Nations Community Church is located on the west side of Kedzie Avenue just south of 186th Street.

On northbound Kedzie Avenue there are two signs reading "SPEED LIMIT 20 MPH ON SCHOOL DAYS WHEN CHILDREN ARE PRESENT - FINES HIGHER". However, the normal posted speed limit along this section is 40 MPH. Similarly, the southbound direction of Kedzie Avenue has a normal speed limit of 45 MPH but only one school speed limit sign with the same message indicating higher fines. This particular sign is located about 400 feet south of Monterey Drive.

Table 5-8. Kedzie Avenue (Viking to 186th) Crash History (2015-2019)

Crash Type	Crash Severity					*Total*	*KAB %*	*KABCO %*
	Fatal (K)	A-Injury	B-Injury	C-Injury	PDO			
Angle	0	0	0	0	1	***1***	***0%***	***12.5%***
Fixed Object	0	0	0	0	2	***2***	***0%***	***25.0%***
Front to Rear	0	1	0	0	0	***1***	***50.0%***	***12.5%***
Rear End	0	1	0	0	1	***2***	***50.0%***	***25.0%***
Sideswipe - SD	0	0	0	0	1	***1***	***0%***	***12.5%***
Turning	0	0	0	0	1	***1***	***0%***	***12.5%***
Total	**0**	**2**	**0**	**0**	**6**	***8***	***100%***	***100%***

SD - Same Direction

On Kedzie Avenue, along the west side of the high school property, individuals have expressed concern about the lack of adequate crossings and sidewalks on both sides of the road for students walking or biking to the high school. Access provided by new or reconstructed sidewalks would allow students to choose the route or mode they wish to travel. As expected, vehicle traffic is high during morning and afternoon hours coinciding with the start and end of the school day, so it is important to have the non-motorized infrastructure in place and meet ADA standards to provide safe travel alternatives.

What do residents say about this location?

- "A sidewalk or path on both sides of the road from Monterey Drive to the HF High School would be beneficial for these residents."
- "Young drivers, pedestrians, school zones, intersection."

- **Sidewalks** – Concrete paths that are often adjacent to public roadways allow for pedestrians and bicyclists to travel along similar paths to motorized vehicles. Facilities should be designed for full ADA compliance with adequate ramps and lateral space, as shown in Figure 5-17.
  - Repair of damaged or shifted concrete slabs, and upgrade to ADA-compliant curb ramps on both sides of the road.

Figure 5-17. ADA-compliant sidewalk curb ramps

- **Safe Routes to School** – Investigate a SRTS plan for HF high school.
- **Young Drivers** – Continue collaboration efforts with Village and school staff to assist young drivers' ability to judge gaps in traffic when entering and exiting school property.

Speed Feedback Signs – Uses motion-sensing technology provides live feedback to motorists of their current speeds and how they compare to the posted speed limit. An example of a speed feedback sign currently located in Flossmoor is shown in Figure 5-14.

- Low-cost treatment that can help make motorists aware of the posted speed limit and when they are speeding.

5.2.3 Municipal Jurisdiction Priority Segments

5.2.3.1 Flossmoor Road from Dixie Highway to Western Avenue

Segment Priority Rank - Municipal Jurisdiction: #1

Emphasis Areas: Pedestrians & Bicyclists, Speed Management

Figure 5-18. Flossmoor Road from Dixie Highway to Travers Lane (eastern half)

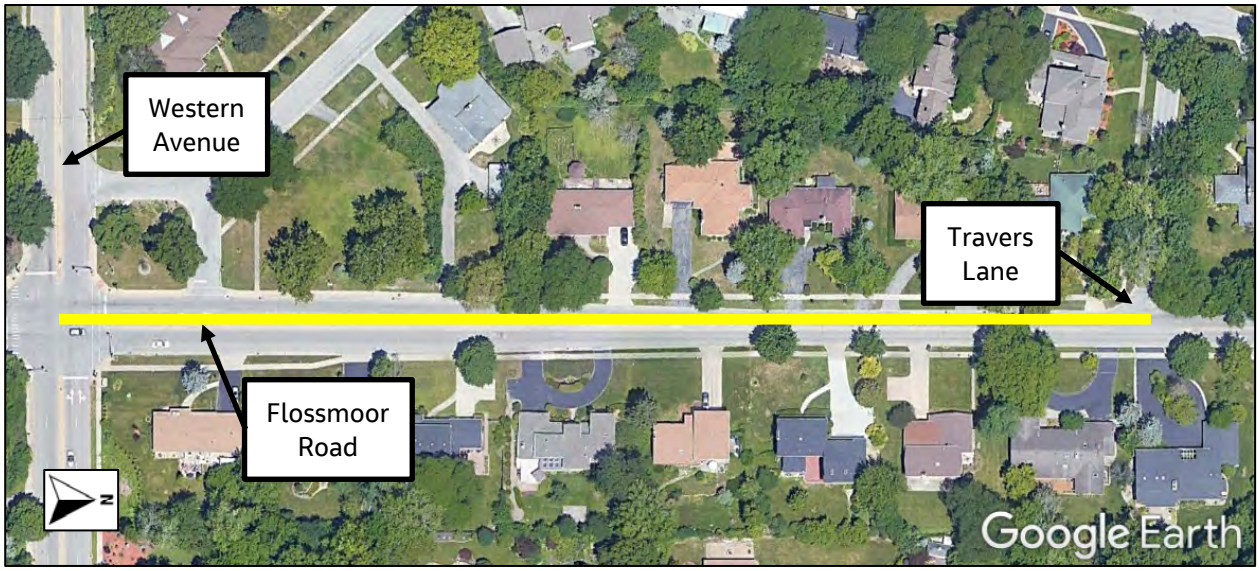


Figure 5-19. Flossmoor Road from Western Avenue to Travers Lane (western half)

This portion of Flossmoor Road, shown in Figures 5-18 and 5-19 by the yellow lines, has a functional classification of a major collector and a posted speed limit of 30 MPH. The AADT of this section is 6,250. This corridor primarily consists of residential driveway access points.

This corridor has multiple recommendations with overlapping emphasis areas that are being targeted. Primary safety concerns from steering committee meetings and public input include excessive speeding and inadequate pedestrian crossings. These issues are addressed through the below recommendations, including the installation of bicycle lanes, traffic-calming measures, and speed feedback signs. This multifaceted approach attempts to improve safety performance by addressing concerns from multiple angles, including modifying driver behaviors through environmental changes as well as through improved enforcement. Recommendations should be studied further prior to implementation to help optimize their effectiveness and to work within the constraints of the roadway environment.

Table 5-9. Flossmoor Road (Dixie to Western) Crash History (2015-2019)

Crash Type	Crash Severity					*Total*	*KAB %*	*KABCO %*
	Fatal (K)	A-Injury	B-Injury	C-Injury	PDO			
Fixed Object	1	0	1	0	0	***2***	***66.7%***	***66.7%***
Rear End	0	0	1	0	0	***1***	***33.3%***	***33.3%***
Total	**1**	**0**	**2**	**0**	**0**	**3**	***100%***	***100%***

Table 5-9 shows there are no frequent patterns of crashes along this corridor. Instead, many of the suggested countermeasures have relied on the public comments that were provided by residents.

What do residents say about this corridor?

- "There are no pedestrian facilities to cross Flossmoor Road."
- "The crosswalk between Flossmoor Road and Idlewild Country Club across Dixie Highway was recently removed, concern from myself and others who frequently need to walk across that street."
- "Flossmoor Road between Western Ave and Dixie Highway has become a racetrack with everything from general speeding to actual drag racing. Noise is horrendous and the speed is terrifying."
- "Intersection of Dixie Highway and Flossmoor Road and Cambridge Avenue is a "terrible turn", poor visibility, overly complex, need better design."
- "Flossmoor Road between Western and Dixie is prone to speeders and lacks some sidewalk. Bike lanes would be useful here!"

- **Bicycle Lanes** – a dedicated space on roadways for bicyclists to occupy through pavement markings including solid edge lines, pavement markings to indicate warning text, and sometimes a solid color fill throughout the lane. For additional protection, a raised curb or barrier can also be integrated into plans for bike lanes. With the existing cross section measuring 32 feet, a cross section similar to what is shown in Figure 5-6 can be implemented.
  - Provides a clear, dedicated space for commuters and recreational cyclists.
  - Dedicated space may encourage more cycling activity.
- **Traffic Calming** – use of various low-impact design features, as shown in Figure 5-20, along with modifications to the roadway and the surrounding environment to indirectly slow down vehicle traffic and create a more friendly environment for non-motorized road users.
  - Reduces vehicle speed by installing raised crosswalks. Consider installing advanced warning sign with this countermeasure.
  - May create a renewed sense of community with more pedestrian-oriented areas.
  - Establish project limits and identify potential physical barriers.
  - Determine the best combination of improvements while considering available resources.

Speed Feedback Signs –

Uses motion-sensing technology provides live feedback to motorists of their current speeds and how they compare to the posted speed limit. An example of a speed feedback sign currently located in Flossmoor is shown in Figure 5-14.

- Low-cost treatment that can help make motorists aware of the posted speed limit and when they are speeding.

Figure 5-20. Traffic calming examples

5.2.3.2 Park Drive from Sterling Avenue to Argyle Avenue

Segment Priority Rank - Municipal Jurisdiction: #2

Emphasis Areas: Pedestrians & Bicyclists, Intersections

The Central Business District was discussed earlier in Section 5.1, largely based on conversations about the area being a focal point for improvements for the village. From a quantitative standpoint, a 1/10th of a mile section of Park Drive, shown in Figure 5-21, is a municipal jurisdiction priority segment.

Although Figure 5-10 shows the crash history along this corridor is minimal, there were a significant amount of public comments that focused on this area of the CBD.

What do residents say about this location?

- "The mailbox placement on the traffic circle causes problems and inhibits traffic flow."
- "Motorists speed through downtown and ignore crosswalks. I would love a traffic camera to ticket motorists not observing pedestrians in the crosswalk."

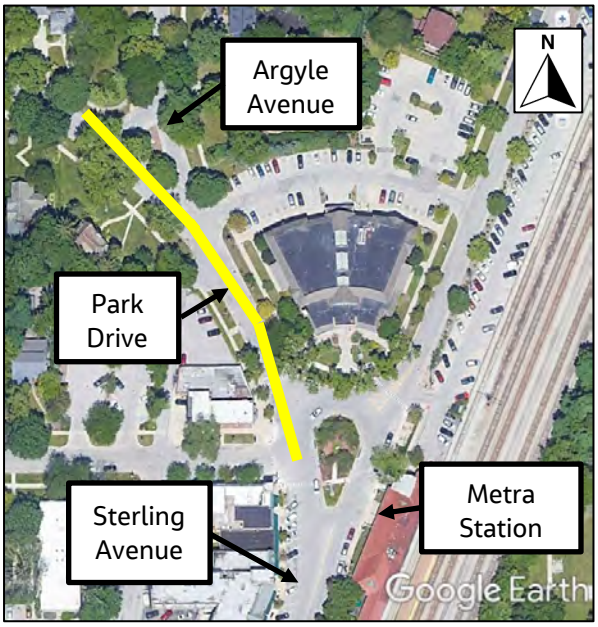


Figure 5-21. Park Drive from Sterling Avenue to Argyle Avenue

Table 5-10. Park Drive (Sterling to Argyle) Crash History (2015-2019)

Crash Type	Crash Severity					*Total*	*KAB %*	*KABCO %*
	Fatal (K)	A-Injury	B-Injury	C-Injury	PDO			
Parked Motor Vehicle	0	0	0	0	1	*1*	*0%*	*100.0%*
Total	**0**	**0**	**0**	**0**	**1**	*1*	*NA*	*100%*

Figure 5-22. Improvements at Park Drive and Central Drive

- **Pedestrian Facilities** – High-visibility pedestrian crossings, shown in Figure 5-22 are generally easily implementable but must be coordinated with future improvements planned in the downtown area. A specific variation of a high-visibility crossing would be a raised crosswalk that doubles as a speed bump, as shown in Figure 5-23.
  - Additionally, facilities should be designed for full ADA compliance with adequate ramps and lateral space.
- **Pedestrian Visibility** – The current location of the mailbox on the traffic circle can create issues with vehicles seeing pedestrians. When a large body vehicle is stopped at the mailbox and a trailing vehicle attempted to pass the large vehicle, the passing vehicle would have a hard time seeing a pedestrian crossing from the traffic circle in the westbound direction.
  - Assess if a relocation of the traffic circle's mailbox to Central Drive is viable since it is a one-way route.

Figure 5-23. Raised crosswalk example

- **Intersection Improvements** – Renderings shared in Section 5.1 show new channelization with raised curbs that act as beneficial features for both drivers and pedestrians. Drivers benefit from this because the channelization acts as positive reinforcement to continue along the traffic circle in the correct

direction. Pedestrians and bicyclists benefit from the proposed raised curbed areas due to the reduced crossing distance, which implies less time being exposed in the roadway.

5.2.3.3 Sterling Avenue from Flossmoor Road to Wallace Drive

Segment Priority Rank - Municipal Jurisdiction: #3

Emphasis Areas: Pedestrians and Bicyclists

This section of Sterling Avenue, shown by the yellow line in Figure 5-24, has a 25 MPH speed limit and is a vital connection into the downtown area and the Metra station. South of the library parking lot, which is near the midpoint of the 0.27-mile priority segment, is a mix of local businesses, a portion of the parking lot for the Metra commuters, and the Metra station. North of the library parking lot includes the other half of the Metra parking lot and more residential homes to the north. There are designated on-street parking spots sprinkled throughout the southern section of this segment as well.

What do residents say about this location?

- "We need bike lanes on Sterling Avenue near the Metra Station."
- "Drivers are constantly running the stop sign at Sterling on the southeast side of the library."
- "The downtown area is out of control…people are not following the rules of the road."
- "We need better enforcement at the traffic circle stop signs."

Figure 5-24. Park Drive from Sterling Avenue to Argyle Avenue

Similar to the first and second ranking municipal segments, Sterling Avenue has very few reported crashed from 2015 to 2019, as shown in Table 5-11.

Table 5-11. Park Drive (Sterling to Argyle) Crash History (2015-2019)

Crash Type	Crash Severity					*Total*	*KAB %*	*KABCO %*
	Fatal (K)	A-Injury	B-Injury	C-Injury	PDO			
Angle	0	0	1	0	1	***2***	***100.0%***	***66.7%***
Parked Motor Vehicle	0	0	0	0	1	***1***	***0%***	***33.3%***
Total	**0**	**0**	**1**	**0**	**2**	**3**	***100%***	***100%***

- **Bicycle Lanes** – A dedicated space on roadways for bicyclists to occupy through pavement markings including solid edge lines, warning text, and sometimes a solid color fill throughout the lane. Figure 5-25 shows one variation of possible bike lane configurations where both directions of bike travel are located on the same curb line. In between the bike lanes and active traffic is a hatched buffer area next to on-street parking. If the parallel street parking on the east side of Sterling Avenue was removed, the implementation of bike lanes would become much more practical.
  - Begin building a bicycle infrastructure network in Flossmoor to promote active transportation and safe streets for all users.
  - Establishes a focus on non-motorized transportation near the downtown area.

Figure 5-25. Two-way bicycle lane example

5.3 Priority Intersections

Intersections were identified as a priority based on the highest normalized PM score, as described in the beginning of Section 5. The intersections that received the highest scores include three locations for each state, county, and municipal jurisdictions and multiple safety countermeasures have been identified. Table 5-12 shows the nine intersections and corresponding information. All three of the state intersections are signalized. The prioritized county intersections consist of two signalized and one all-way stop controlled intersections, while all three municipal intersections are uncontrolled or a traffic control device is absent. Figure 5-26 shows the distribution of traffic control types of the priority intersections and the corresponding number of projects recommended at those particular traffic control devices locations.

It is recommended that the village prioritize those projects which exhibit the greatest opportunity for improvement, featuring multiple countermeasure recommendations. Treatment of these locations will be expected to have the greatest impact, addressing multiple safety issues and resident concerns within a single project. All aerial figures in Section 5.3 include a yellow star that represents the intersection midpoint.

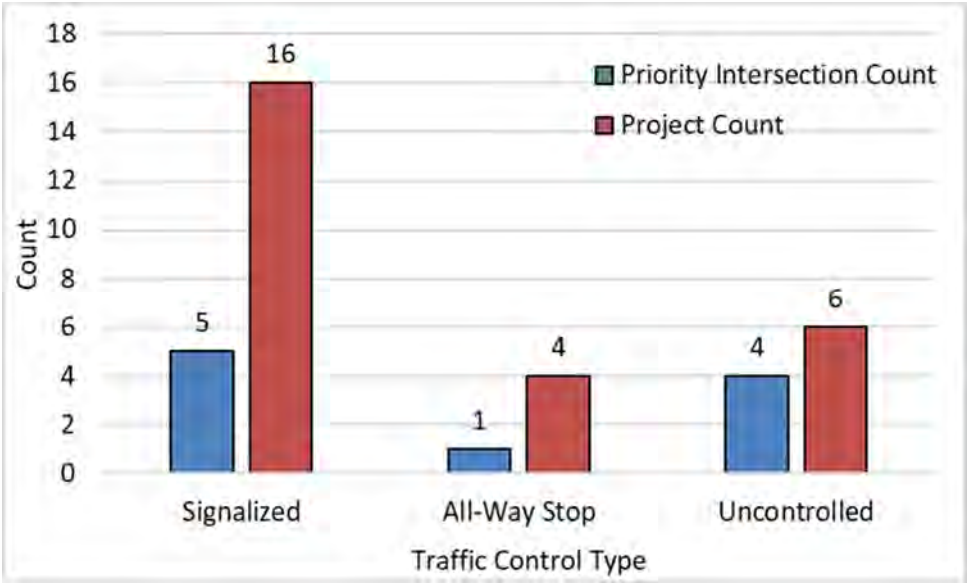


Figure 5-26. Traffic Control Distribution and Project Summary by Priority Intersection and

Table 5-12. Details of Priority Intersection

Priority Rank	Street Name 1	Street Name 2	Jurisdiction	IRIS Inventory + Beginning Station	Total Entering Vehicles	KABCO Crash Frequency and Weights (2015-2019)					PM Score - Crashes	PM Score - Comments	PM Score Sum	Normalized PM Score * 1,000,000
						K - 217.248	A - 23.757	B - 6.546	C - 3.036	PDO - 1.0				
1	Western Avenue	Vollmer Road	State	016 92845 000000_3.32	27,900	0	2	15	23	127	342.53	6	348.53	12,492.19
2	Crawford Road	Vollmer Road	State	016 91629 000000_3.98	33,150	0	4	13	17	80	311.74	0	311.74	9,403.86
3	Governor's Highway	Vollmer Road	State	016 91629 000000_4.71	29,650	0	2	13	7	42	195.86	0	195.86	6,605.87
1	Flossmoor Road	Kedzie Avenue	County	016 92831 000000_31.19	21,400	0	3	9	8	20	174.47	3	177.47	8,293.13
2	Flossmoor Road	Sterling Avenue	County	016 01052 001985_0.68	8,300	0	0	1	3	9	24.65	11	35.65	4,295.66
3	Vollmer Road	Kedzie Avenue	County	016 91629 000000_4.99	27,650	0	0	8	6	48	118.58	0	118.58	4,288.75
1	189th Street	Springfield Avenue	Municipality	016 02160 001985_0.25	NA	0	0	2	0	4	17.09	0	17.09	NA
2	189th Street	Hamlin Avenue	Municipality	016 03035 001985_0.25	NA	0	0	1	2	0	12.62	0	12.62	NA
3	Argyle Avenue	Gordon Drive	Municipality	016 03061 001985_0.27	NA	0	0	1	0	2	8.55	2	10.55	NA
					Total -	0	11	63	66	332				

5.3.1 State Jurisdiction Priority Intersections

5.3.1.1 Western Avenue at Vollmer Road

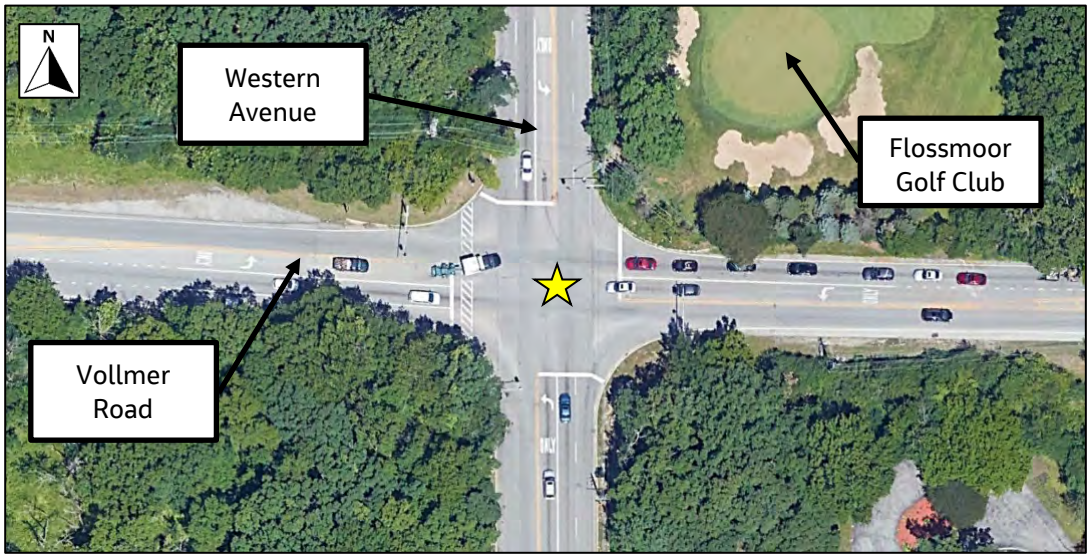


Figure 5-27. Western Avenue at Vollmer Road

Intersection Priority Rank - State Jurisdiction: #1

Emphasis Areas: Pedestrians & Bicyclists, Intersections

The signalized intersection of Western Avenue and Vollmer Road, which is shared with Olympia Fields, currently has a marked crosswalk on the west leg of the intersection, as shown in Figure 5-27, but all corners are lacking sidewalks. There are also restrictions on southbound vehicles making right turns in the westbound direction. There were comments at this location from the public requesting the village to investigate safety concerns related to lacking pedestrian facilities, poor driver behavior, low lighting, and poor operational performance. The crash history at this intersection is shown in Table 5-13 below.

Table 5-13. Western Avenue at Vollmer Road Crash History (2015-2019)

Crash Type	Crash Severity					*Total*	*KAB %*	*KABCO %*
	Fatal (K)	A-Injury	B-Injury	C-Injury	PDO			
Rear End	0	0	9	14	74	*97*	*52.9%*	*58.1%*
Turning	0	0	4	7	25	*36*	*23.5%*	*21.6%*
Fixed Object	0	1	0	1	9	*11*	*5.9%*	*6.6%*
Other	0	1	0	0	7	*8*	*5.9%*	*4.8%*
Sideswipe - SD	0	0	0	0	7	*7*	*0%*	*4.2%*
Angle	0	0	1	0	3	*4*	*5.9%*	*2.4%*
Sideswipe - OD	0	0	0	1	2	*3*	*0%*	*1.8%*

Crash Type	Crash Severity					*Total*	*KAB %*	*KABCO %*
	Fatal (K)	A-Injury	B-Injury	C-Injury	PDO			
Pedestrian	0	0	1	0	0	*1*	*5.9%*	*0.6%*
Total	**0**	**2**	**15**	**23**	**127**	***167***	***100%***	***100%***

SD - Same Direction

OD - Opposite Direction

The predominant crash types are rear end and turning related crashes and together account for nearly 80 percent of crashes. Based on the crash history and the concerns expressed by the public, two countermeasures are recommended at this location that is intended to improve signal operations and pedestrian safety.

- **Signal Retiming** – Retiming existing traffic signals is intended to optimize traffic flow and assign right-of-way using various inputs such as approach volumes and lane configuration for times of the day. With current technology, some agencies have the ability to evaluate and retime signal cycles from a centralized traffic control center. This allows for a streamlined process to correct any observable issues that might occur at different times of the day
- **Leading Pedestrian Interval** – A Leading Pedestrian Interval (LPI) is a traffic signal timing treatment. It involves a small modification to the begin times of pedestrian crossing movements, giving pedestrians a 3- to 7-second head start when entering the crosswalk of an intersection relative to the corresponding protected signal phase for left-turning vehicles.
  - A safety analysis of LPI implementation in the City of Chicago documented an estimated 17 percent reduction of total crashes for all severities and nearly a 30 percent reduction in crashes involving pedestrians.
- **Signal Backplates with Retroreflective Borders** – Adding a reflective perimeter around signal heads provide an enhanced visibility factor as vehicles approach the intersection both at night and during the day, by presenting drivers with a distinct, contrasting background. A contributing factor to rear-end crashes is the unanticipated braking of a vehicle as it approached an intersection, resulting in the trailing vehicle rear-ending the front vehicle. This improvement also helps drivers with deteriorating visibility or drivers with color-blindness. Another advantage of this countermeasures, although it ideally occurs infrequently, is that the reflective border provides drivers with an indicator of a signal when there are power outages.
  - This improvement is listed as one of FHWA's "Proven Safety Countermeasures", carrying an anticipated 15 percent crash reduction factor.
- **Lighting** - The intersection could be improved by adding lighting at each of the corners.
  - This improvement is also listed as one of FHWA's "Proven Safety Countermeasures", carrying an anticipated 42 percent crash reduction factor for crashes at night that include pedestrians. Additionally, nighttime crashes are expected to be reduced by about 35 percent at urban and rural intersections.
- **New Sidewalks** – The intersection does not have sidewalks even though other pedestrian facilities are present along the west leg of the intersection. Sidewalks would assist in connecting the neighborhoods on the west and east side of Western Avenue.

5.3.1.2 Crawford Road at Vollmer Road

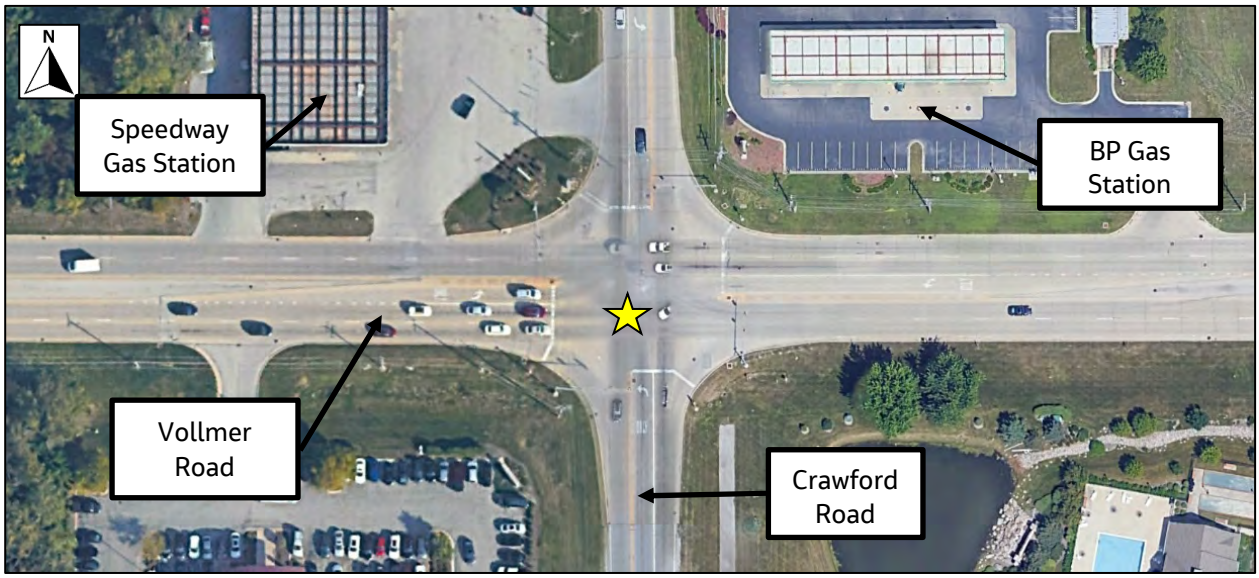


Figure 5-28. Crawford Road at Vollmer Road

Intersection Priority Rank - State Jurisdiction: #2

Emphasis Areas: Intersections

The signalized intersection at Crawford Avenue and Vollmer Road is heavily traveled and has traversable medians on the east and west approaches. Fuel stations are situated on the northwest and northeast quadrants, shown in Figure 5-28, and a medical facility is located in the southwest quadrant. While not much public input was provided specifically to this location, the second priority state jurisdiction intersection has four incapacitating injury crashes with two rear end crashes, one turning crash, and one sideswipe (same direction). Table 5-14 provides the crash history that is broken down by crash type and crash severity. Note that only the northeast quadrant of the intersection belongs to Flossmoor.

Table 5-14. Crawford Avenue at Vollmer Road Crash History (2015-2019)

Crash Type	Crash Severity					*Total*	*KAB %*	*KABCO %*
	Fatal (K)	A-Injury	B-Injury	C-Injury	PDO			
Rear End	0	2	2	7	46	*57*	*23.5%*	*50.0%*
Turning	0	1	6	6	12	*25*	*41.2%*	*21.9%*
Angle	0	0	3	4	10	*17*	*17.6%*	*14.9%*
Sideswipe - SD	0	1	2	0	4	*7*	*17.6%*	*6.1%*
Fixed Object	0	0	0	0	6	*6*	*0%*	*5.3%*
Other	0	0	0	0	1	*1*	*0%*	*0.9%*
Head On	0	0	0	0	1	*1*	*0%*	*0.9%*
Total	**0**	**4**	**13**	**17**	**80**	***114***	***100%***	***100%***

SD - Same Direction

The predominant crash types are rear end and turning which combined account for nearly 72 percent of total crashes. One countermeasure recommended for this location can help improve sight distance for turning vehicles and have other operational benefits.

- **Offset Left-Turn Lanes** – Positive offset left-turn lanes are highly effective at improving the safety of left turns at signalized intersections under permissive left-turn phasing (i.e., when making a turn without a green arrow indicating a protected phase) with high volumes of through and turning traffic. This countermeasure aims to improve the visibility of oncoming traffic, leading to the drivers selecting an appropriate gap in traffic to safely maneuver a left turn.
  - Research suggests that introducing a positive offset between opposing left turn lanes may reduce total crashes by nearly 35 percent, angle crashes by 25 percent, rear end crashes by 31 percent or left turn crashes by 38 percent.
- **Signal Backplates with Retroreflective Borders** – Adding a reflective perimeter around signal heads provide an enhanced visibility factor as vehicles approach the intersection both at night and during the day, by presenting drivers with a distinct, contrasting background. A contributing factor to rear-end crashes is the unanticipated braking of a vehicle as it approached an intersection, resulting in the trailing vehicle rear-ending the front vehicle. This improvement also helps drivers with deteriorating visibility or drivers with color-blindness. Another advantage of this countermeasures, although it ideally occurs infrequently, is that the reflective border provides drivers with an indicator of a signal when there are power outages.
  - This improvement is listed as one of FHWA's "Proven Safety Countermeasures", carrying an anticipated 15 percent crash reduction factor.

5.3.1.3 Governors Highway at Vollmer Road

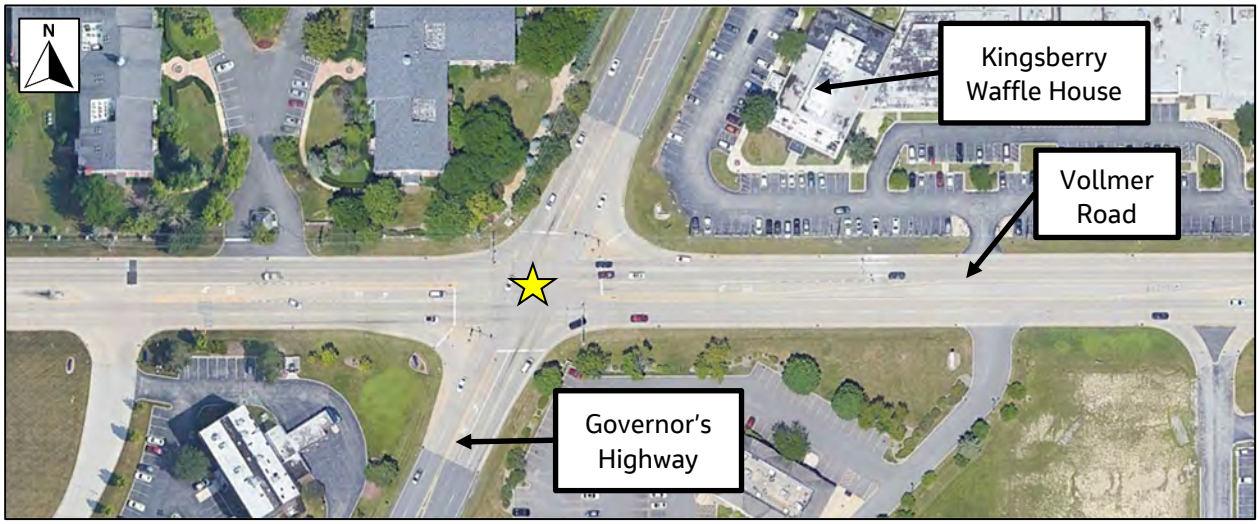


Figure 5-29. Governors Highway at Vollmer Road

Intersection Priority Rank - State Jurisdiction: #3

Emphasis Areas: Intersections

The third-ranking priority state intersection is the signalized intersection at Governor's Highway and Vollmer Road - where only the north side of the intersection belongs to the Village of Flossmoor. Figure 5-29 shows this location has a skewed approach angle that sometimes makes it difficult for drivers to turn

their heads when selecting gaps to make safe turns. Table 5-15 provides the crash history, showing the predominant crash type of rear end and angle. Combined, these crash types account for 74 percent of total crashes.

Table 5-15. Governor's Highway at Vollmer Road Crash History (2015-2019)

Crash Type	Crash Severity					*Total*	*KAB %*	*KABCO %*
	Fatal (K)	A-Injury	B-Injury	C-Injury	PDO			
Rear End	0	0	2	3	25	*30*	*13.3%*	*47.0%*
Angle	0	2	7	2	6	*17*	*60.0%*	*27.0%*
Turning	0	0	4	1	6	*11*	*26.7%*	*17.0%*
Sideswipe - SD	0	0	0	0	2	*2*	*0%*	*3.0%*
Fixed Object	0	0	0	0	4	*4*	*0%*	*6.0%*
Total	**0**	**2**	**13**	**6**	**43**	***64***	***100%***	***100%***

SD - Same Direction

The proposed countermeasures for this signalized intersection are intended to improve traffic safety and operational performance. The east and west approaches along Vollmer Road appear to have a 5-foot painted median that could be repurposed to achieve a greater offset for left-turning vehicles. On Governors Highway, the southbound approach currently has "NO TURN ON RED" signs placed on the near and far sides of the intersection box. Restricting this turning movement could be due to traffic volumes being twice as high on the county route versus the state route, along with the skewed approach angle.

- **Offset Left-Turn Lanes** – Positive offset left-turn lanes are highly effective at improving the safety of left turns at signalized intersections under permissive left-turn phasing (i.e., when making a turn without a green arrow indicating a protected phase) with high volumes of through and turning traffic. This countermeasure aims to improve the visibility of oncoming traffic, leading to the drivers selecting an appropriate gap in traffic to safely maneuver a left turn and reduce the likelihood of angle and turning crashes
  - Research suggests that introducing a positive offset between opposing left turn lanes may reduce total crashes by nearly 35 percent, angle crashes by 25 percent, rear end crashes by 31 percent, and left turn crashes by 38 percent.
- **Signal Retiming** – Retiming existing traffic signals is intended to optimize traffic flow and assign right-of-way using various inputs such as approach volumes and lane configuration for times of the day. With current technology, some agencies have the ability to evaluate and retime signal cycles from a centralized traffic control center. This allows for a streamlined process to correct any observable issues.

5.3.2 County Jurisdiction Priority Intersections

5.3.2.1 Flossmoor Road at Kedzie Avenue

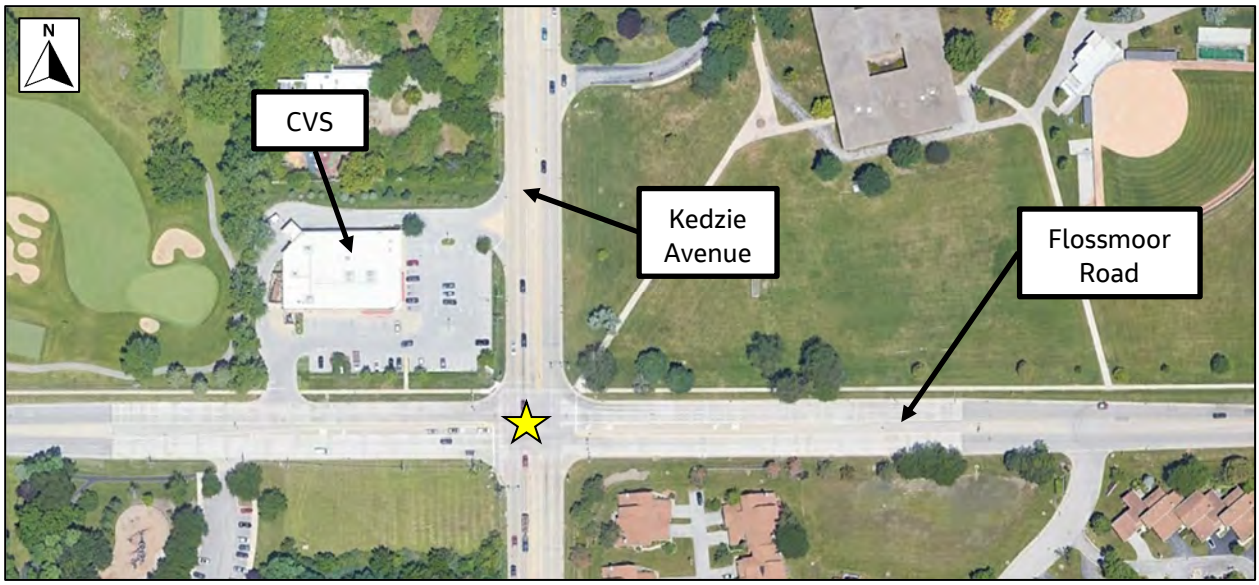


Figure 5-30. Flossmoor Road at Kedzie Avenue

Intersection Priority Rank - County Jurisdiction: #1

Emphasis Areas: Pedestrians & Bicyclists, Intersections

The highest priority intersection along county routes in Flossmoor is the signal at Flossmoor Road and Kedzie Avenue, shown in Figure 5-30. There were 40 total crashes, three resulting in incapacitating injuries from one rear end, fixed object, and pedestrian crash types. The predominant crash type observed at this location is turning crash types, which accounts for 45 percent of total crashes. More detail about the intersection crash history is found in Table 5-16.

Table 5-16. Flossmoor Road at Kedzie Avenue Crash History (2015-2019)

Crash Type	Crash Severity					*Total*	*KAB %*	*KABCO %*
	Fatal (K)	A-Injury	B-Injury	C-Injury	PDO			
Turning	0	0	6	5	7	*18*	*50.0%*	*45.0%*
Rear End	0	1	0	3	4	*8*	*8.3%*	*20.0%*
Angle	0	0	3	0	3	*6*	*25.0%*	*15.0%*
Fixed Object	0	1	0	0	2	*3*	*8.3%*	*7.5%*
Other	0	0	0	0	3	*3*	*0%*	*7.5%*
Sideswipe - SD	0	0	0	0	1	*1*	*0%*	*2.5%*
Pedestrian	0	1	0	0	0	*1*	*8.3%*	*2.5%*
Total	**0**	**3**	**9**	**8**	**20**	***40***	***100%***	***100%***

SD - Same Direction

The signalized improvements proposed at this intersection focus on geometric and operational modifications. The two marked crosswalks are approximately 100 feet long and could be shortened by reducing the right-turn curb radius, which reduces the amount of time a pedestrian spends in the roadway. All approaches appear to have a 5-foot painted median that could be repurposed to achieve a positive offset for the opposing left-turn lanes.

- **Right-Turn Geometrics** – An initial traffic study may be needed to determine which design vehicle will control the minimum curb radius for each corner of the intersection. By reducing the curb radius, turning vehicles will need to slow even further in order to comfortably maneuver the turn. Lower speeds also typically mean low severity in the event of a crash.
  - Research performed in Peoria, IL suggests modifying the angle of channelized right turn lanes may help improve overall safety performance. By implementing these changes to right-turn geometric features, it was estimated that crashes could be reduced by as much as 44 percent.
- **Offset Left-Turn Lanes** – Positive offset left-turn lanes are highly effective at improving the safety of left turns at signalized intersections under permissive left-turn phasing (i.e., when making a turn without a green arrow indicating a protected phase) with high volumes of through and turning traffic. This countermeasure aims to improve the visibility of oncoming traffic, as shown in Figure 5-31, and improve the selection of an appropriate gap in traffic to safely maneuver a left turn.
  - Research suggests that introducing a positive offset between opposing left turn lanes may reduce total crashes by nearly 35 percent, angle crashes by 25 percent, rear end crashes by 31 percent, and left turn crashes by 38 percent.

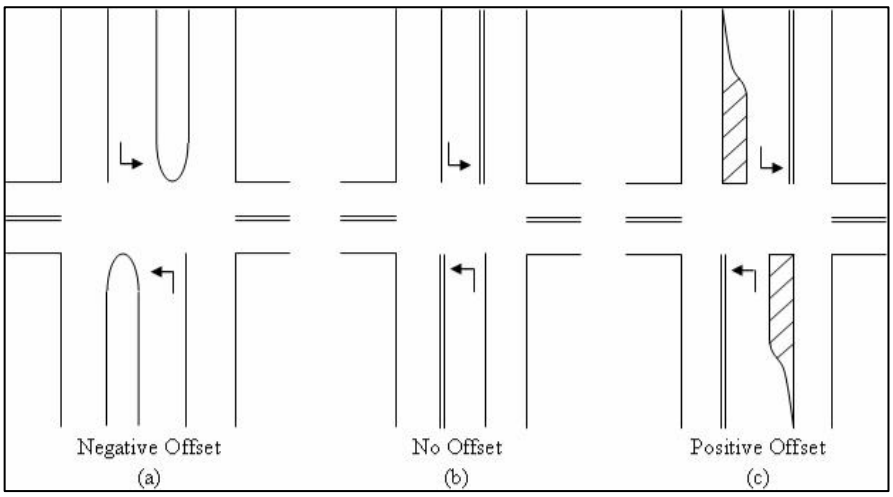


Figure 5-31. Positive offset left turn lanes schematic

- **Signal Retiming** – Retiming existing traffic signals is intended to optimize traffic flow and assign right-of-way using various inputs such as approach volumes and lane configuration for times of the day. With current technology, some agencies have the ability to evaluate and retime signal cycles from a centralized traffic control center. This allows for a streamlined process to correct any observable issues.
- **Leading Pedestrian Interval** – This is the same improvement that is proposed at Western Avenue/Vollmer Road. Coordination with Cook County is highly recommended since there is interest from the county to implement multiple LPIs along Flossmoor Road. This location is similar to the Governors Highway signal by retiming the signals to allow for pedestrians to get a head start of crossing the roadway.
  - A safety analysis of LPI implementation in the City of Chicago documented an estimated 17 percent reduction of total crashes for all severities and nearly a 30 percent reduction in crashes involving pedestrians.

5.3.2.2 Flossmoor Road at Sterling Avenue

Intersection Priority Rank - County Jurisdiction: #2

Emphasis Areas: Pedestrians & Bicyclists, Intersections

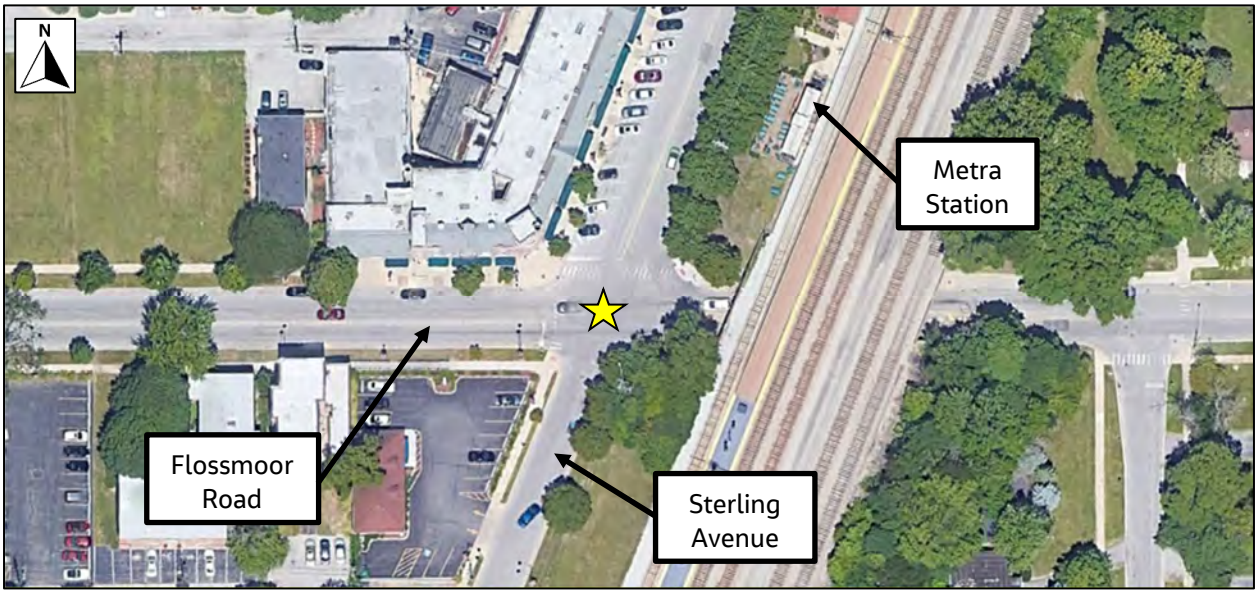


Figure 5-32. Flossmoor Road at Sterling Avenue

The second highest priority county location is shown in Figure 5-32 at the intersection of Flossmoor Road and Sterling Avenue. This location experienced 13 crashes in the five years of data analyzed and the predominant crash type observed was angle crashes. Table 5-17 provides the complete intersection crash history.

Table 5-17. Flossmoor Road at Sterling Avenue Crash History (2015-2019)

Crash Type	Crash Severity					*Total*	*KAB %*	*KABCO %*
	Fatal (K)	A-Injury	B-Injury	C-Injury	PDO			
Angle	0	0	0	1	4	*5*	*0.0%*	*39.0%*
Rear End	0	0	0	2	2	*4*	*0.0%*	*31.0%*
Fixed Object	0	0	0	0	2	*2*	*0.0%*	*15.0%*
Turning	0	0	1	0	1	*2*	*100.0%*	*15.0%*
Total	**0**	**0**	**1**	**3**	**9**	***13***	***100%***	***100%***

The improvements at the all-way stop-controlled intersection of Flossmoor Road and Sterling Avenue primarily focus on pedestrian enhancements. This intersection has angled street parking for the southbound direction located on the northwest quadrant. Parallel street parking on the northern side of the western leg of Flossmoor Road indicates pedestrian traffic is fairly common. The improvements and ideas for implementation are described as follows:

- **Right-Turn Geometrics** – As mentioned at a previous priority intersection, an initial traffic study may be needed to determine which design vehicle will control the minimum curb radius for each corner of the intersection. By reducing the curb radius, turning vehicles will need to slow down even more in order to comfortably maneuver the turn. Lower speeds also typically mean low severity in the event of a crash.
  - Research performed in Peoria, IL suggests by modifying the angle of channelized right turn lanes may help improve overall safety performance. By implementing these changed to right-turning geometric, it was estimated that crashes could be reduced by as much as 44 percent.
- **Bump Outs** –Right-turn geometrics improvement is intended to make a pedestrian waiting to cross the street more visible without having to walk into the roadway. Extending the curbs, shown in Figure 5-33, would provide greater visibility for approaching vehicles and non-motorized individuals using the sidewalks to cross the street.
- **High-Visibility Pedestrian Crossing** – Replace existing crosswalk with higher-emphasis ladder-style design as they are more eye-catching and distinct from other pavement markings. Based on aerial imagery, the existing pavement markings appear distressed and faded.
  - Research that studied high-visibility crosswalks saw an estimated 40 percent reduction in crashes involving pedestrians.

Figure 5-33. Example of pedestrian bump-outs

- **In-Street Pedestrian Signs** – A lower-cost option to improve pedestrian visibility is to use in-street pedestrian signs, shown in Figure 5-34. This improvement creates a narrow "gate" that vehicles must drive through to avoid hitting the signs, typically achieved by reducing travel speeds This is intended to reduce the likelihood of higher-severity crashes if the crossing device is interpreted correctly and drivers are compliant.

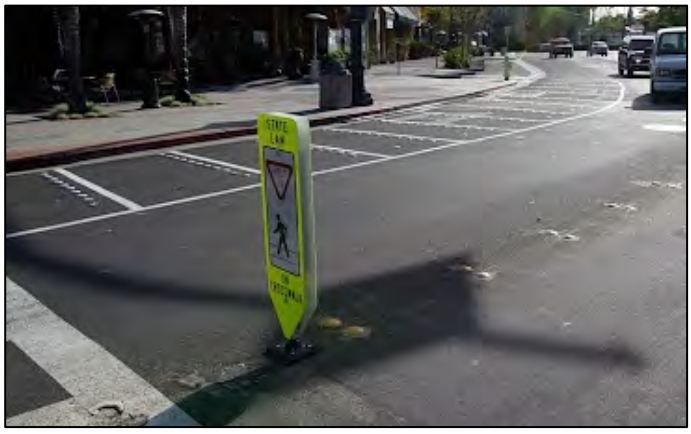


Figure 5-34. In-street pedestrian crossing sign

5.3.2.3 Vollmer Road at Kedzie Avenue

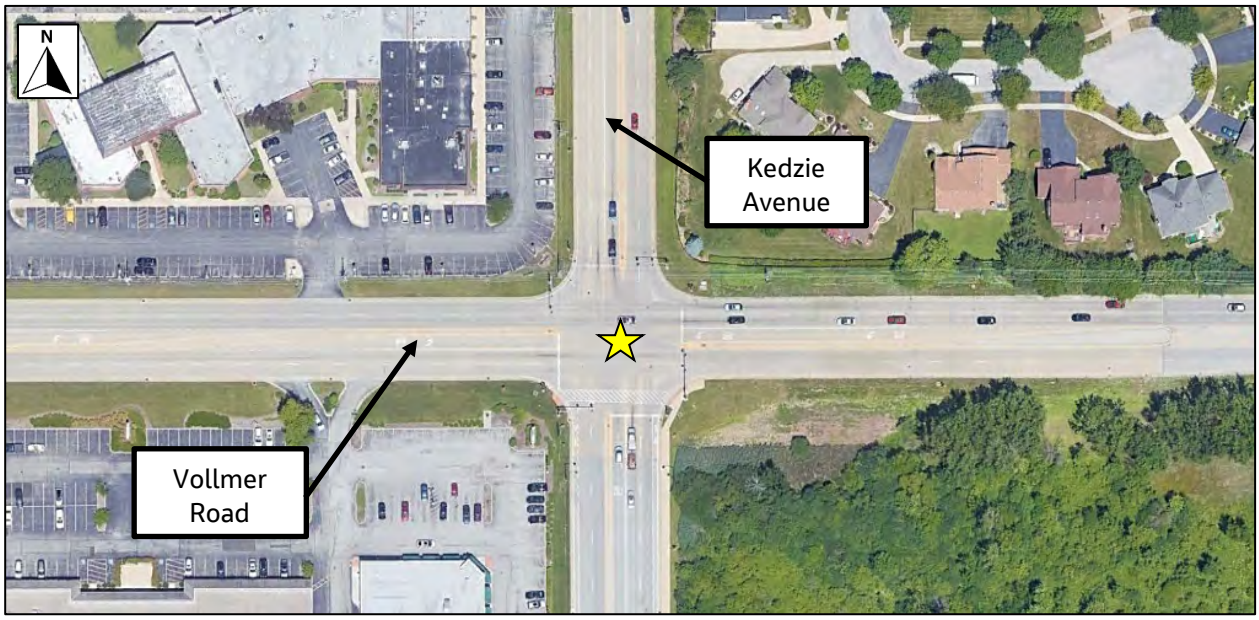


Figure 5-35. Vollmer Road at Kedzie Avenue

Intersection Priority Rank - County Jurisdiction: #3

Emphasis Areas: Pedestrians & Bicyclists, Intersections

The third highest priority location for county routes is the intersection of Vollmer Road and Kedzie Avenue, shown in Figure 5-35. This location did not specifically receive any public comments however there were 62 reported crashes at this signalized intersection. Table 5-18 provides the crash history. The predominant crash types observed were rear end and turning which combined account for nearly 74 percent of the total crashes.

Although the crash data does not show any bicyclists crashes, the intersection has inconsistent bicyclist facilities. The south leg of the intersection has bike lanes on both sides of Kedzie Avenue. However, the bike lanes do not continue on any of the other three legs.

Table 5-18. Vollmer Road at Kedzie Avenue Crash History (2015-2019)

Crash Type	Crash Severity					*Total*	*KAB %*	*KABCO %*
	Fatal (K)	A-Injury	B-Injury	C-Injury	PDO			
Angle	0	0	0	1	4	*5*	*0.0%*	*39.0%*
Rear End	0	0	0	2	2	*4*	*0.0%*	*31.0%*
Fixed Object	0	0	0	0	2	*2*	*0.0%*	*15.0%*
Turning	0	0	1	0	1	*2*	*100.0%*	*15.0%*
Total	**0**	**0**	**1**	**3**	**9**	***13***	***100%***	***100%***

The improvements at the signalized intersection focus on traffic operations and pedestrian enhancements. This intersection has one marked crosswalk on the southern leg and only has a sidewalk on the southeast quadrant along Kedzie Avenue. The improvements and ideas for implementation are described as follows:

- **Signal Retiming** – Suggested on some of the priority intersections, retiming existing traffic signals is intended to optimize traffic flow and assign right-of-way using various inputs such as approach volumes and lane configuration for times of the day. With current technology, some agencies have the ability to evaluate and retime signal cycles from a centralized traffic control center. This allows for a streamlined process to correct any observable issues.
- **Leading Pedestrian Interval** – This is the same improvement that is proposed at Western Avenue/Vollmer Road and Flossmoor Road/Kedzie Avenue. Coordination with Cook County is highly recommended since there is interest from the county to implement multiple LPIs along Flossmoor Road and Vollmer Road. This location is similar to the other signal mentioned in a way that retiming the signals to allow for pedestrians to get a head start of crossing the road.
  - A safety analysis of LPI implementation in the City of Chicago documented an estimated 17 percent reduction of total crashes for all severities and nearly a 30 percent reduction in crashes involving pedestrians.
- **New Sidewalks** – Only the east side of the south leg of Kedzie Avenue has a sidewalk. With many retail locations on the west side of Kedzie Avenue, a sidewalk on either the north or south side of Vollmer Road would be beneficial to both pedestrians and bicyclists.

5.3.3 Municipal Jurisdiction Priority Intersections

5.3.3.1 189th Street at Springfield Avenue

Intersection Priority Rank - Municipal Jurisdiction: #1

Emphasis Areas: Pedestrians & Bicyclists, Intersections

Figure 5-36 shows the highest scored municipal jurisdiction location is 189th Street at Springfield Avenue. This high priority intersection is uncontrolled and is located near the northwestern corner of the Village of Flossmoor boundary. Crash history is described in Table 5-19 and consists of six angle crashes.

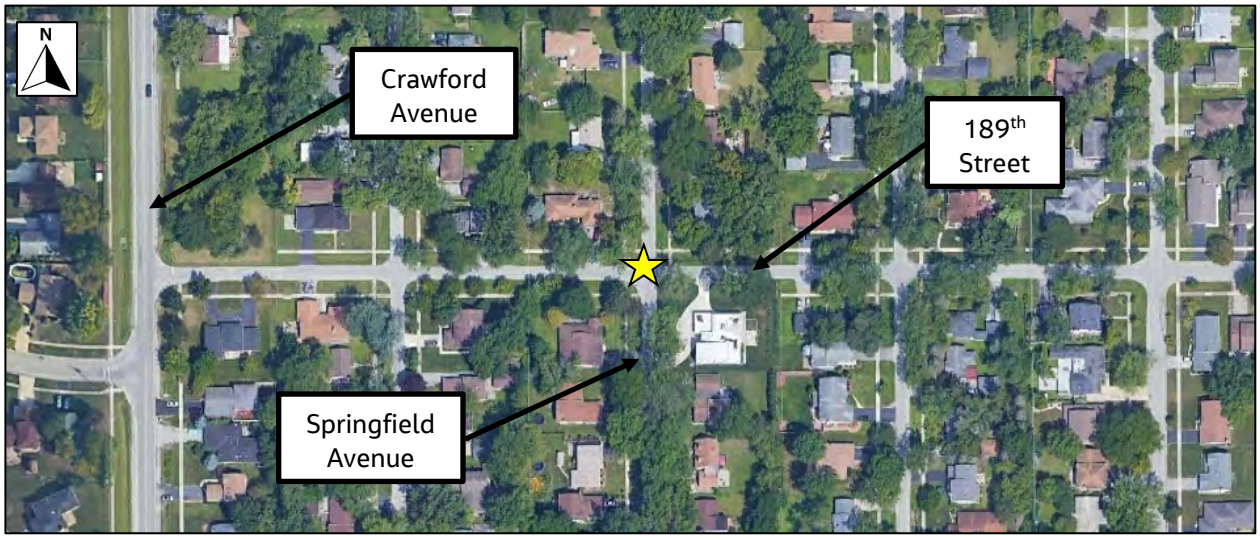


Figure 5-36. 189th Street at Springfield Avenue

Considering that all of the crashes at this location are angle and the lack of a traffic control device on all four legs of the intersection is compelling. Due to this, one of the two countermeasures suggested focuses on implementing some kind of traffic control device.

Table 5-19. 189th Street at Springfield Avenue Crash History (2015-2019)

Crash Type	Crash Severity					*Total*	*KAB %*	*KABCO %*
	Fatal (K)	A-Injury	B-Injury	C-Injury	PDO			
Angle	0	0	2	0	4	*6*	*100.0%*	*100.0%*
Total	**0**	**0**	**2**	**0**	**4**	***6***	***100%***	***100%***

Improvements at this intersection are part of a number of pedestrian- and intersection-focused improvements in residential areas in Flossmoor. This location did not receive any public comments. However, the recommendations support the overall message of pedestrian safety and speed management on residential streets. Additionally, it was mentioned during steering committee meetings that residential areas are a concern due to the lack of traffic control devices on intersections like 189th Street and Springfield Avenue.

- **High-Visibility Pedestrian Crossing** – Install higher-visibility, ladder-style designs on all four legs as they are more eye-catching and distinct from other pavement markings. Based on aerial imagery, there are no pavement markings currently present at this intersection.
  - Research that studied high-visibility crosswalks saw an estimated 40 percent reduction in crashes involving pedestrians.
  - As this improvement was mentioned on many previous priority intersections, it could be considered as a systemic project.
- **Install Stop Signs or Yield Signs**– Converting an uncontrolled intersection to a stop-controlled intersection provides drivers the opportunity to determine right-of-way when multiple vehicles approach the intersection at the same time. Yield signs act similarly but are generally installed only on the minor leg. While the overall effectiveness of this countermeasure varies depending on the surrounding environment, a residential intersection such as 189th Street at Springfield Avenue may require a broader traffic operations analysis to consider adding the traffic control device since the intersections along 189th Street are uncontrolled east of Pulaski Road.
  - Research has produced estimates of about 22 percent crash reduction after an uncontrolled intersection receives this treatment.

5.3.3.2 189th Street at Hamlin Avenue

Intersection Priority Rank - Municipal Jurisdiction: #2

Emphasis Areas: Pedestrians & Bicyclists

Figure 5-37. 189th Street at Hamlin Avenue

The second highest priority municipal jurisdiction location is the intersection of 189th Street and Hamlin Avenue, shown in Figure 5-37. There were three total crashes, all being of angle crash type. Table 5-20 describes the crash history below.

Table 5-20. 189th Street at Hamlin Avenue Crash History (2015-2019)

Crash Type	Crash Severity					*Total*	*KAB %*	*KABCO %*
	Fatal (K)	A-Injury	B-Injury	C-Injury	PDO			
Angle	0	0	1	2	0	*3*	*100.0%*	*100.0%*
Total	**0**	**0**	**1**	**2**	**0**	***3***	***100%***	***100%***

This uncontrolled intersection is located two neighborhood blocks to the east of Springfield Avenue and could also be included in the above referenced traffic operations analysis to determine the feasibility of installing at least one set of stop signs along 189th Street to manage speeding vehicles. Another pedestrian-focused recommendation include right-turn geometrics specifically reducing the curb radius on the southwest quadrant. This construction project could also be an opportunity to provide sidewalk connections.

- **Right-Turn Geometrics** – An initial traffic study may be needed to determine which design vehicle will control the minimum curb radius for each corner of the intersection. By reducing the curb radius, turning vehicles will need to slow down even more in order to comfortably maneuver the turn. Lower speeds also typically mean low severity in the event of a crash. A comparison of different curb radii is shown in Figure 5-38 where the decreasing curb radii directly decreases the crossing distance for pedestrians, resulting in less time being exposed in the roadway.
  - Research performed in Peoria, IL suggests by modifying the angle of channelized right turn lanes may help improve overall safety performance. By implementing these changed to right-turning geometric, it was estimated that crashes could be reduced by as much as 44 percent.

- **High-Visibility Pedestrian Crossing** – Replace existing crosswalk with higher-emphasis ladder-style design as they are more eye-catching and distinct from other pavement markings. Based on aerial imagery, the existing pavement markings appear distressed and faded.
  - Research that studied high-visibility crosswalks saw an estimated 40 percent reduction in crashes involving pedestrians.

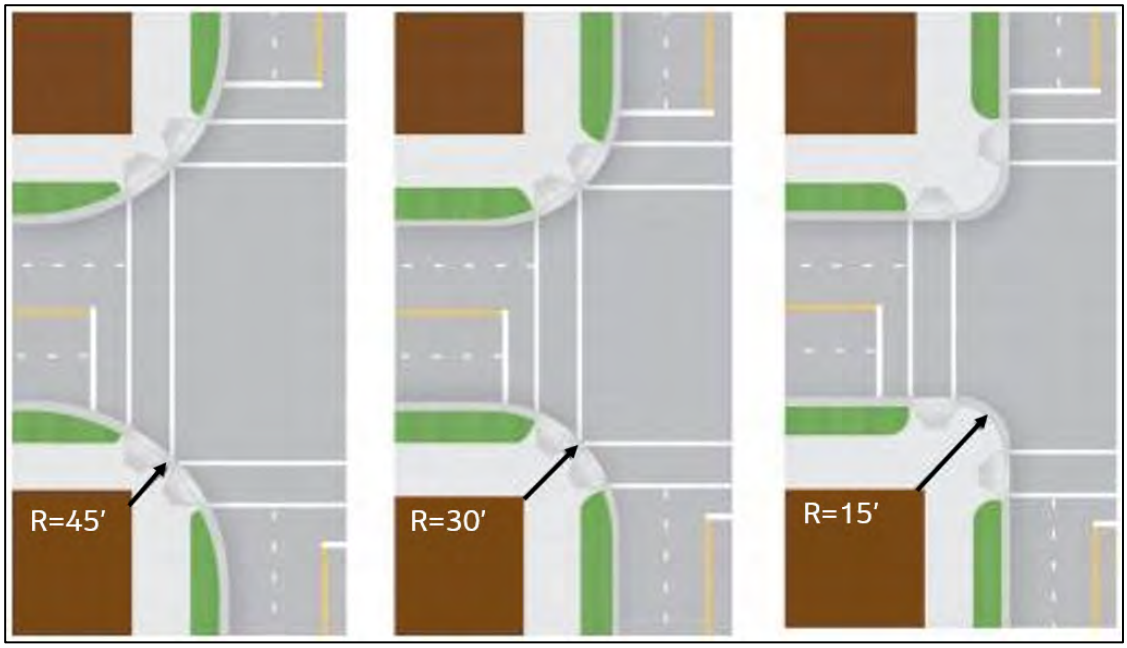


Figure 5-38. Right-turn curb radius tightening example; safety performance increasing left to right

5.3.3.3 Argyle Avenue at Gordon Drive

Intersection Priority Rank - Municipal Jurisdiction: #3

Emphasis Areas: Pedestrians & Bicyclists, Speed Management

The intersection of Argyle Avenue and Gordon Drive is the third highest priority municipal intersection. Figure 5-39 shows the large intersection footprint with the green-space planter islands act as a variant type of traffic circle, combined with the large skew angle may create confusion for vehicles arriving at the intersection simultaneously. Adding to the confusion, the intersections directly to the west and directly to the east possess similar footprints but have differing infrastructure and travel paths. To briefly describe the differences, Gordon Drive and Bruce Avenue to the west has similar skews, but there is no raised curb or traffic circle in the middle of the intersection. Gordon Drive and Perth Avenue to the east has a similar traffic circle, but traffic can drive on both sides of the traffic circle, instead of following the counterclockwise travel movements that are present at Gordon Drive and Argyle Avenue.

Table 5-21 shows three angle crashes that occurred during the five-year time period.

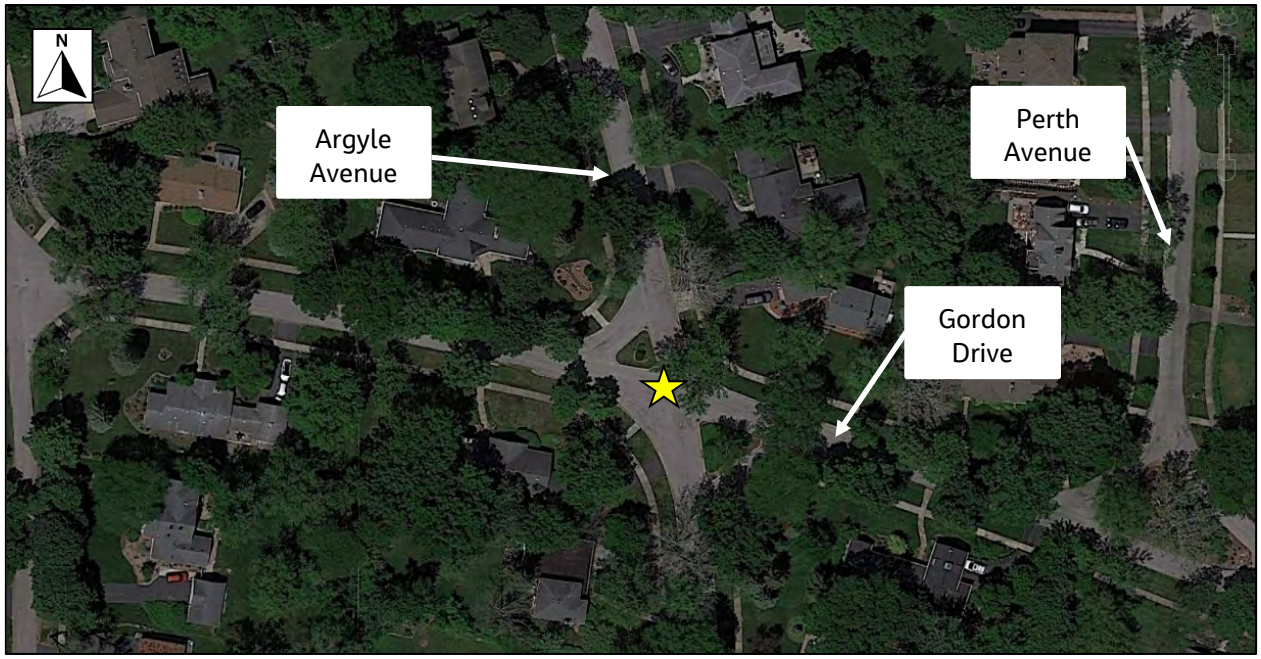


Figure 5-39. Argyle Avenue at Gordon Drive

Table 5-21. Argyle Avenue at Gordon Drive Crash History (2015-2019)

Crash Type	Crash Severity					*Total*	*KAB %*	*KABCO %*
	Fatal (K)	A-Injury	B-Injury	C-Injury	PDO			
Angle	0	0	1	0	2	*3*	*100.0%*	*100.0%*
Total	**0**	**0**	**1**	**0**	**2**	***3***	***100%***	***100%***

There are two recommendations for this location that provide safety improvement for pedestrians and also manage vehicular speeds along Gordon Drive or Argyle Avenue. The traffic circle provides a horizontal deflection that will undoubtably reduce approaching vehicle speeds in order to safely navigate the intersection. Combined with high-visibility pedestrian markings and/or signs, a strong focus on pedestrian safety and mobility is provided.

- **Traffic Circle** – Given the large footprint of the non-traditional intersection, smaller traffic circles with radii around 25 feet could work wonders for this intersection. By placing a traffic circle near the current triangular grass median, enough direction to motor vehicles can be provided to traverse the intersection safely and confidently while also providing greater visibility for residents as they cross the intersection. This improvement could be combined with re-working the curb lines to include bump-outs, providing further positive reinforcement to motorist that they are traveling in the desired path around the intersection.
- **High-Visibility Pedestrian Crossing** – Installing high-visibility, ladder-style design should improve this intersection as this improvement is more eye-catching and distinct from other pavement markings. Based on aerial imagery, there are no existing pavement markings on any of the legs of the intersection.
  - Research that studied high-visibility crosswalks saw an estimated 40 percent reduction in crashes involving pedestrians.

6. Implementing the Plan

6.1 Community Safety Champions

Community safety champions are catalysts for change, creating a culture of safety.

To represent the goals of this plan at all levels within the village and to create a culture of safety, champions for safety should be identified. Safety champions are individuals who can affect change within their circles of influence and lead the way in implementing safety strategies. This includes staff at local agencies who create accountability for implementation, elected officials who can advocate for safety policies and activities, educators who are catalysts for change within their schools, business owners and community members who socialize the goals and values of the LRSP, and more. Implementing this LRSP and achieving safety on Flossmoor's roads will be a team effort, and community members and stakeholders have shown that they are dedicated to seeing this through.

Who are our community safety champions?
If you're reading this, perhaps it's you! How might you advocate for safety within your sphere of influence? Are you an educator who can bring this conversation to your classroom? Are you a business owner who can advocate for safe travel to and from your location? Are you a parent who can discuss these goals with your children? To get more involved, contact the Village of Flossmoor Public Works Department.

6.2 Implementation Timeline

Before attempting to determine when countermeasures and strategies can be implemented, it is important to first gain approval of the Village Board to adopt the LRSP to show a sign of commitment to what the plan is recommending. With the sustained desire to continually improve traffic safety, attempting to maximize resources becomes an even more crucial task as it relates to establishing implementation schedules. There are not enough resources for everything in the plan to be implemented immediately, so it often takes time for funds to be become available or a new window for federal, state, or local grant programs. Intergovernmental coordination regarding the times at which the various program cycles repeat is a crucial step in the resource allocation process in addition to the ongoing communication while assessing the various levels of complexity for countermeasures and strategies while evaluating the different stages of phasing and construction.

6.3 Funding the Plan

The following subsections outline some opportunities that have been identified for funding and supporting the recommendations presented in the LRSP.

6.3.1 Capital Improvement Plan Programming

Key players: Public Works, Finance Department, Village Board

Target emphasis areas: Pedestrians & Bicyclists, Intersections

Most local governments maintain a budget for capital improvements which gets disbursed based on identified needs and long-term plans defined in a capital improvement plan (CIP) while provided oversight with best management practices. Capital investments involve purchasing or constructing high-cost assets which will provide value over their lifespan. Many of the infrastructure recommendations presented in this plan would be eligible for such funding and may be considered for future planning budgets in the Village of Flossmoor's Capital Program, pending available local funding.

For upcoming capital improvement budgeting cycles, this plan and its recommendations should be considered for funding. This action would recognize the direct value that these improvements offer to residents including reductions in crashes, improvements to business performance, and greater health for all road users.

Projects which may be strong candidates for funding through alternative programs described in the following sections should not be prioritized for CIP funding. Instead, this funding should primarily focus on general projects which may serve multiple needs within the community and which don't fit into one of the specific categories of the special funding programs. Where possible, recommendations may be incorporated into existing capital investment projects. For example, if funding has already been allocated for modernizing a traffic signal, a recommendation for improved left turn phasing may be incorporated into this project with minimal effort, realizing efficiencies and producing a faster turnaround.

6.3.2 Sustained Traffic Enforcement Program

Key players: Police Department, Schools

Target emphasis areas: Speed Management, Young Road Users

Sustained Traffic Enforcement Program (STEP) grants have a primary focus on enforcement activities intending to change driver behavior. Three main behavioral issues that STEP efforts aim to address are impaired driving, speeding/aggressive driving, and seat belt usage. These enforcement campaigns are often targeted at specific times of the year and times of the day, such as weekend nights, major local events, or holidays where alcohol-involvement or other dangerous behaviors may have an elevated contribution to crashes. The intention of this type of enforcement campaign is to reduce the frequency of impaired driving and speeding/aggressive driving, while increasing the usage of seatbelts, child restraints, and helmets.

Because the Village of Flossmoor experiences some of these driving behavior patterns, the STEP grants may be a good opportunity to obtain funding to reduce dangerous driving behaviors within the village. This program provided up to $22,750,000 in FY 2021 with award amounts dependent on applicant's need.

6.3.3 Highway Safety Improvement Program—Local and State Systems

Key players: Public Works, CCDOTH, IDOT District 1

Target emphasis areas: Pedestrians & Bicyclists, Speed Management, Intersections

Applications for Highway Safety Improvement Program (HSIP) funding can be submitted for both local and state system projects. The intent of this program is to reduce the number of fatalities and serious injuries on all public roadways by selecting infrastructure safety projects using a data-driven approach. Applicants are required to submit a project summary that illustrates how proposed improvements will reduce the frequency of targeted crash types. All improvements must be safety-related and provide the project location with a satisfactory benefit-cost ratio.

This type of funding opportunity would allow the village to propose on a variety of projects including location-specific improvements (e.g., implementing delineating pavement marking at Carroll Parkway/Evans Road/Gardner Road traffic circle) or system-wide improvements (e.g., upgrading all signage to current Manual on Uniform Traffic Control Devices [MUTCD] standards). Coordination with the IDOT District 1 is suggested throughout the process of developing and submitting a proposal for HSIP project funding.

Solicitation for both local system and state system applications is generally released around March or April of each year. More information can be found at IDOT's HSIP website.

6.3.4 Local Technical Assistance Program/Statewide Transportation Improvement Program

Key players: Public Works, CMAP, CCDOTH, IDOT District 1

Target emphasis areas: Pedestrians & Bicyclists, Speed Management, Intersections

Local Technical Assistance Program (LTAP) opportunities are available to improve roadway safety at the local level where some municipalities may otherwise be overlooked in favor of state-owned routes that have considerably higher volumes. Addressing the needs on the local system, which makes up 94% of public roads in Flossmoor, is imperative if the overall goal is to bring fatalities and severe injuries to zero.

Another funding source that is not purely focused on safety upgrades is the Statewide Transportation Improvement Program (STIP). In the more traditional transportation projects, there are frequently opportunities to implement safety aspects into the existing plans without having substantial impacts to the original transportation project. This process can be thought of as a safety-focused enhancement that is added to the project that did not originally include safety characteristics.

For both the STIP and LTAP, the Village of Flossmoor should coordinate with CMAP, Cook County, and IDOT District 1 to prioritize and take advantage of projects that might already be in progress and present opportunities.

6.3.5 Additional Funding Resources

In Table 6-1, several additional funding resources are provided along with information about what types of projects they are intended for and how to learn more. In addition to reviewing funding opportunities in this document, it is recommended that the Village of Flossmoor identifies a staff member to explore all these resources in greater depth, helping improve awareness and familiarity within the agency to guide the application and implementation process for each recommended project. Additionally, with continued collaboration with and regular participation in related organizational activities with the South Suburban Mayors and Managers Association (SSMMA), CMAP and other organizations with similar activities, Village staff can evaluate and target funding sources that could benefit funding the countermeasures and strategies.

Table 6-1. Additional resources for funding recommended projects

Funding Source	Application	Description
Motor Fuel Tax (MFT)	Resurfacing, street maintenance, matching funds for grant and loan programs.	Standard state-levied tax income for transportation capital investments. More information
Invest in Cook	Transportation infrastructure projects.	$8.5 million grant program to help local governments advance their transportation projects.

Funding Source	Application	Description
		More information
Transportation Renewal Fund	Highway maintenance, construction, bridge repair, congestion relief.	Newly created fund through Rebuild Illinois for state and local governments. More information
Tax Increment Financing (TIF) District	Sidewalk or street improvements within a defined geographic area.	Reinvestment of property taxes within "blighted" areas, per Illinois' state definition. More information
Business Development District	Sidewalk or street improvements within a defined geographic area.	Reinvestment of sales taxes within "blighted" areas, per Illinois' state definition. More information
Access to Transit Program (Regional Transportation Authority)	Small-scale capital projects that improve pedestrians' and bicyclists' access to public transportation.	Regional Transportation Authority program for Phase I engineering of small-scale capital projects that improve pedestrians' and bicyclists' access to public transportation. More information
Surface Transportation Program (STP) Local Program and Shared Fund	Broad range of eligible transportation projects that cost at least $5 million.	CMAP/Local Council of Mayors fund for supporting larger-scale regional projects that address regional performance measures and the goals of ON TO 2050. More information
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	Transportation infrastructure, bicycle and pedestrian improvements near transit.	Federally funded program for surface transportation improvements designed to improve air quality and improve congestion. More information
Transportation Alternatives Program	Non-motorized transportation projects.	Federally funded program for surface transportation improvements design to support non-motorized transportation. More information
Illinois Transportation Enhancement Program (ITEP)	Bicycle and pedestrian facilities, historic preservation, streetscape projects, and environmental mitigation.	IDOT program for funding bicycle and pedestrian facilities, historic preservation, streetscape projects, and environmental mitigation. More information
Local Highway Safety Improvement Program (HSIP)	Roadway safety projects.	IDOT program for funding data-driven traffic safety-related infrastructure projects. More information

6.4 Forward Thinking

LRSPs and their supporting materials are intended to be a continually available reference tool for local entities. Once complete, it should not be lost on a bookshelf until it becomes time for an update. The LRSP and its associated documents should be considered and referenced for guidance on all safety-focused projects. When the time comes for updating the LRSP, it should also be considered an opportunity for evaluation. Consider which aspects of the LRSP and its supporting documents were and were not useful? Let those answers guide the update and allows the next version to advance the continual improvement of the transportation system's needs.

Additionally, it is recommended that the village create a traffic safety working group that tracks the safety performance of the roadways. This group should be like the steering committee with representation from the different village departments and community stakeholders. The group should monitor the progress implementing the LRSP recommendations and be a forum where traffic safety issues that arise are discussed. This group would be responsible for the continued monitoring of locations where improvements are made, appropriately evaluate safety performance and ensure that the most current roadway condition and performance information is readily available for future use.

Furthermore, consider evaluating any projects that have been implemented. Such an assessment turns every investment into a learning opportunity to implement strategies more effectively in the future. In the coming years, metrics should be tracked to determine the effectiveness of this plan and its execution. Helpful metrics that should be tracked include:

- **Crash data.** Track the frequency, severity, and type of crashes that occur after implementation of each project to determine effectiveness and to inform future use of such countermeasures.
- **Pedestrian and Bicycle Activity.** Keep an eye on active transportation modes and track how the installation of pedestrian- and bicycle-oriented facilities impact how community members travel. Increases in safe use of active modes indicates a great value for the community. Additionally, measuring bicycle ridership along certain routes within the Village where improvements are implemented is one way measure impact.
- **Community Sentiment.** As safety improves, often community sentiment will as well - which can be gathered via public online surveys. As drivers and other road users feel safer in their daily lives, this can provide a host of impactful community benefits.
- **Finances.** Avoiding crashes and saving residents from the health and financial impacts of roadway crashes can also produce financial benefits for the whole Village by minimizing the impacts of safety issues on local businesses, reducing the strain and cost of emergency services, and more. A different financial metric that can be tracked would be the success of securing grants or funds that are dedicated to improving roadway safety. In many cases, these opportunities provide 90% of the cost of the project with a 10% local match and are a great avenue to secure funding for safety-focused improvements.

Appendix A - Communication and Outreach Strategies

Photo Credit: Village of Flossmoor

Village of Flossmoor - Local Road Safety Plan

Communications and Outreach Strategy

JUNE 13, 2022

PREPARED FOR

Chicago Metropolitan Agency for Planning (CMAP) and Village of Flossmoor

FLOSSMOOR

Welcoming. Beautiful. Connected.

Project Introduction and Background

This Communications and Outreach Strategy (COS) identifies the public participation methods and tools that will be used during the development of the Village of Flossmoor Local Road Safety Plan (LRSP). The Village of Flossmoor LRSP is a review of all the roads within the community and contains recommendations for all relevant roadway infrastructure improvements, explaining how these recommendations were developed and why they are important for the future of the community. The LRSP also includes implementation strategies and recommended traffic safety countermeasures. Included below are the topics the Village of Flossmoor LRSP project will seek to explore and address:

- Roadway safety
- Crash data analysis
- Bicycle and pedestrian safety
- Access to transit
- Safe Routes to School
- Complete Streets
- Enforcement strategies
- Equitable enforcement
- Engineering (roadway safety countermeasures)
- Education and outreach
- Emergency response
- Funding opportunities
- Prioritized investments

The Chicago Metropolitan Agency for Planning (CMAP) is providing technical assistance and oversight to the Village of Flossmoor during development of their LRSP. CMAP, in collaboration with the Village of Flossmoor, recognizes that inclusive community engagement is not only essential to the planning process but improves project decision-making, strengthens community partnerships, and provides underrepresented populations the opportunity to learn about and provide input about transportation programs that affect their lives. This COS is designed to be inclusive of all Village of Flossmoor residents and outlines outreach tools, strategies, and key project stakeholders. At the end of the project, this document will be used as the framework for a comprehensive memorandum summarizing all outreach conducted during the development of the LRSP.

Anticipated Outreach Activities

The following describes the outreach activities that are anticipated throughout the development of the LRSP. Each activity outlined below aligns directly with the plan's Scope of Work and timeline. This COS is meant to establish a baseline of activities but is by no means inclusive of all outreach efforts that may be implemented. As the project progresses, the team will work to evaluate and realign outreach efforts, as necessary, to best fit the needs of the Village of Flossmoor.

Stakeholder Identification Procedure

A stakeholder is anyone who could be affected by the project and has a stake in its outcome. In order for the LRSP to be successful, it is critical to receive input from all project stakeholders, including traditionally

underserved populations who are often underrepresented in public participation efforts. The project team will utilize CMAP's extensive research on the socioeconomic, demographic, economic, environmental, land use, and transportation conditions of the Village of Flossmoor to assist in the identification of stakeholders, as well as rely on input from Village of Flossmoor officials.

Stakeholders for this project may include, but not be limited to, the following:

- Residents
- Business owners
- Institutions (churches, school boards, etc.)
- Advocates for community and historic interests
- Special interest groups (environmental, etc.)
- Elected/community officials
- Public Works officials
- Government and transportation agencies
- Transportation system users
- Chambers of Commerce
- Neighborhood groups
- Bicycle and pedestrian advocates
- Students
- Economic development professionals
- First responders/EMS
- Others with an interest in or potentially affected by the project

Steering Committee

The project team will work with the Village of Flossmoor to form and facilitate a Steering Committee to help guide the development of the Village of Flossmoor LRSP. The Steering Committee will be responsible for providing input on project direction, helping to identify additional stakeholders, reviewing key deliverables, assisting with community outreach, and attending project meetings (both virtually and in person, when possible).

The Steering Committee will include representation from the "5E's" of safety. The 5E's of safety define the broad stakeholder partners who care about safety and are responsible for making the roads safe for all users. Stakeholders from the 5E's typically fall into one of the following categories:

- **Engineering** - highway design, traffic, maintenance, operations, and planning professionals
- **Enforcement** - state and local law enforcement agencies
- **Education** - prevention specialists, communication professionals, educators, and citizen advocacy groups
- **EMS** - first responders, paramedics, fire, and rescue
- **Equity** - community representatives who understand the connection between affordable mobility and equity; ultimately, these are a community's 'end-users' - transit commuters/labor workforces, teenagers/students, business owners and their consumers, etc.

While the Steering Committee will be engaged throughout the LRSP process, four (4) committee meetings will be scheduled at key points in the planning process to receive timely and meaningful input from members. All Steering Committee meeting materials will be uploaded to the project website.

Steering Committee Meetings

Meeting	Purpose/Goal of Meeting
#1	▪ Introduce the LRSP ▪ Introduce the project team ▪ Establish role and expectations of the Steering Committee ▪ Review and obtain input on the Draft COS ▪ Establish goals and objectives of the LRSP ▪ Discuss Next Steps (e.g., ECR)
#2	▪ Discuss and provide input on the Existing Conditions Report (ECR)
#3	▪ Discuss and provide input on the Draft Countermeasure and Policy Recommendations Memo (CPRM)
#4	▪ Discuss and provide input on the Draft LRSP

Community Outreach and Engagement

Public Open Houses

Community outreach for the LRSP will include opportunities for broader stakeholder input in the form of public open houses. These large-scale meetings will encourage public attendance and foster public awareness of project progress. These meetings will also provide a forum for general public input, including concerns and comments regarding local road and traffic safety. Two public open houses are anticipated to coincide with major plan milestones. These in-person public meetings will be dependent upon the COVID-19 pandemic. Strategies being considered by the project team to ensure public safety at in-person events during the pandemic include but are not limited to staggered event attendance (e.g., 50 people per one-hour time slots), selection of outdoor venues, and/or providing an alternative online/virtual engagement option.

Public Open Houses

Meeting	Purpose/Goal of Meeting
#1	▪ Introduce the LRSP ▪ Receive input from community on local road and traffic safety concerns
#2	▪ Present and receive input on the Draft LRSP

The open houses will be held at locations within the project area that are convenient and accessible to the public. The project team will work with the Village of Flossmoor to identify prime locations and times to ensure maximum public participation in the open houses. For those that are unable to make the in-person public open houses, recordings of the events will be made available on the project website for the public to view at their convenience.

To ensure meaningful stakeholder participation at each of the open houses, the project team will utilize the identified project stakeholder list to advertise the events. The project stakeholder list is not a set list but instead will continue to be expanded upon through the life of the LRSP process to include newly discovered stakeholders. Additionally, the project team will strive to eliminate gaps in community outreach efforts by

looking for organizations to assist in reaching minority and other traditionally underrepresented groups in planning. This outreach may include reaching out to:

- Leaders of various churches/congregations
- Neighborhood group representatives
- Staff members of service providers in the area
- School administrators
- Immigrant-related service providers (e.g. ESL education centers, other assimilation services)
- Latino-specific service providers (e.g. Latino business associations or community organizations)

The project team, with the assistance of the Steering Committee, will make every effort to ensure the project open houses are representative of the demographics of the community.

Pre-existing Community Meetings

While the project team will host two specific project open houses to gather public input on the LRSP, the team will also utilize in-person or virtual pre-existing community meetings to provide stakeholders with project information and input opportunities.

Village of Flossmoor Community Meetings to be utilized include:

- Village Board Meetings
- Parent and/or Teacher Meetings
- HOA/Neighborhood Meetings
- Student Group Meetings or Targeted Classes at the Schools
- Community Advocacy Groups (i.e., Bicyclist Groups)
- Religious or Social Service Agency Meeting

Public Outreach Summary Memorandum

A public outreach summary memorandum will be prepared. It will be developed using this document as its core and amended to include detailed descriptions of actual outreach activities. The document will include all participants, meeting agendas, feedback (e.g., survey results and comments) and contacts, so that the community outreach record will be transparent.

LRSP Presentation and Adoption

The project team will create a pre-final draft of the LRSP by incorporating and consolidating comments from the open houses, Steering Committee, Village of Flossmoor, and CMAP. The pre-final Draft LRSP will be presented at a public hearing with the Village of Flossmoor Village Board. The project team will collect and revise the LRSP according to feedback from the public hearing and then present the final LRSP to the Village Board for adoption at a subsequent meeting. The final LRSP will be made available to the public electronically via the project website.

Outreach Strategies

Project Website

The LRSP team will create, host, and maintain a project website for the Village of Flossmoor LRSP. This website will be the primary landing page for internet users seeking information about the LRSP and may be posted to project partner websites. The LRSP website will consist of the following primary components:

- LRSP Overview
- FAQs
- Community Outreach Materials
- Meeting Materials and Minutes
- Link to Online Engagement Opportunities (e.g., Survey, Mapping Tool)
- News Coverage
- LRSP Team Contact Information

The anticipated website platform is "Bang the Table".

Online Engagement Opportunities

The project team will utilize an online engagement site using the Bang the Table platform. The site will be accessible across all smart devices, including phones, tablets, kiosks, and personal computers.

Bang the Table provides an online survey tool that allows project stakeholders to share their priorities, explore alternative scenarios, and leave comments about their goals and strategies for the future of their community. This interactive web-tool will be customized for the Village of Flossmoor LRSP. By employing this tool, the project team will be able to engage an even greater number of stakeholders who may be unable to attend the in-person public meetings. Another benefit is that the tool can be used "on the fly" as the project staff meets with community and stakeholder groups throughout the LRSP process.

The project team will utilize the survey engagement tool at two points in the LRSP process.

- The first survey will be designed to collect feedback from stakeholders and the general public on key local road and traffic safety recommendations and concerns. This survey would include the following components:
    - Priority Ranking – Users select top 3-5 local road safety concerns to be addressed in the plan from a pre-determined set of topics.
    - On-line Survey – Users answer a series of questions grouped around the primary topics to be addressed in the LRSP
    - Interactive Map – Users drop pins on areas of interest and/or concern and add comments throughout the project area.
- The second survey will be distributed only to the Steering Committee at the conclusion of the plan and will serve as the method to gain feedback from the Committee on all elements of the outreach plan and strategy.

A hard copy version of both on-line surveys will be created for distribution. The hard copy version of the survey is intended to engage stakeholders who may have limited access to technology or who may feel more comfortable completing a paper survey. The project team will work with the Village of Flossmoor and the

Steering Committee to determine the number of surveys to be printed, where the surveys will be distributed, and which members of the community might prefer this method of participation.

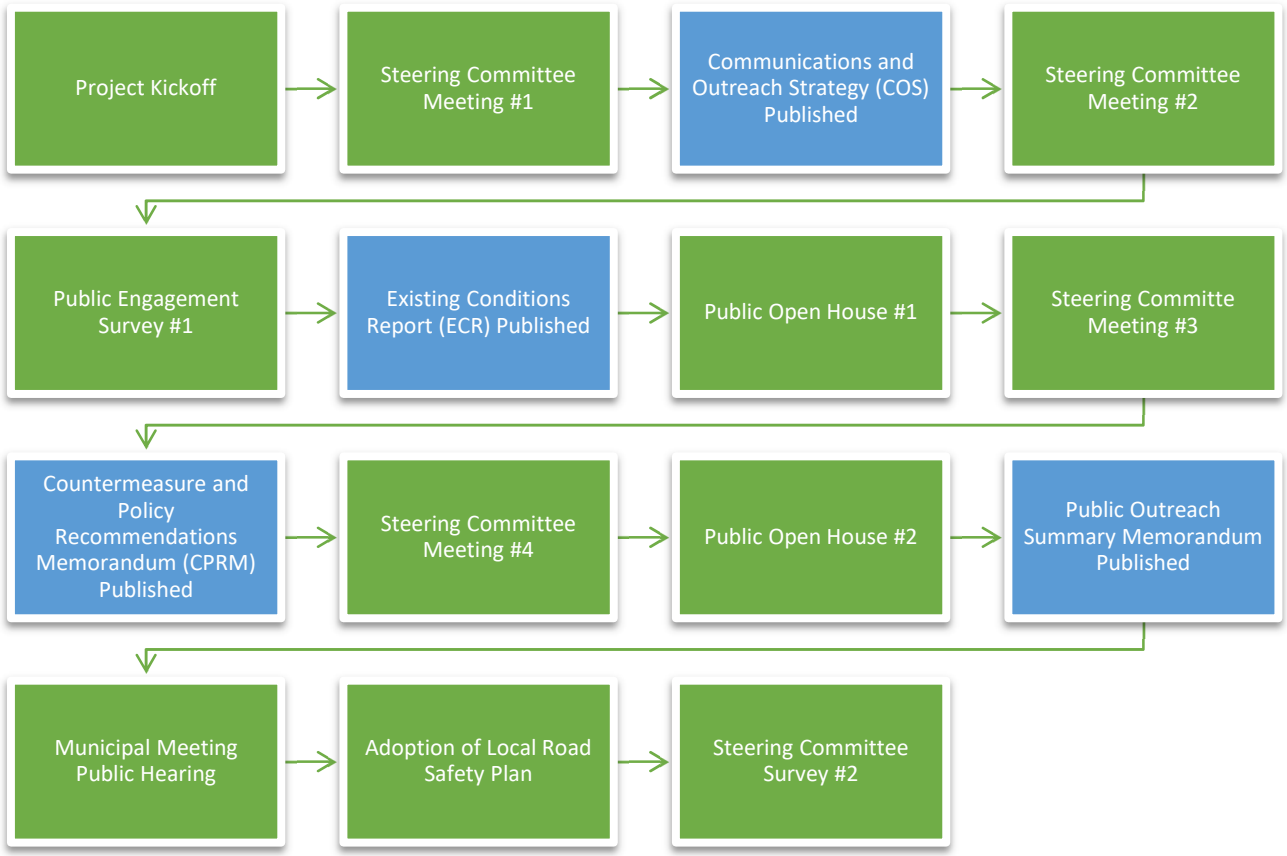
Social Media Outreach

CMAP and the Village of Flossmoor's social media channels such as Facebook, Instagram, and/or Twitter may be used to promote and remind stakeholders of public events/meetings, provide online survey links, as well as inform them of project input opportunities. Social media will not be used to collect public input as the project will not have dedicated social media channels from which project team members can address participant's comments and concerns.

Outreach Schedule

The following outreach activities are identified in the Village of Flossmoor LRSP Project Scope. Exact timing and format of these activities will be determined by CMAP with input from the Village of Flossmoor and the LRSP Steering Committee as the planning process moves forward. Additional outreach activities may also be conducted, as needed.

LRSP Schedule of Community Outreach



Appendix B - Existing Conditions Report

Village of Flossmoor Local Road Safety Plan

Existing Conditions Report

Revision 1

July 2021

Chicago Metropolitan Agency for Planning

Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
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Village of Flossmoor Local Road Safety Plan

Existing Conditions Report

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1. Introduction

1.1 Overview

With a vision to improve its infrastructure and the quality of life of its residents, the Village of Flossmoor has elected to develop a comprehensive Local Road Safety Plan (LRSP). Through the support of the Chicago Metropolitan Agency for Planning (CMAP), the LRSP will foster collaboration with residents and local stakeholders to identify and equitably address the Village's most pressing traffic safety concerns—for all road users.

LRSPs take a proactive approach to understanding and addressing unmet traffic safety needs of local residents. As communities grow and evolve, so do their transportation facilities and movement patterns, and so must their plans to achieve safe operations. By leveraging contemporary traffic safety research, historical safety performance data, and the invaluable insights of the residents who drive, walk, and bike on these facilities every day, the LRSP and its Steering Committee will identify practical goals for the Village's roadway facilities as well as holistic strategies for achieving those goals.

The goal of continuous advancement of traffic safety represented in an LRSP must be based on a complete understanding of the target transportation network, such as is provided in this existing conditions report. This report represents a thorough, data-driven evaluation of the current state of the Village of Flossmoor's roadway facilities in terms of traffic safety performance. It is one of the first components of the LRSP process, providing a technical foundation and a baseline for the planning process. This report also provides residents with an inside look at the Village's roadway network, a transparent summary of its design, geographic and jurisdictional distribution, and historical safety performance.

1.2 Purpose

The Village of Flossmoor is located on the south end of Cook County, south of Chicago's city limits (Figure 1-1). Home to nearly 10,000 residents, the Village is 3.8 square miles, with over 3,400 housing units. To help better serve the needs of its residents, the Village of Flossmoor updated its Strategic Plan in 2017 and outlined the following two major objectives:

1. Establish strategic goals and organizational priorities for the next 5 years.
2. Develop an action plan guided by the established strategic goals and priorities.

In order to continue building on the vision of the 2017 Strategic Plan, the Village is embarking on the development of its first LRSP, a powerful initiative that will become a model for other municipalities across the CMAP service area. Through this initiative, the Village of Flossmoor will develop a practical and actionable standalone safety plan that will be used in the coming years to improve transportation safety for all road users.

While moving forward with the LRSP to identify and implement new and exciting strategies to improve safety for all road users, it is important to allow past efforts to inform decision making. Through past efforts initiated by the Village of Flossmoor Board, the downtown area near the crossing of Sterling Avenue and Flossmoor Road, surrounding the Metra train station, has undergone redesign considerations. In response to patterns of poor safety as well as traffic performance in the area, Phase 1 engineering was conducted to evaluate potential improvements of the complex intersection near the station, including through the installation of an advanced roundabout, modern standard intersection design, and minor features such as bump-outs. At this point, none of these design alternatives has been implemented, though the pursuit of improved safety performance for this location will continue through the LRSP process.

To provide a strong background for the LRSP, this report will explore in-depth the transportation environment of the Village of Flossmoor. First, an overview of historical traffic safety performance will be presented, illustrating crash patterns, hot spot locations, and opportunities for safety improvement. This information will then be supplemented with a comprehensive overview of the Village's unique context, including its transportation network such as roads, sidewalks, and public transportation facilities, as well as its demographic and land-use data. This crucial information on the state of the Village's current transportation system will lay the groundwork for the LRSP, which will be tailored to its community's unique needs, objectives, and aspirations.

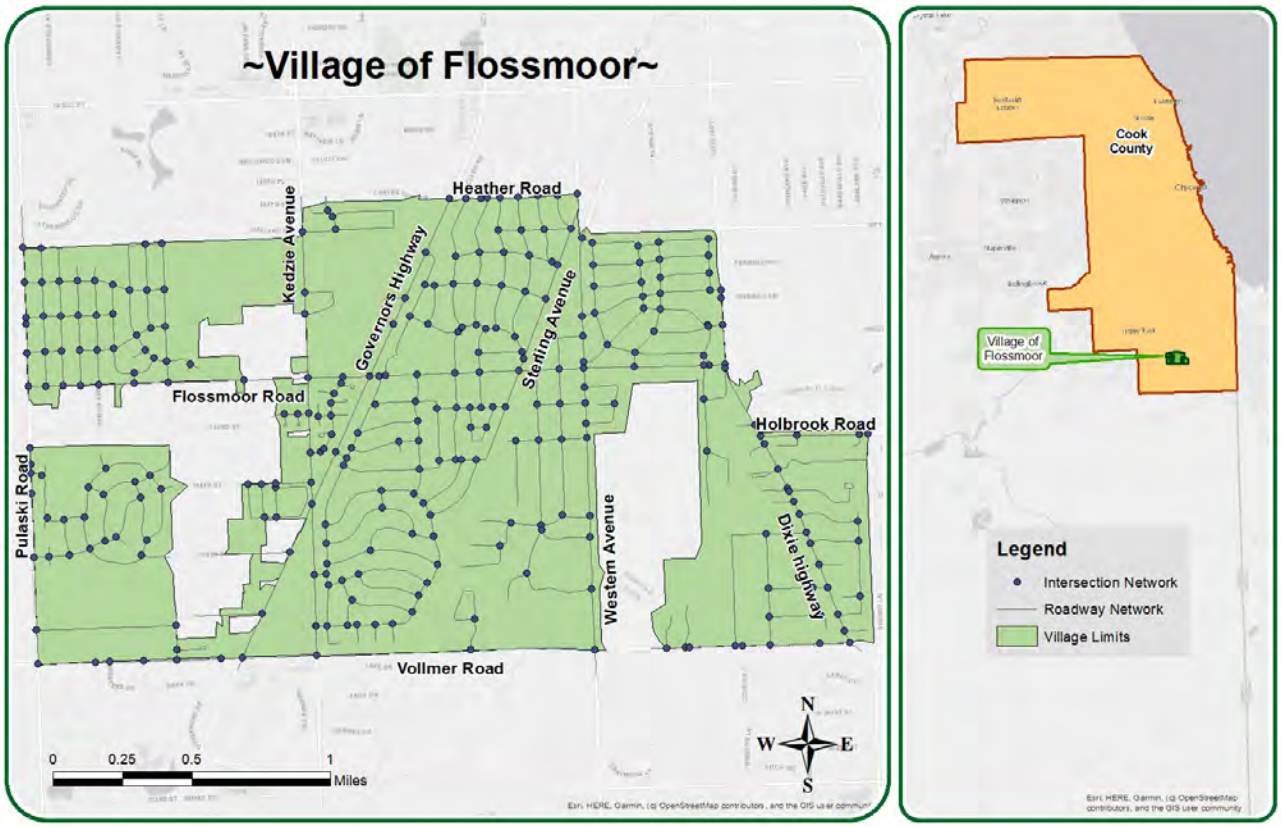


Figure 1-1. Village of Flossmoor Location Map and Roadway Network

2. Safety Evaluation

Before beginning the safety planning process, it is important to develop an understanding of the safety performance of Flossmoor's roadway network under current conditions. The most essential metric used to quantify this performance level is crash frequency data—that is, the number of crashes of a given type and severity over the course of a year. Though no crash is an acceptable outcome, LRSPs commonly focus on higher-severity crashes, such as fatal and injury (F+I) crashes. This prioritizes treatments that can save more lives and minimize crash-related injuries, while also striving to minimize crashes that only result in property damage (PDO). For this reason, many figures in this report will distinguish between F+I crashes and total (i.e., F+I and PDO) crashes.

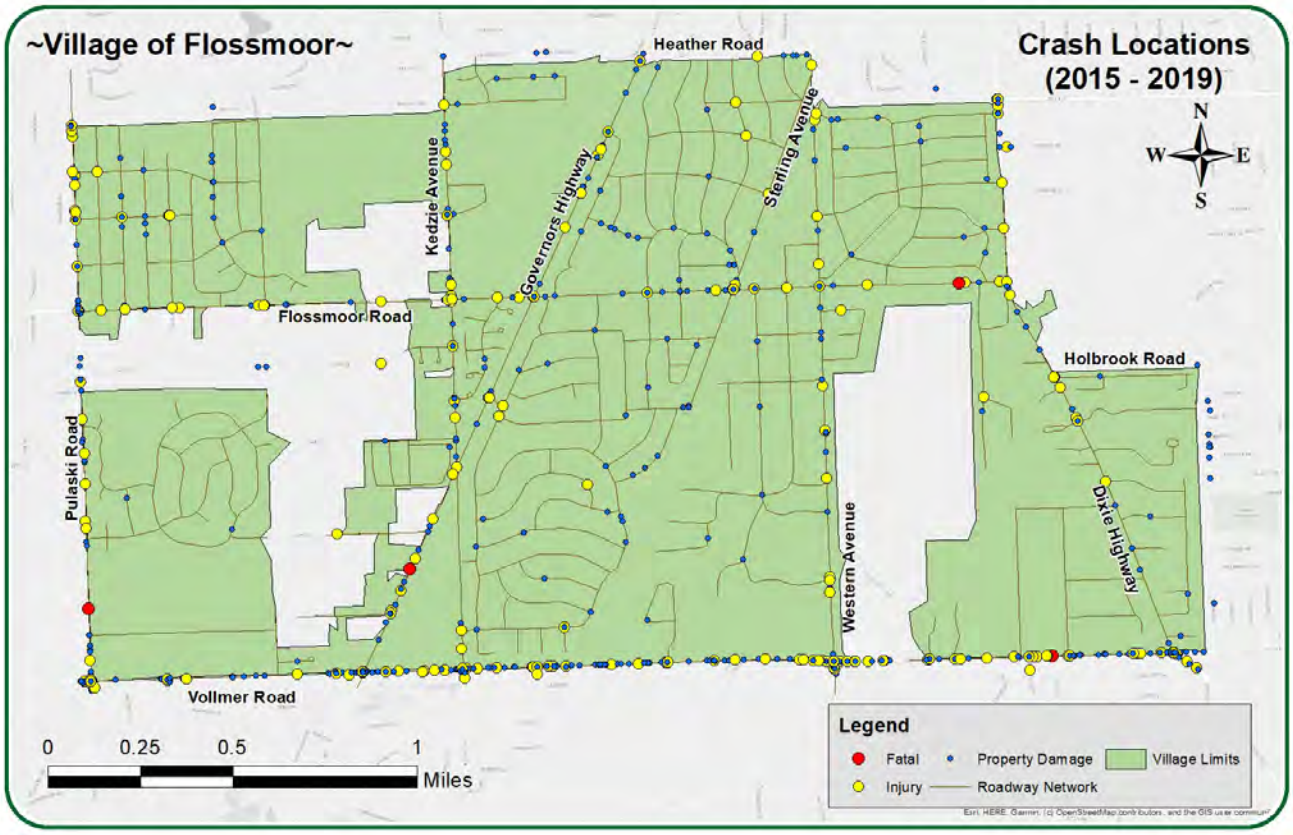
All crash data analyzed and presented in the following sections were obtained from the Illinois Department of Transportation and were sourced from the Illinois State Police and other local and regional enforcement agencies. Crash data represents the years of 2015 to 2019, was received on May 12, 2021, and was used as-is for analysis purposes and should be interpreted accordingly. To capture a representative sample of crashes for the purposes of this analysis, a 200-foot buffer was used to capture all crashes within the limits of the Village of Flossmoor as well as those immediately outside the limits. This ensures that crashes that occurred on all legs of major intersections on the border of the Village are accounted for in the analysis.

2.1 Crash Data Overview

Between 2015 and 2019, 1,333 total motor vehicle crashes occurred within the Village of Flossmoor (Table 2-1). Four of these crashes were fatal:

- Five fatalities resulted from the four fatal crashes.
- Three fatal crashes occurred with clear weather conditions, and one occurred during rain.
- One fatal crash involved a turning vehicle, and three involved vehicles striking a fixed object.
- Three fatal crashes involved dark lighting conditions and one with daylight conditions.
- One of the five fatalities involved drug impairment.

An additional 365 crashes resulted in one or more injuries between 2015 and 2019 in Flossmoor. The crash location map (Figure 2-1) shows four red dots representing the fatal crashes that occurred along Governors Highway, Pulaski Road, Flossmoor Road, and Vollmer Road. The most notable clusters of crashes are along Vollmer Road with the intersections of Pulaski Road, Governors Highway, Western Avenue, and Dixie Highway. As shown in Figure 2-2, annual crash frequency remained fairly consistent, with the most fatal and injury crashes (95) occurring in 2017.



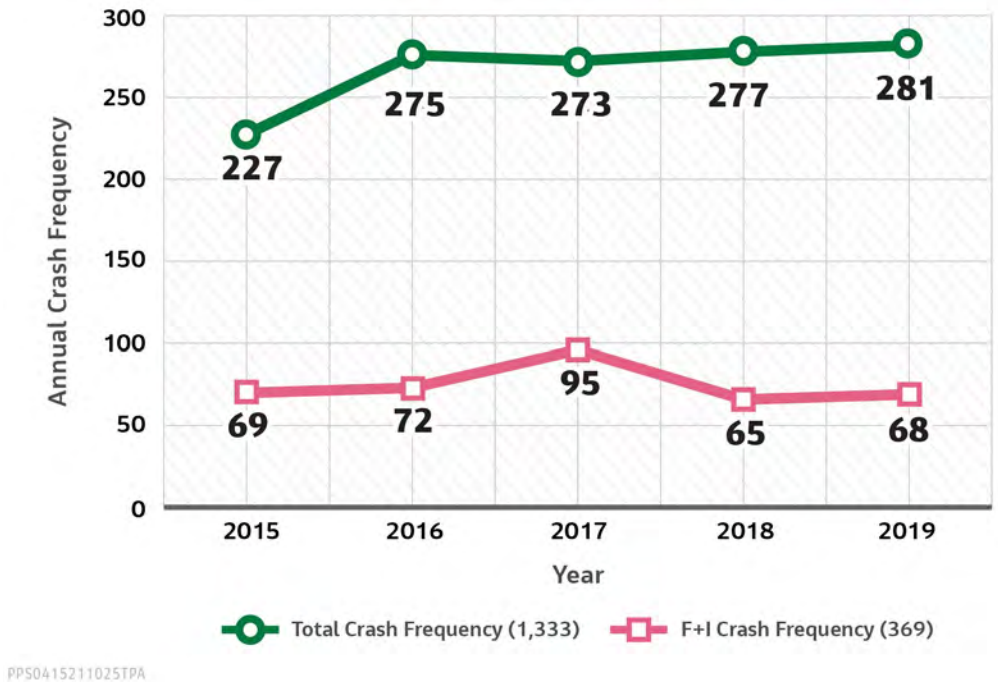
Source: Illinois Department of Transportation's historic crash database, years 2015-2019, received 5/12/2021.

Figure 2-1. Crash Location Map

During the same 5-year period, over 800,000 crashes occurred across Cook County, including 1,274 fatal crashes, and over 1.2 million crashes occurred across the state of Illinois, including 4,801 fatal crashes (Table 2-1). Considering proportions of crashes that were of fatal or injury severity, crashes that occur within the Village of Flossmoor appear to have a tendency toward greater severity. Of all crashes that occurred in Flossmoor during the study period, 27.7 percent involved a fatality or injury compared to 19.1 percent at within Cook County and 21.2 percent within the state of Illinois.

Table 2-1. Crashes by Severity (2015-2019)

Severity	Crash Count	Percent of Total
Village of Flossmoor		
Fatal	4	0.3%
Injury	365	27.4%
Property Damage	964	72.3%
Total	**1,333**	**100.0%**
Cook County		
Fatal	1,274	0.2%
Injury	151,534	18.9%
Property Damage	649,458	81.0%
Total	**802,266**	**100.0%**
State of Illinois		
Fatal	4,801	0.3%
Injury	330,715	20.9%
Property Damage	1,246,627	78.8%
Total	**1,582,143**	**100.0%**



Source: Illinois Department of Transportation's historic crash database, years 2015-2019, received 5/12/2021.

Figure 2-2. Crash History Trendline

It is important to study the nature of these crashes to determine where the greatest potential for safety improvement (i.e., reducing crashes) may lie. The following sections further detail current safety conditions of the Village of Flossmoor's roadway network.

2.2 Emphasis Areas

Emphasis areas were identified to focus the direction of Flossmoor's LRSP. Emphasis areas are defined categories of crashes, road user behaviors, or infrastructure improvements that represent a unique need within a study area and which should be specifically targeted to produce the greatest safety impact. They are typically selected based on patterns in crash data, local policies, and community need, and are intended to guide and unify strategic planners and stakeholders toward the ultimate goal of reducing fatal and injury crashes and improving traffic safety.

Based on the crash data analysis in this section the following emphasis areas have been highlighted for the Village of Flossmoor as a starting place for the LRSP:

- **Pedestrians and Bicyclists.** With fatalities of vulnerable road users on the rise across the United States, many agencies are exploring opportunities to make their cities more pedestrian- and bike-friendly through safer infrastructure, increased connectivity, and the elevation of active transportation as an essential form of movement. Recognizing this as a critical need for the Village of Flossmoor, community members and stakeholders have identified this as a primary area of emphasis for the Village's LRSP. By addressing locations in Flossmoor with a history of vulnerable road user crashes, as well as proactively identifying and addressing locations that do not have a crash history but which exhibit risk factors, the LRSP can help to curb this safety issue and create a more walkable and bikeable village. In particular, targeted safety improvements should focus on pedestrian facilities around local schools and the Flossmoor Metra station—both major pedestrian generators. Such treatments would protect the most vulnerable residents and support a reliable, sustainable, and safe culture of active and multi-modal transportation. Additionally, through the implementation of complete streets and other treatments that elevate non-motorized road users and increase connectivity between valuable community destinations, our public roads can become safer for all.
- **Speed Management.** Most severe crashes involve elevated vehicle speed. With an increase in driving speed, there is a similar increase in the severity of any potential crash, especially when vulnerable road users are involved. To improving safety performance, speed management must be a focus for the Village of Flossmoor's LRSP. Speed management can be achieved through infrastructure improvements, such as lane narrowing, traffic calming, and more, which guide motorists toward safer speeds that are in accordance with posted speed limits where speeding or aggressive driving is prominent. Policy and enforcement treatments may be considered based on identified needs, community input, and research-based assessment of existing facilities. Due to new traffic patterns and driving behaviors resulting from the COVID-19 pandemic, including reduced traffic volumes and increased driving speeds in some areas, this issue is more pertinent than ever.
- **Young Drivers.** With age comes experience, and with experience comes improved safety. Research has shown this to be true for driving; as new drivers enter the roadway with little real-world driving experience, they are more likely to experience a crash, with this likelihood decreasing over the first decade of driving. Aggressive and risky driving behaviors are also more prominent among younger drivers, endangering themselves as well as their fellow road users, making this an important issue for holistic traffic safety performance.
- **Intersections.** At the intersection of two or more streets, there can be many conflicting movements which create the potential for collisions—such as left-turning traffic conflicting with through traffic or right-turning traffic conflicting with a pedestrian crossing. The safety performance of these intersections can often be improved by either reducing the number of conflict points present using innovative intersection designs or by reducing the probability or severity of crashes which may occur at existing conflict points using other safety treatments. Though intersections are commonly designed to maximize operational performance—i.e., traffic through-put—they may not yet be optimized for safety performance and may exhibit opportunities for further targeted safety improvement. Based on

crash data analysis for the Village of Flossmoor, it is recommended that such intersections be a focus for the LRSP. By targeting these locations with proven safety countermeasures that address crashes related to red-light running, risky left turns, congestion, and speeding, a great number of crashes may be prevented in the future, making these intersections and the Village as a whole a safer place.

2.3 Crash Types and Conditions

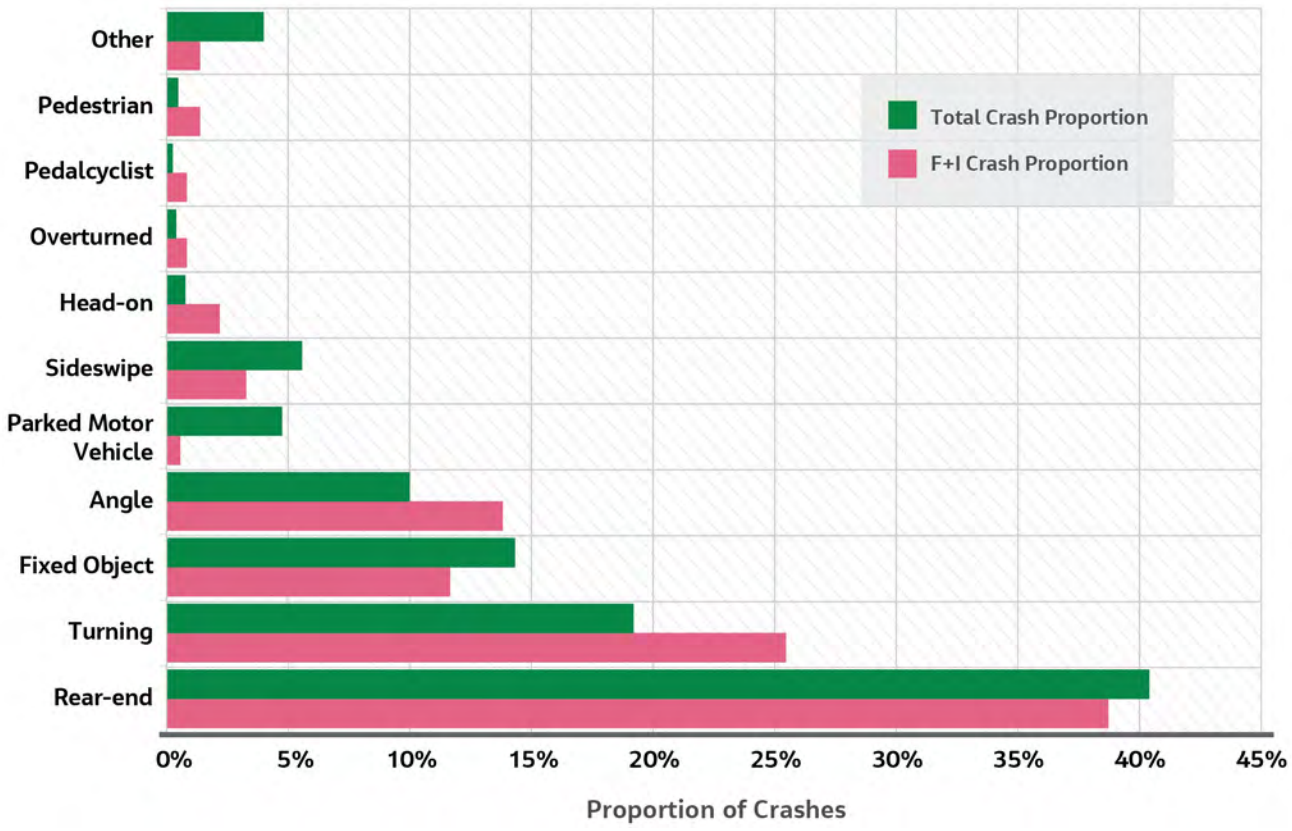
2.3.1 Crash Types

Crashes can generally be categorized into several common crash types that help safety analysts understand the roadway conditions and traffic phenomena involved with each crash. These crash types are assigned at the time of the crash by the enforcement officer who is responsible for documenting the incident in a detailed, standardized crash report. The following are the primary crash types found within the Village of Flossmoor over the 2015–2019 study:

- **Angle** crashes are multivehicle collisions where one vehicle collides with another at or near a right angle (e.g., "T-bone" crashes). These tend to be high severity, occurring primarily at intersections.
- **Fixed-Object** crashes involve a single vehicle colliding with a stationary, rigid object on the roadside or in the roadway median (e.g., a roadside barrier or a traffic signal). These tend to be the highest severity on interstates or other high-speed roadways.
- **Head-on** crashes are multivehicle collisions where two vehicles moving in opposite directions collide, front-to-front. These are often high severity, occurring primarily on undivided roadways and on horizontal curves.
- **Overturned** crashes involve a vehicle that rolls over due to exiting the roadway, aggressive driving, or another destabilizing incident. These tend to be high severity due to the violent motion of the vehicle.
- **Parked Motor Vehicle** crashes involve a moving vehicle colliding with at least one parked motor vehicle along the roadway. These tend to be low severity, occurring primarily on lower-speed roadways where parking is common.
- **Pedalcyclist** crashes involve a motor vehicle colliding with at least one bicyclist or other similar non-motorized road user. These are often high severity because of the vulnerability of bicyclists and similar road users who do not have the protection of a full motor vehicle.
- **Pedestrian** crashes involve a motor vehicle colliding with at least one pedestrian. These are often high severity because of the vulnerability of pedestrians and the high power exerted on pedestrians by vehicles during a collision. The severity of these crashes is strongly correlated with motorist speeds, with the probability of death for pedestrians increasing exponentially with vehicle speed.
- **Rear-end** crashes involve one motor vehicle colliding with another from behind, front-to-rear. These tend to be lower severity though can be high severity especially when higher speeds are involved. These crashes occur most commonly at intersections and increase significantly as congestion increases.
- **Sideswipe** crashes involve two motor vehicles colliding side-to-side while moving in the same or opposite directions. These tend to be lower severity.
- **Turning** crashes are multivehicle collisions where one turning vehicle is hit by another vehicle either moving straight-ahead through an intersection or turning in a conflicting movement. These tend to be higher severity depending on the nature of conflicting movements involved with the collision.
- **Other** crashes include all crashes that were not assigned a crash type by the reporting officer or that were assigned a crash type that represents a very small share of all crashes.

Figure 2-3 presents an analysis of the distribution of total as well as F+I crashes by crash type. This figure illustrates several key features of the Village of Flossmoor's traffic safety performance profile. Firstly, the majority of both total as well as F+I crashes within the Village are crash types commonly associated with intersections (e.g., rear-end, turning, and angle). Additionally, though rear-end crashes are generally relatively lower severity than some other prominent crash types, they represent a large proportion of all severe crashes. These insights together may indicate safety concerns related to congestion on high-speed roadways and intersections where the potential for severe rear-end crashes is elevated.

Similar to rear-end crashes, angle and turning-related crashes represent a large proportion of severe crashes. These crashes might commonly be addressed through thorough reviews of intersection geometry and signal timing. These treatments can be used to identify and address instances where turning motorists may not be able to adequately identify gaps in opposing traffic, intersection dilemma zones where there is an elevated chance for red-light running, and similar infrastructure-related cases. Similarly, through the use of targeted enforcement or other policy-related means, improved intersection compliance may be achieved.



Source: Illinois Department of Transportation's historic crash database, years 2015-2019, received 5/12/2021.

Figure 2-3. Crash Type Distribution

Though crashes involving vulnerable road users (e.g., pedestrians and pedalcyclists) represent only a small proportion of total crashes, these crash types have a strong tendency to be severe, resulting in significant injury. Within the 5-year study period, there were three pedestrian and three bicycle-related crashes. None of these incidents resulted in a fatality; however, all three pedestrian crashes were incapacitating severities, and all three bicycle-related crashes resulted in non-incapacitating injuries. Though no fatalities have been reported in these crashes during the study period, the potential for such incidents remains,

making it a strong priority for consideration within the LRSP. These types of crashes are commonly addressed through improvements to intersection and mid-block crossing facilities, installation of bike lanes and advanced pavement markings, and speed management through traffic calming, enforcement, and lowering speed limits.

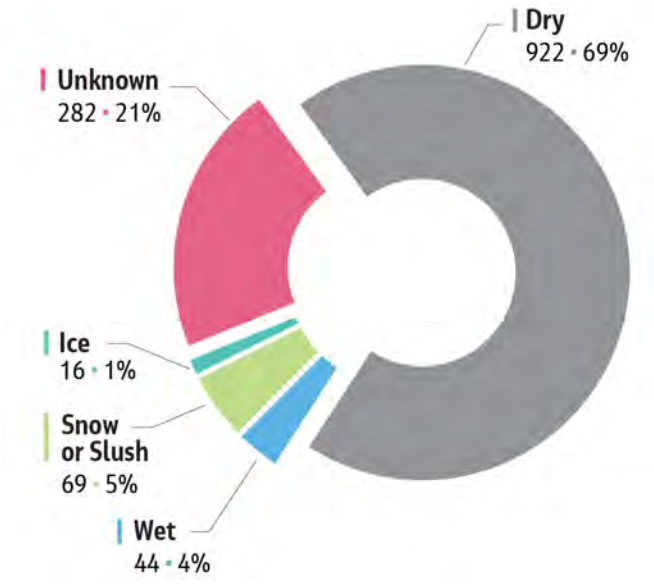
Critically, two of the three pedestrian crashes were noted to have involved high-school-age pedestrians, with one crash occurring on Kedzie Avenue, just outside of Homewood-Flossmoor High School, resulting in incapacitating injuries. Another similarly severe pedestrian crash occurred at the intersection of Flossmoor Road and Brassie Avenue, adjacent to Flossmoor Park. Such instances reinforce the need for implementation of pedestrian safety improvements at these important community locations that create significant pedestrian traffic.

Interestingly, parked motor vehicle crashes make up a sizeable proportion of total crashes at 5 percent, though only two of these crashes resulted in an injury during the study period. Though the probability of an injury occurring during these crashes is low, there are still simple and inexpensive measures that can be taken to reduce their frequency.

2.3.2 Roadway Conditions

The roadway conditions present at the time of a crash are crucial to understanding its cause and how similar crashes may be prevented in the future. Though there are many conditions that may be observed, two in particular have been identified through research and extensive experience to be the most impactful: roadway surface condition and roadway lighting condition.

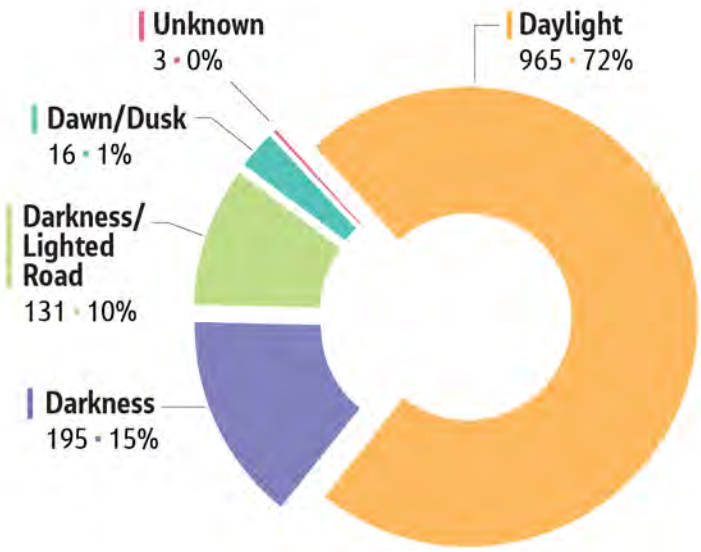
As any motorist in the Village of Flossmoor can attest, driving when roads are covered in snow, slush, or ice can be challenging due to reduced vehicle traction among other things. Roads can also be difficult to maneuver during rain or when roads are otherwise wet, requiring additional time to react to hazards or other vehicles by breaking or evading. For this reason, it is helpful to understand the extent to which such factors influence crash frequency and how they may be mitigated through infrastructure or other traffic safety treatments. Figure 2-4 breaks down of the number of total crashes that occurred under different roadway conditions throughout the study period, including dry, wet, snow or slush, ice, or unknown. Most crashes occurred on dry roadways, with only about 10 percent occurring on roadways with adverse conditions and the rest being unknown. This indicates that surface condition is not a major contributing factor for crashes across the Village.



Source: Illinois Department of Transportation's historic crash database, years 2015-2019, received 5/12/2021.

Figure 2-4. Crash Distribution by Surface Condition

Similar to roadway surface condition, lighting condition is a common focus when assessing the safety performance of a roadway network. Under dark conditions, pavement markings, signs, and roadway features may be more difficult to see, making it challenging to maneuver effectively. Additionally, low lighting may make it difficult for motorists to see pedestrians or bicyclists, increasing the probability of a dangerous collision. Around the hours of sunset and sunrise, the sun may create glare, impairing the vision of some road users and creating another conditional hazard. Figure 2-5 breaks down total crashes by roadway lighting condition, indicating that a majority of crashes occurred during daylight, with only approximately 15 percent occurring under dark, unlit conditions. This indicates a minor concern for street lighting as a contributing factor for some crashes, with a potential safety treatment involving installing additional lighting at crucial intersections and pedestrian crossings.



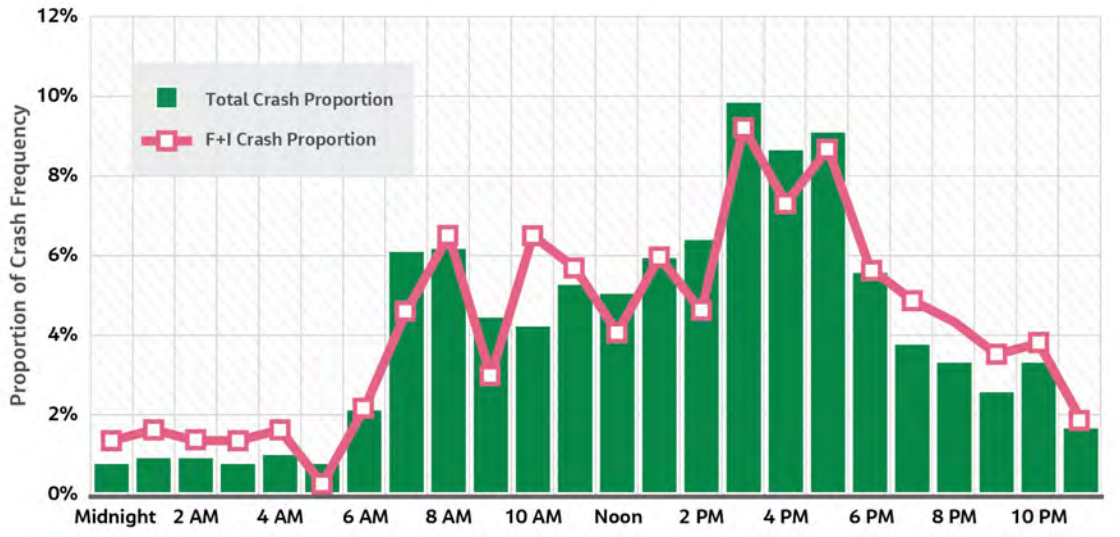
Source: Illinois Department of Transportation's historic crash database, years 2015-2019, received 5/12/2021.

Figure 2-5. Crash Distribution by Lighting Condition

2.3.3 Time and Day

To understand the context of historical crash data, it is valuable to consider the distribution of crashes by time of day. Patterns or abnormalities in such distributions may provide insights into underlying causes or potential options for mitigation of crashes. Figure 2-6 shows the distribution of crashes within the Village of Flossmoor by time of day, considering both total and F+I crashes. The hours that represent the greatest proportions of crashes occur during the morning and evening "rush hour" commute periods of 7 to 10 AM (17 percent) and 3 to 6 PM (28 percent). This is a common pattern in urban environments, where there are spikes in traffic volume (i.e., number of cars on the roadway) at these times, creating more potential for collisions than at other times of day.

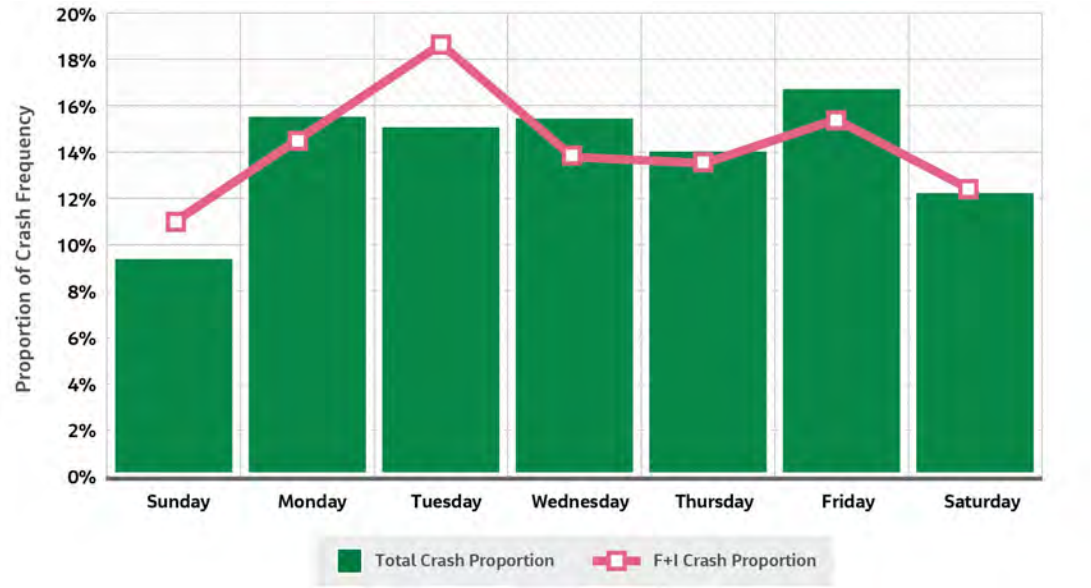
Though data is limited, an additional insight may be drawn from this distribution related to crash severity. Throughout daylight hours, when there are generally more vehicles on the roadway, crashes have a tendency to be lower severity. Conversely, during nighttime hours, F+I crashes tend to outweigh total crashes, indicating a general trend toward higher severity. This may be attributed to higher driving speeds associated with lower traffic volume, reduced visibility at night, as well as the greater proportion of intoxicated drivers during the evening hours.



Source: Illinois Department of Transportation's historic crash database, years 2015-2019, received 5/12/2021.

Figure 2-6. Crash Distribution by Time of Day

Similar to time of day, day of week also shows a pattern in crash data. As shown in Figure 2-7, crash data is fairly consistent across days of week with no extreme fluctuations. There is however a moderate dip in crash frequency on Sundays, perhaps related to lower traffic volumes, less nighttime driving activity, or other factors. Additionally, there is an unusual bump in injury crashes on Tuesdays, perhaps indicating relatively high traffic volumes or another contributing factor. Crash severity appear to increase slightly over the weekend relative to most other weekdays. Between this and the crash distribution by time of day, there appears to be a trend of higher-severity crashes occurs on evenings during weekends and on Tuesdays, which may indicate concerns related to intoxicated or reckless nighttime driving.



Source: Illinois Department of Transportation's historic crash database, years 2015-2019, received 5/12/2021.

Figure 2-7. Crash Distribution by Day of Week

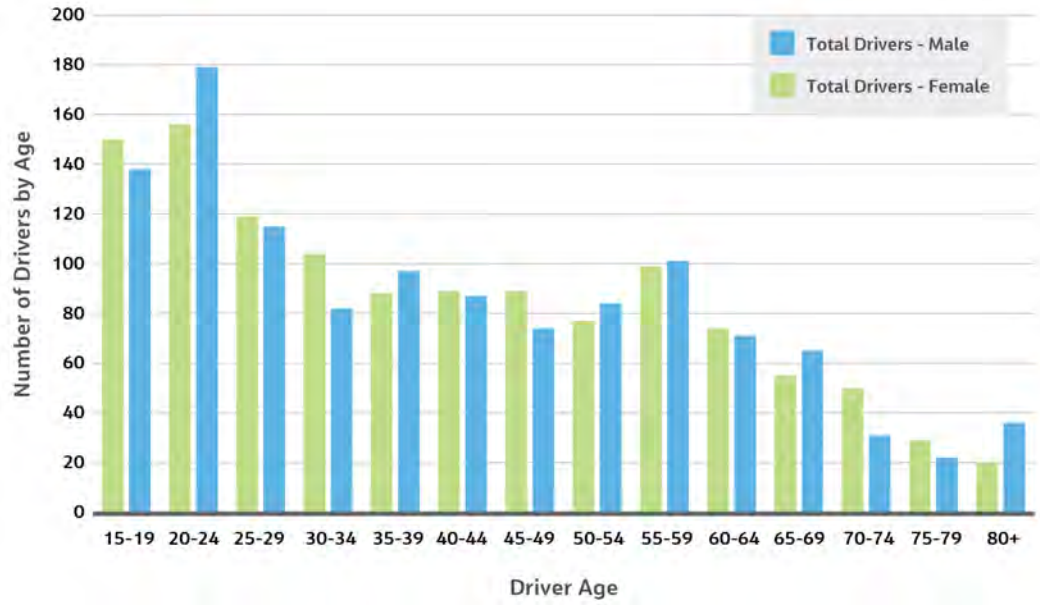
2.4 Persons Involved

In addition to understanding the nature and conditions of a crash, it is valuable to study the people involved with the crash. Knowing more about these road users, particularly drivers, can help with focusing mitigation efforts in a way that best serves the road users who are overrepresented in crash patterns. For example, younger drivers with less driving experience may require additional time to interpret and respond to roadway markings or signing, while older drivers, who may have visual impairment, may have challenges maneuvering complex intersection geometries or traffic patterns. Additionally, by studying driver behaviors involved in crashes, such as intoxication or reckless driving, specific treatments may be identified as most suited for a given roadway network location.

2.4.1 Driver Demographics

Drivers of different ages may behave somewhat differently and often have different needs and limitations when using roadway facilities. Similarly, data has shown that men and women sometimes have different safety performance at different ages. Figure 2-8 shows a distribution of drivers involved in total crashes between 2015 and 2019. Youngest drivers, who are largely inexperienced and may exhibit risky behavior, are involved in the highest number of crashes. As age and experience increase, the number of crashes by age group decreases, except for an additional spike for men relative to women in their early twenties, which, according to studies, is largely due to persistent risky behavior by this group.

There is an additional drop off in crash frequency above age 70, when generally fewer drivers are driving regularly. However, drivers at this age tend to exhibit some additional risks due to reduced vision, increased perception-reaction times, and other factors associated with aging. For this reason, it is important to provide the necessary infrastructural features to ensure that this population of drivers remains capable of using the roadway effectively and safely. Examples of this include increased visibility of traffic signal heads, increased font size for signing, improved roadway and intersection geometry, and reduced speed limits.

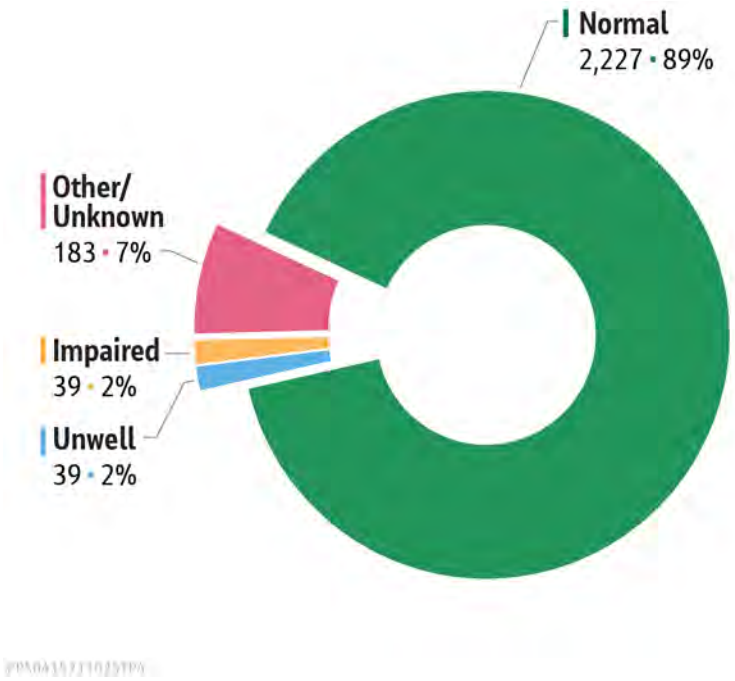


Source: Illinois Department of Transportation's historic crash database, years 2015-2019, received 5/12/2021.

Figure 2-8. Driver Distribution by Age and Gender

2.4.2 Driver Condition

Figure 2-9 visualizes the distribution of drivers involved in crashes by their physical conditions as noted by reporting officers. The data shows that though the majority of drivers involved in crashes were reported as being normal, a small portion (39) of these drivers were found to be impaired with alcohol, drugs, or other substances that critically reduce a driver's capacity to drive safely. These crashes also tend to be higher severity due to reduced inhibitions often resulting in higher speed, riskier behavior, and poorer reaction times. Additionally, 39 drivers were reported as being physically unwell due to illness or other influencing circumstances. Because this data attribute is not consistently collected, it is possible that a higher proportion of crashes involved some form of intoxication that was not otherwise captured in the study's data set.

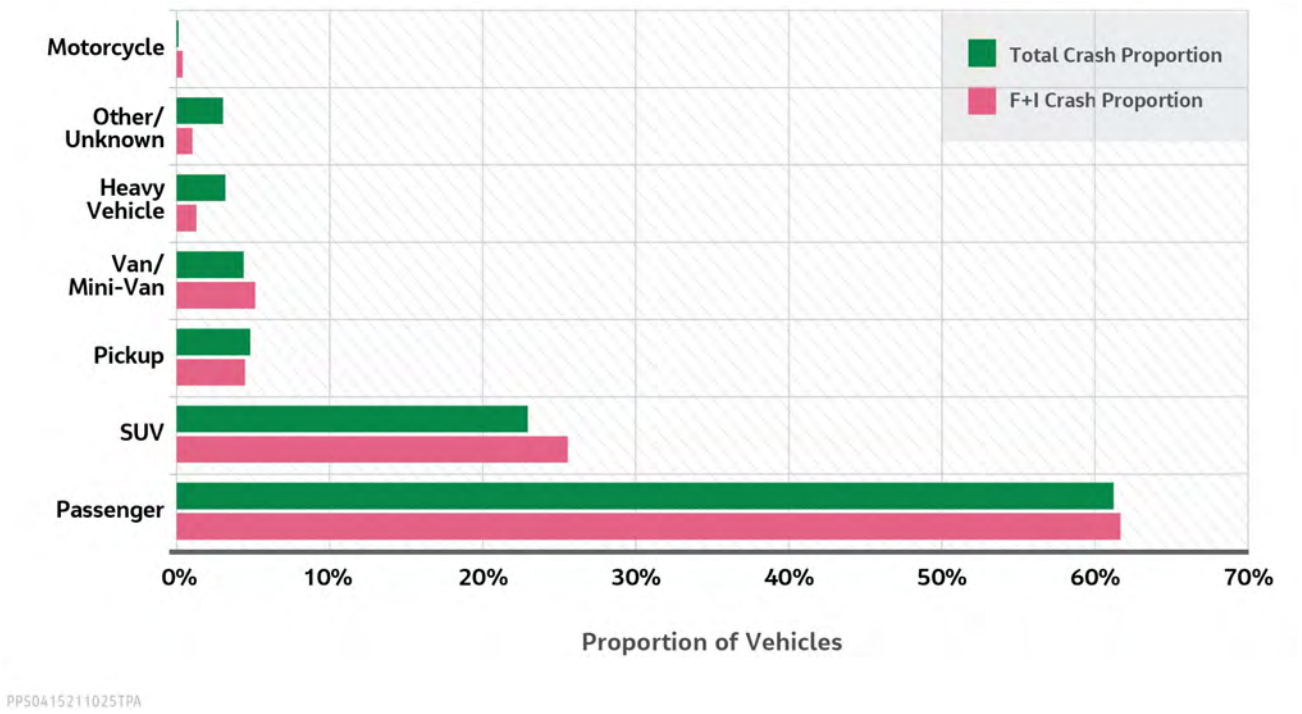


Source: Illinois Department of Transportation's historic crash database, years 2015-2019, received 5/12/2021.

Figure 2-9. Driver Distribution by Condition

2.4.3 Vehicles Involved

An additional consideration for understanding the safety needs of a transportation network is the role of vehicle type in crash frequency. That is, are there overrepresentations of vehicle types, such as heavy vehicles (trucks, buses, etc.), motorcycles, or others, and what traffic safety strategies might be identified to help address this overrepresentation? Based on the distribution of all vehicles involved in the study period crashes in the Village of Flossmoor (Figure 2-10), heavy vehicles only make up a small proportion of all crashes—just 3 percent of total crashes and 1 percent of F+I crashes. Additionally, over the course of the study period, only two motorcycle crashes were reported, though both involved injuries. Notably, the average severity of crashes involving SUVs is higher than that of other passenger vehicles. This is likely due in part to the heavier weight of these vehicles, which produces a higher-energy collision that may elevate the severity of a crash.



Source: Illinois Department of Transportation's historic crash database, years 2015-2019, received 5/12/2021.

Figure 2-10. Distribution of Crashed Vehicles by Type

2.5 Priority Crash Locations

In addition to understanding patterns in the conditions of historical crashes as well as those involved in the crashes, it is crucial to review patterns in the geographic location of crashes. By studying this, we can not only identify underlying safety concerns but also where the crashes are occurring and therefore how they might be addressed. As shown in Figure 2-1, a large proportion of crashes occur along the major roadways within the Village of Flossmoor, such as Vollmer Road, Pulaski Road, and Governor's Highway. Similarly, there are clusters of crashes at the intersections of Vollmer Road with other high-traffic roads, particularly at the intersections of Vollmer Road and Pulaski Road, Vollmer Road and Western Avenue, and Vollmer Road and Dixie Highway. Outside of these priority locations, there are crashes scattered among lower-traffic roads and intersections, as well as a few—primarily non-injury—throughout the local neighborhood roads.

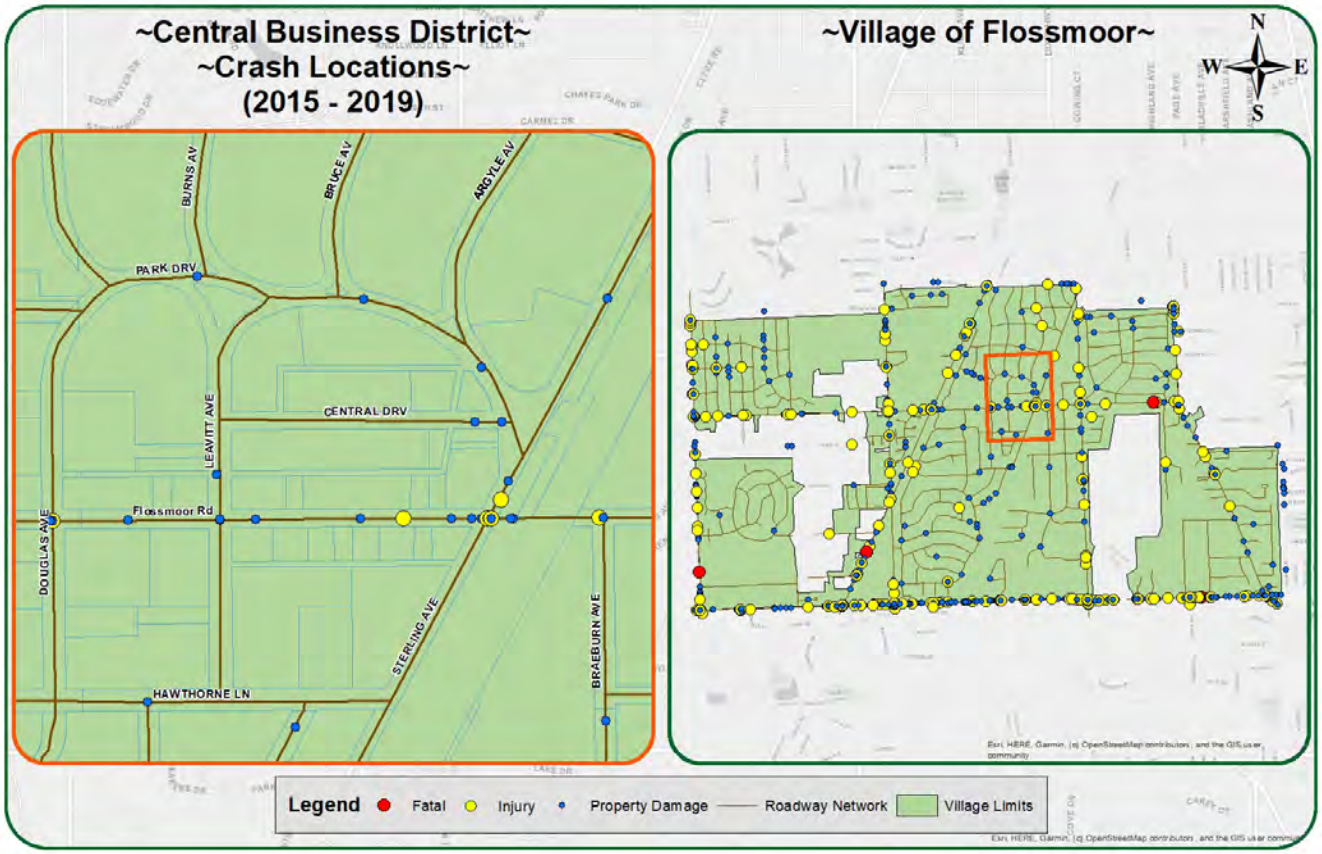
2.5.1 Fatal Crash Locations

Notably, three of the four fatal crashes involved impacting roadside fixed objects, a crash type generally associated with roadway segments as opposed to intersections. Such crashes can be difficult to directly address as roadways often feature many fixed objects along the roadside (e.g., light poles, trees, traffic signals, signs); by focusing on the individual fixed objects that were involved in these crashes, the underlying issue may be missed. Instead, patterns of severe fixed-object crashes might be addressed through extensions of clear zones—the area adjacent to the roadway in which fixed objects cannot be placed, widening roadway shoulders, or similar treatments. Alternatively, these crashes can be addressed through severity-reducing measures such as installing guardrails along fixed-object-dense sections of roadway, installing curb and gutter where not already present, or reducing speed limits. The fourth fatal

crash involved a turning vehicle; however, it occurred at a minor intersection and did not involve any of the high-crash intersections noted.

2.5.2 Central Business District

An area of focus for the Village of Flossmoor's LRSP, the central business district near the intersection of Sterling Avenue and Flossmoor Road, features a relatively high density of businesses, public parking, and other downtown features. The area, highlighted in Figure 2-11, also features the Village's Metra train station, which is a major connection to other locations in the Chicago area and is a major pedestrian generator. Though no fatal crashes have occurred in this area over the study period, the majority of injury crashes have occurred at or within a short distance of the Sterling Avenue and Flossmoor Road intersection, a relatively high-volume, all-way-stop-controlled intersection. The eastern approach to the intersection passes under the Metra railroad in a narrow, low-light underpass. This underpass may negatively impact visibility for motorists on this approach, reducing compliance with the stop condition or otherwise increasing the probability of a collision or risky behavior.



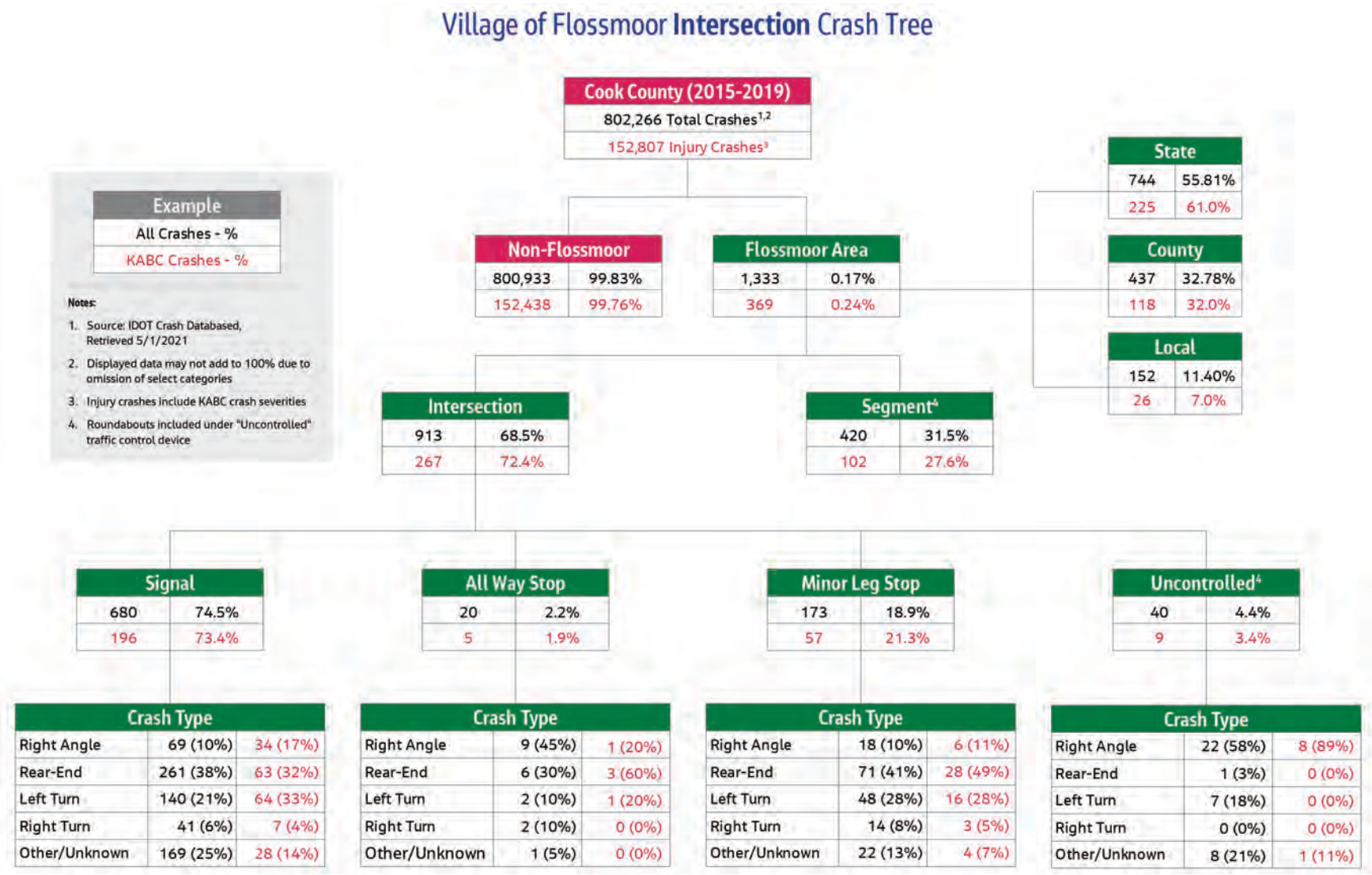
Source: Illinois Department of Transportation's historic crash database, years 2015-2019, received 5/12/2021.

Figure 2-11. Central Business District Crash Map

2.6 Crash Trees

Crash trees are a commonly used tool to identify complex trends in historical crash data. They break down the data by several different categories, one at a time, to help analysts determine what combinations of crash characteristics may be the most critical or overrepresented. In these trees, each level shows the total number of crashes of all severities at that level (in black text) as well as the total number of F+I crashes (in red text). A percentage value is also provided for each of these, which shows that branch's share of crashes relative to the branch above (as opposed to relative to the number of crashes at the top). For the Village of Flossmoor, two crash trees were created as shown in Figures 2-12 and 2-13. Data for the entirety of Cook County is first summarized, showing a total of over 800,000 crashes over the 2015 - 2019 study period. The data is then broken down by the Flossmoor area versus crashes outside of the Village. Because intersections and roadway segments tend to exhibit vastly different patterns of crashes, these two data sets are separated out in the next two branches, which are shown in each of the two figures.

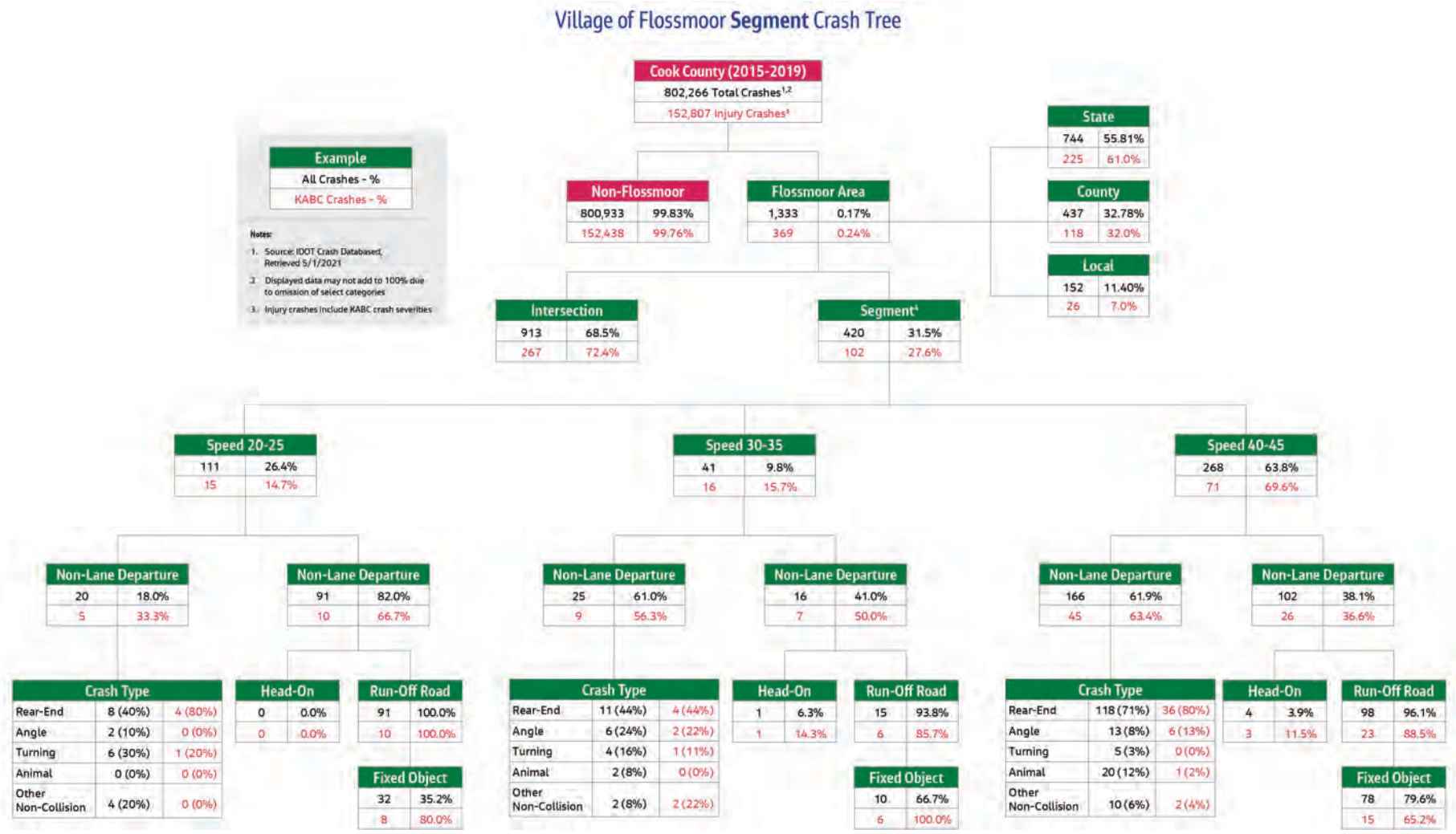
In the intersection crash tree (Figure 2-12), crash data is broken out by intersection traffic-control type—signalized intersections (e.g., "traffic signals"), all-way stop-controlled intersections, minor-leg stop-controlled intersections, and uncontrolled intersections. Among these, signalized intersections exhibit the most crashes by far, with 680 total. Within each intersection-control-type group, crash data is broken down into key crash types, including right angle (e.g., "T-bone"), rear-end, left turn, right turn, and other/unknown. Considering these crash types, right-angle crashes tend to be highly severe at signalized intersections, representing 17 percent of all F+I crashes but only 10 percent of total crashes, while rear-end crashes tend to be relatively low severity. Conversely, on minor-leg stop-controlled intersections, right-angle crashes tend to have moderate severity, with rear-end crashes having an overrepresentation of F+I crashes (49 percent compared to 41 percent of total crashes). Because so few crashes have occurred at the other two intersection types, it is difficult to make strong conclusions about representations of crash types for all-way stop-controlled and uncontrolled intersections.



Source: Illinois Department of Transportation's historic crash database, years 2015-2019, received 5/12/2021.

Figure 2-12. Crash Tree – Intersection

In the roadway segment crash tree (Figure 2-13), crash data is broken out by speed-limit range—low speed (20-25 miles per hour [mph]), medium speed (30-35 mph), and high speed (40+ mph). By studying this level of the crash tree, it is apparent that higher-speed roadways tend to exhibit higher-severity crashes. Looking further, the next level of the tree breaks out the crashes associated with each of these portions of the roadway by the high-level category of crash, lane departure versus non-lane departure. This categorization distinguishes between crashes involving vehicles that exited their travel lane, colliding with either a roadside fixed object (e.g., a light pole) or another vehicle, which is a helpful distinction for the purposes of diagnosing common safety concerns. This level shows a common feature among the majority of crashes on low-speed roadways, which tend to be related to lane departure. In contrast, on higher-speed roadways, non-lane-departure crashes represent the majority of crashes, likely due to crashes involving commercial driveways, congestion, and more. Lane-departure crashes are further broken down between head-on and run-off-road crashes as well as run-off-road crashes that involve a collision with a fixed object. These branches show that head-on collisions are generally rare; however, when they do occur, they tend to be very severe. Higher-speed roadway crashes also have a higher tendency to involve roadside fixed objects, as there is often more roadside hardware along such roads. Lower-speed roads involve fewer fixed objects and likely involve a higher number of collisions with parked vehicles along residential and other low-speed areas.



Source: Illinois Department of Transportation's historic crash database, years 2015-2019, received 5/12/2021.

Figure 2-13. Crash Tree – Roadway Segment

3. Transportation and Mobility

Though the Village of Flossmoor is small, with a total area of only 3.8 square miles, it features an extensive network of roadways, sidewalks, and other transportation facilities. Within the limits of the Village and along its borders, there are approximately 55 total miles of public roads and nearly 300 intersections, 14 of which are signalized. Flossmoor also features a centrally located train station on Metra's Electric Line, which connects the Village to Chicago's downtown area at Millennium Station, 25 miles away. The historic downtown area of Flossmoor is located near Sterling Avenue and Flossmoor Road, providing residents easy access to local businesses, restaurants, parks, churches, and schools.

3.1 Roadways

3.1.1 Peer Group

When considering the nature of a roadway network, it is helpful to think in terms of *peer groups*. Peer groups are subsets of roadway facilities that share similar contexts and general geometric designs and that are expected to behave similarly from both a traffic and safety point of view. By dividing facilities into peer groups, we can simplify the data set and begin to look for patterns that can help lead to more informed conclusions. For the sake of this study, roadways are broken into peer groups by jurisdiction (e.g., local- or state-maintained), number of lanes (e.g., two-lane or multilane), and division (e.g., divided or undivided). Because not all of these different combinations are represented within the Village of Flossmoor, the peer groups have been simplified to include *local two-lane roadway, local multilane roadway, state multilane undivided roadway, state multilane divided roadway and other roadways.* The *other roadways* peer group captures all other minor peer groups for simplicity. Figure 3-1. visualizes the distribution of mileage of these roadway peer groups.

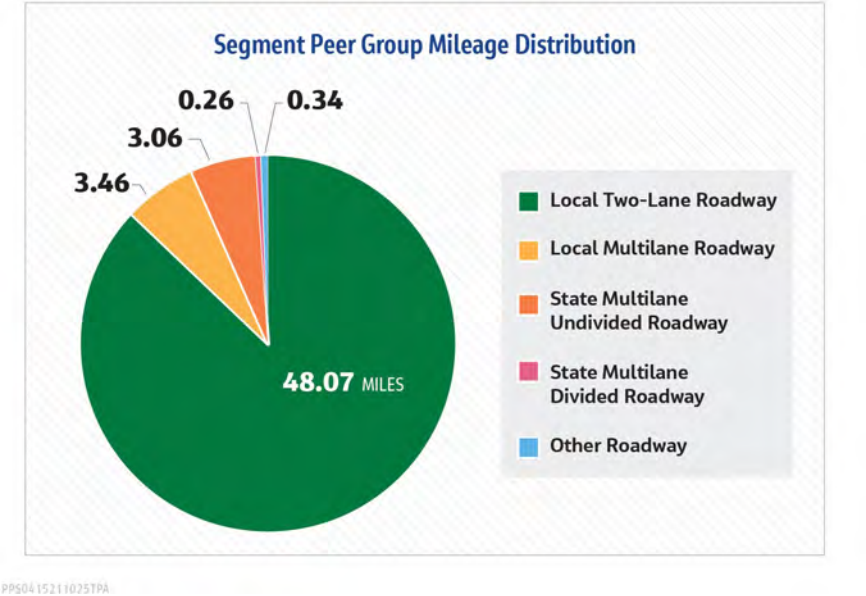


Figure 3-1. Segment Peer Group Mileage Distribution

According to Figure 3-1., the vast majority (48.1 miles) of the Village of Flossmoor's roadway network is made up of locally owned two-lane roadways. This includes small, low-traffic neighborhood roads that serve Flossmoor's residential areas, connecting them to the major routes. The rest of the network is shared

between local and state ownership, being made up primarily of multilane (i.e., more than one lane in each direction) roadways. Though these roads only represent a small portion of the Village's network, they carry a large portion of its traffic, serving locals moving within the Village as well as motorists driving in and out of and through the Village.

Additionally, throughout the Village of Flossmoor, approximately 95 percent of all roads are undivided, featuring no physical separation between opposing directions of traffic. Though this is generally common for most low-speed and low-volume roadways, it can create concerns for higher-speed, higher-volume roadways where there is elevated risk for head-on or sideswipe crashes that can result in serious injuries. Such roadways may be good candidates for treatments such as installation of a median, traffic calming, or road diets, which reduce a roadway design from two lanes in each direction to a single lane in each direction with a continuous left-turn lane in the middle and bicycle facilities or similar improvements on either side.

3.1.2 Jurisdiction

Beyond the simplified local- versus state-owned binary used to define high-level peer groups for Flossmoor's roadways, additional subtypes of jurisdictions are present, including municipality, county, Illinois Department of Transportation (i.e., state-owned), township, and private. As shown in Figure 3-2, nearly 75 percent (41.6 miles) of public roads within the Village of Flossmoor fall under municipal jurisdiction, belonging to the Village itself. Figure 3-3 shows a map of Flossmoor's roadways by jurisdiction, with Illinois Department of Transportation routes representing much of the major north-south roadways in the Village and county routes representing much of the major east-west roadways. Around the borders of the village, some roadway jurisdictions are shared between Flossmoor and neighboring municipalities; these roads are included within this study and are counted toward Flossmoor's total jurisdictional mileage based on total centerline miles.

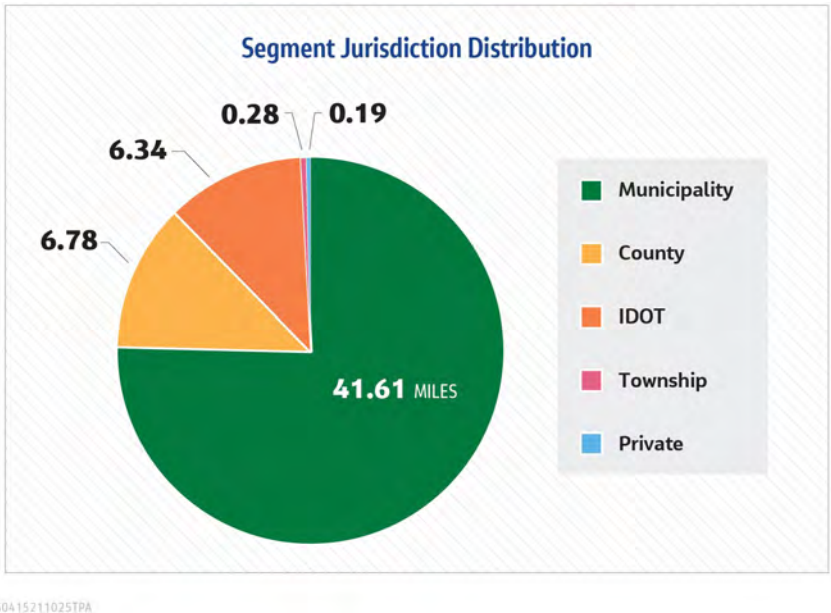


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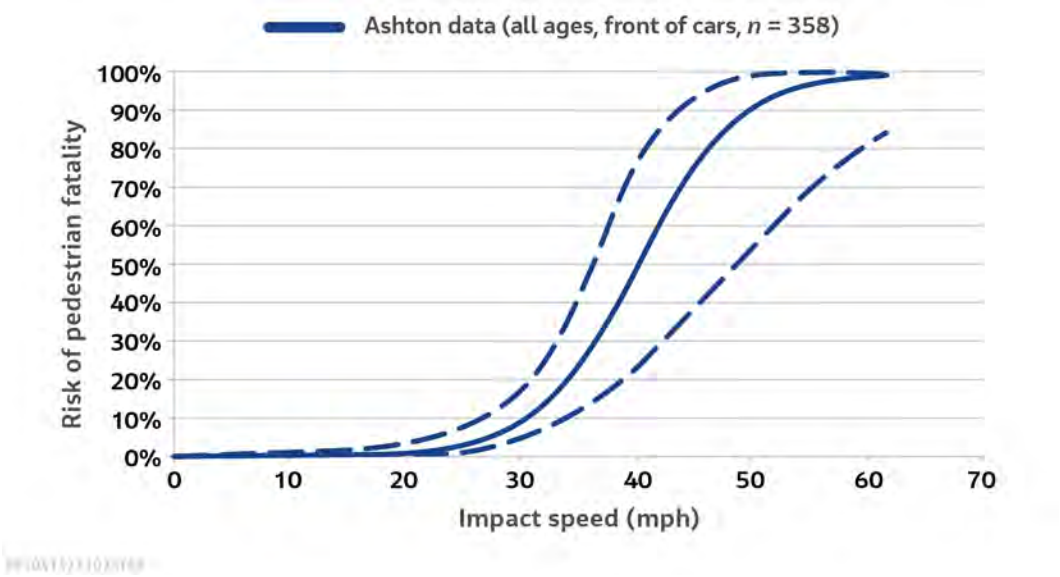
Figure 3-2. Segment Jurisdiction Distribution

Figure 3-3. Roadway Jurisdiction Map

3.1.3 Speed Limit

Though higher speed limits are often associated with decreased travel times for motorists, their relationship with traffic safety performance is more complex. Fundamentally, higher speeds are associated with higher-severity crashes—especially when a pedestrian or bicyclist is involved. In fact, research has shown that the probability of a pedestrian being killed by a car crash increases exponentially with speed (Figure 3-4.), increasing from 9 percent at 30 mph to 50 percent at 40 mph. For single-vehicle and multivehicle collisions as well, increased speeds are correlated with increased crash severity. Additionally, increased speed differentials (i.e., the difference in speed between the highest- and lowest-speed motorists on a roadway) are associated with increased crash frequency. For these reasons, it is critical that roadway speeds—both posted speed limits and actual driving speeds—be managed through effective infrastructural design and policies to identify and apply appropriate speed limits for different roadway functions to optimize safety and to minimize speed differentials.



Source: Department for Transport: London, 2010[1]

Figure 3-4. Risk of Pedestrian Fatality by Impact Speed

Approximately 76 percent (41.77 miles) of the Village of Flossmoor's public roads have a speed limit of 25 mph. Most of these routes represent two-lane neighborhood roads, where traffic volumes are low, pedestrian volumes are relatively high, and drivers are maneuvering in and out of residential areas. These locations generally have few crashes reported and feature low speed limits to protect residents moving around the area, vehicles entering and exiting driveways, and children at play. About 18 percent (9.8 miles) of the roads have a speed limit of either 40 or 45 mph, representing higher-volume arterial roadways in the Village, serving commercial areas and commuters alike. These roadways tend to be considered "major roads," often with multiple lanes in each direction and higher-functioning signalized intersections. Figures 3-5 and 3-6 provide both quantitative and mapped summaries of speed-limit data within the Village of Flossmoor.

A noteworthy location with regards to speed limit is the portion of Kedzie Avenue that passes along Homewood-Flossmoor High School. This corridor normally has a posted speed limit of 45 mph; however, during school days, the portion of the roadway north of Flossmoor Road that is adjacent to the school has a school zone speed limit of 20 mph. Because of the proximity of the signing for these different speed limits, there is some concern that there may be inconsistencies in compliance, creating conflicting traffic patterns that may be addressed through further onsite analysis.

[1] Department for Transport: London. 2010. *Road Safety Web Publication No. 16 Relationship between Speed and Risk of Fatal Injury: Pedestrians and Car Occupants.* D. C. Richards Transport Research Laboratory. September. https://nacto.org/.

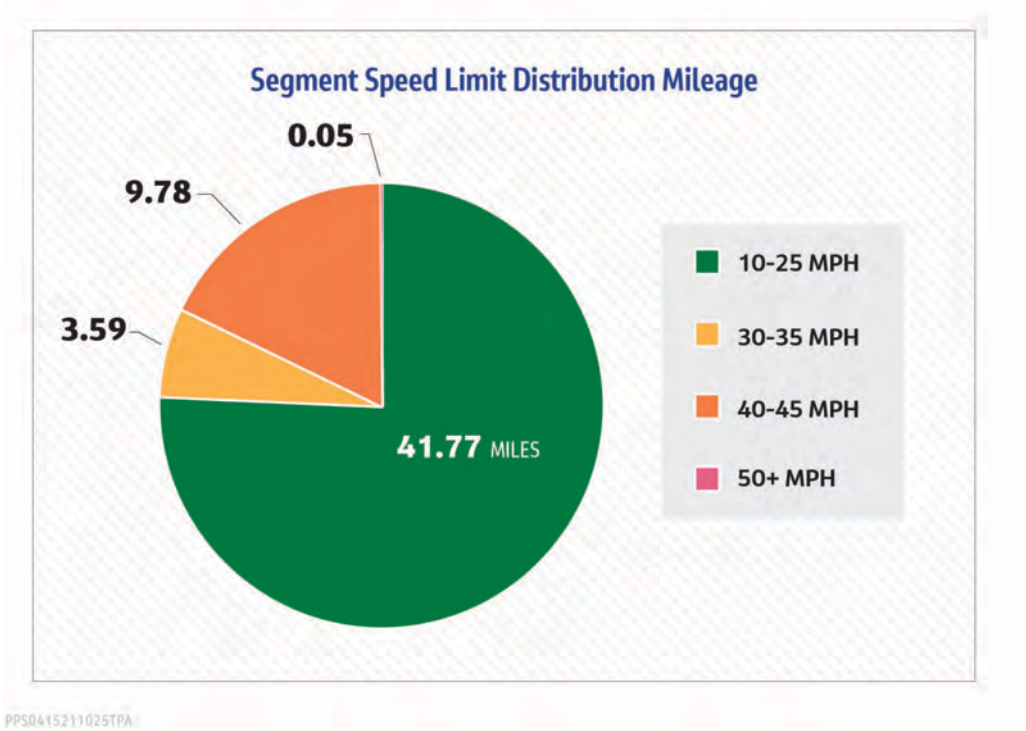


Figure 3-5. Segment Speed Limit Distribution Mileage

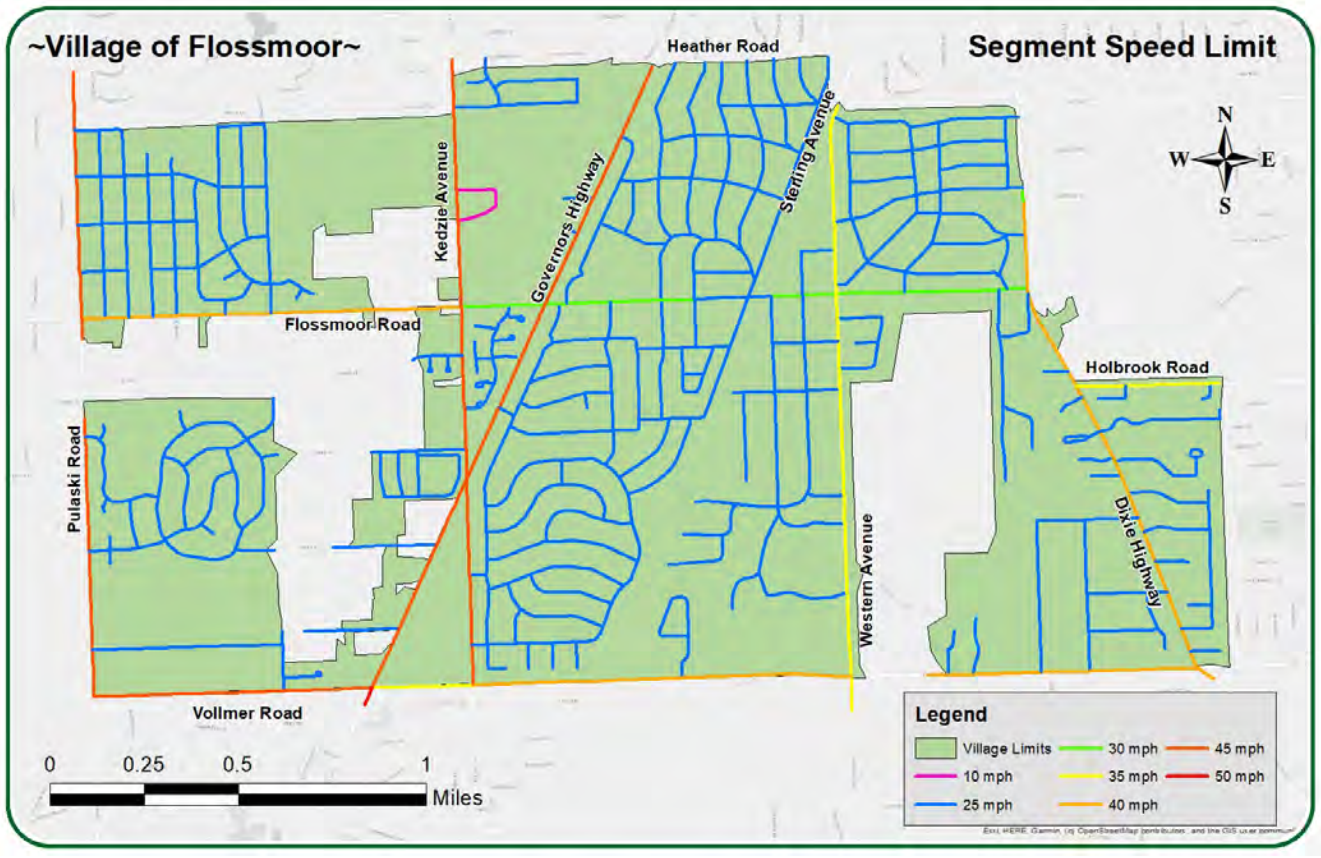


Figure 3-6. Speed Limit Summary Map

3.2 Intersections

3.2.1 Peer Group

Similar to roadways, intersections within the Village have been broken into a selection of peer groups, representing different combinations of jurisdiction (e.g., local- or state-maintained) and traffic control (minor-leg stop, all-way stop, signalized, roundabout, or no control device). Based on these combinations, Figures 3-7 and 3-8 were developed to visualize the distribution of these intersection peer groups both by number of intersections and by location within the Village.

Of the 299 intersections in the Village, 155 (52 percent) have no traffic control device, a common configuration where many low-volume, low-speed neighborhood streets intersect and motorists are expected to yield to one another. Another 104 intersections (35 percent) are minor leg stop-controlled, where the smaller of two intersecting roadways is controlled with a stop sign at the intersection while the other flows freely, appearing commonly at both the crossing of two low-volume neighborhood roads as well as at the crossing of one low-volume road with an arterial road where there is not enough intersecting traffic to warrant a traffic signal. Twenty-four intersections (8 percent) are all-way stop-controlled, appearing exclusively inside low-volume residential areas. Fourteen intersections (5 percent) are signalized, representing locations where two major routes intersect with high volumes of both through and turning traffic. The remaining two intersections (0.6 percent) are roundabouts, serving locations where multiple low- and medium-volume roadways intersect at odd angles.

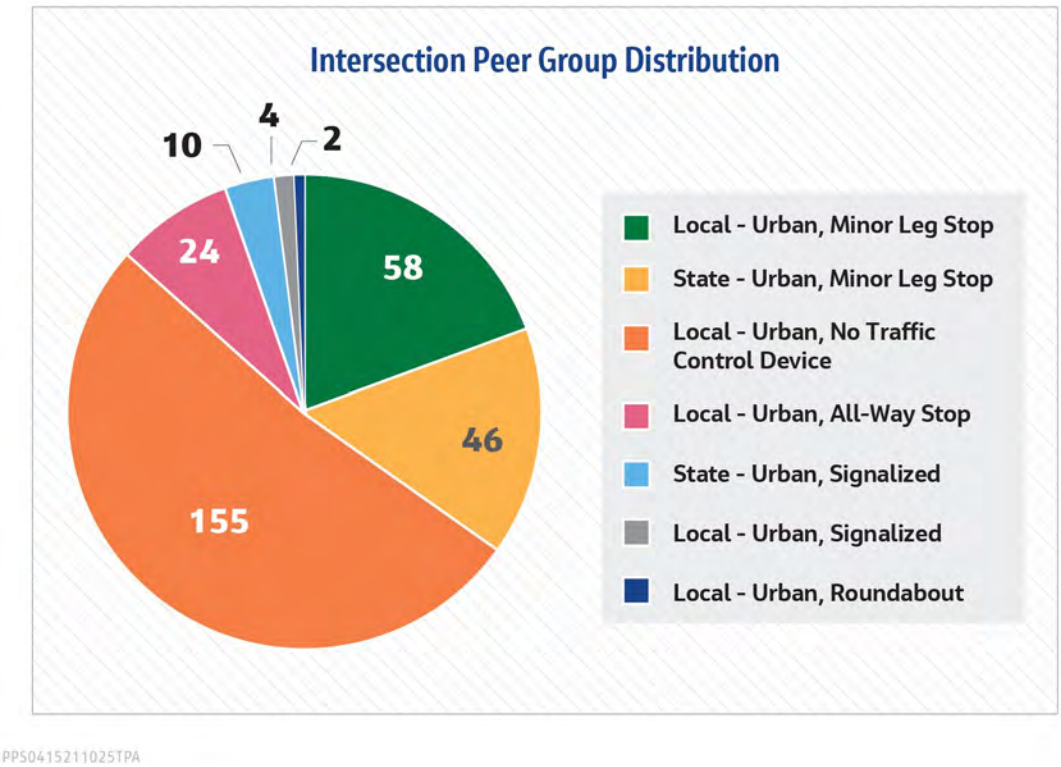


Figure 3-7. Intersection Peer Group Distribution

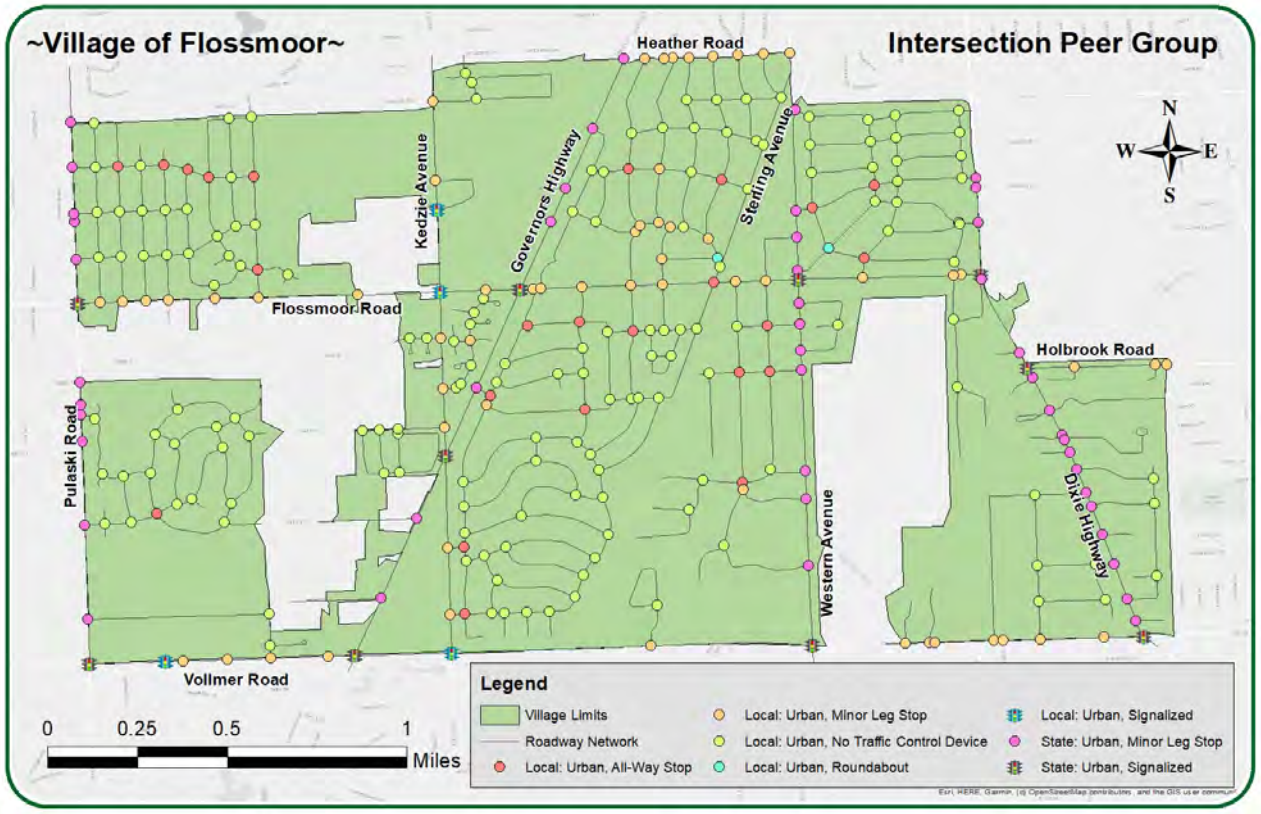


Figure 3-8. Intersection Peer Group Map

3.2.2 Functional Classification

When assessing the safety performance of roadway intersections, it is important to consider the operational characteristics of the intersections using an attribute called *functional classification*, which describes the role that the intersecting roadways play in serving passing traffic. Specifically, arterial roadways serve the bulk of traffic moving between common destinations and are often referred to as "main roads." In an urban environment, these roads often have multiple lanes in each direction to serve the higher levels of traffic and regularly feature signalized intersections when crossing with other major roads, or minor-leg stop-controlled intersections when crossing with lower functional class roadways. Local streets generally serve vehicles as they leave their origin or arrive at their destination, such as residential streets that lead to major roads or service roads that then connect shopping centers to major roads. Collectors serve between arterials and local roads, bridging between the two and generally serving medium levels of traffic. In the case of intersections, each intersection is defined by the highest functional class of the intersecting roadways; if an arterial road intersects with a local street, the intersection is defined as an arterial intersection.

As shown in Figure 3-9, most intersections are where local streets meet other local streets—198 of 299. These intersections tend to have low frequencies of crashes due to the low volumes passing through them as well as the low speeds of the intersecting routes (generally 10-25 mph). This leaves 67 intersections defined as minor arterial (there are no major arterial intersections within Flossmoor) and 34 defined as major or minor collector. Because of the relatively high traffic volumes and speeds of these intersections, they represent a much higher share of the Village's crashes and immediately become a strong focus for safety performance enhancing treatments. Through additional analysis during the development of the LRSP, high-crash locations can be determined and addressed.

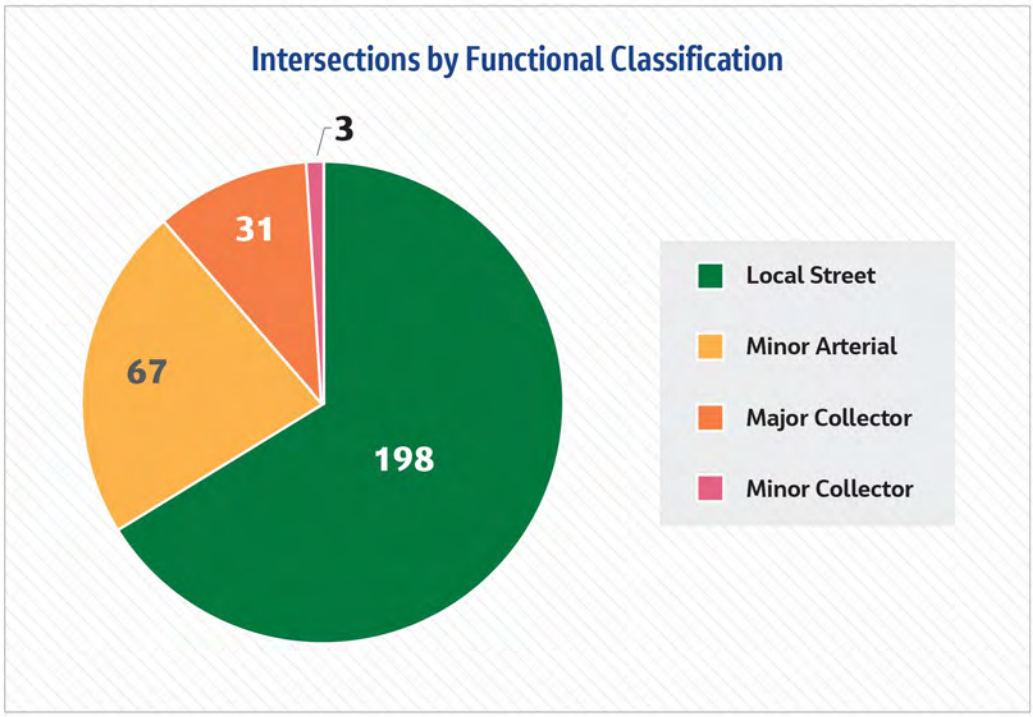


Figure 3-9. Count of Intersections by Functional Classification

3.2.3 Traffic Volume

Similar to functional classification, intersection traffic volume provides insights on how an intersection may perform in terms of traffic safety. In general, higher traffic volumes produce a greater number of crashes; however, different ranges of volumes along with different functional classifications also require different designs of infrastructure. Use of stop signs or traffic lights to control traffic, choice of intersection layout, and other features can be modified to optimize both operational performance as well as safety performance, providing both a facility that works well for those using it and keeps them safe as they do.

Because traffic volume data generally requires extensive collection, it is not available for many intersections due to the low-traffic, low priority roadways such as crossings of neighborhood streets. Approximately 36 percent of the Village of Flossmoor's intersections have a reported traffic volume. Based on available data, 77 locations have more than 10,000 entering vehicles per day (Figure 3-10).

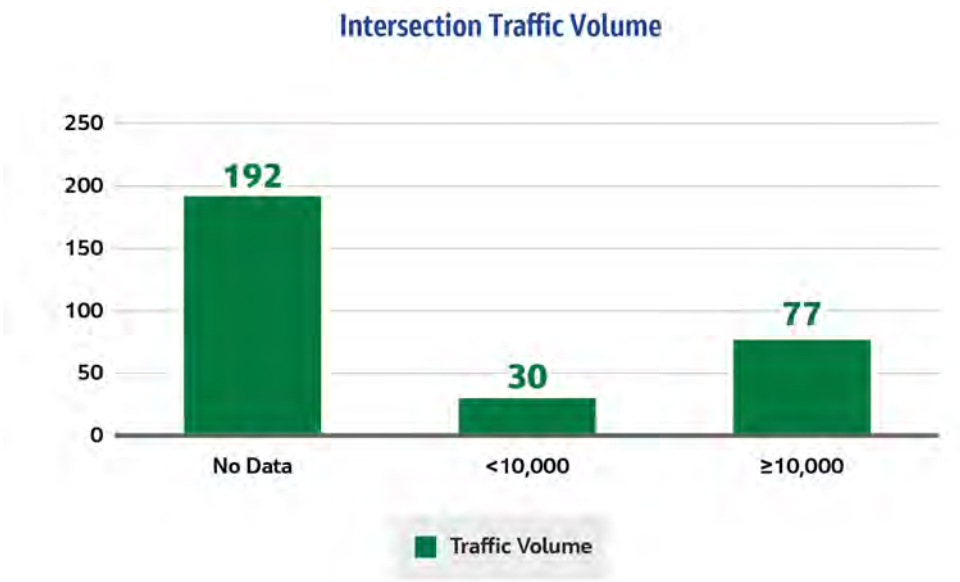


Figure 3-10. Intersection Traffic Volume

3.2.4 Municipality

As some major roadways run along the borders of the Village of Flossmoor, jurisdiction of some of these facilities is shared with adjacent municipalities. Though Flossmoor maintains jurisdiction over most of these shared intersections, some are managed by other municipalities including Olympia Fields to the south, Homewood to the northeast, and Country Club Hills to the northwest. Figure 3-11 shows the neighboring communities around Flossmoor and the number of intersections along the Village's border over which they have jurisdiction. The intersections that are coded to other communities account for 12 percent (37 of 299) of the full network.

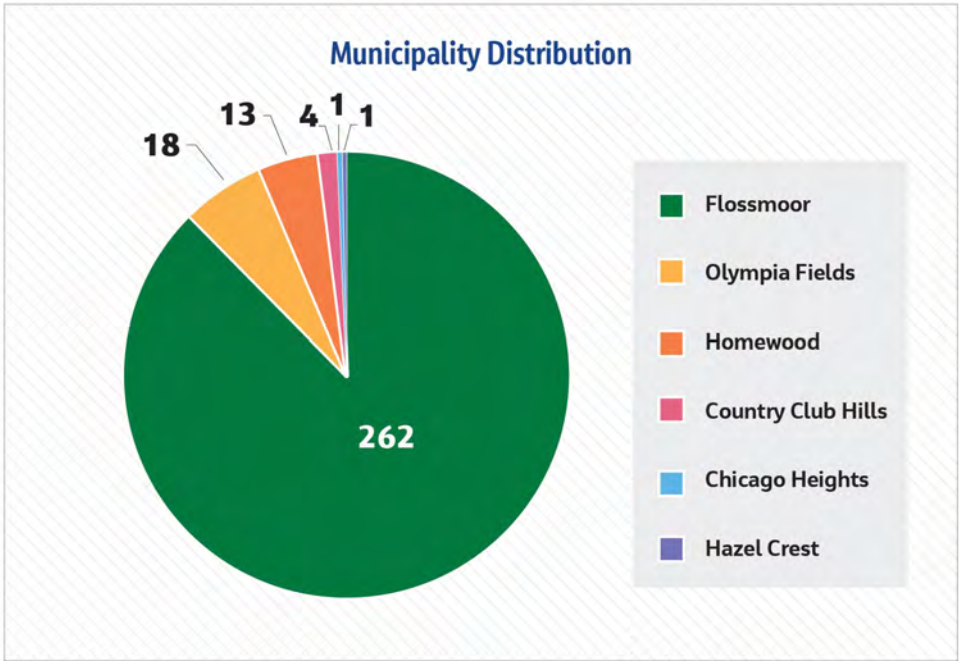


Figure 3-11. Municipality Distribution

3.3 Sidewalks & Bicycle Facilities

3.3.1 Sidewalk Facilities

To support walking as a safe and accessible form of transportation, it is important that pedestrians have continuous sidewalks available on common routes. This allows all residents to travel freely around the Village without the requirement of vehicle ownership. Complete, well-maintained, accessible, and Americans with Disabilities Act-compliant sidewalk networks are crucial for the safety of vulnerable road users, support of local businesses, and equitable transportation access to all residents.

Based on the Village of Flossmoor's existing sidewalks inventory (Figures 3-12 and 3-13), the Village features around 88 miles of sidewalks, with just over half of all public roads featuring sidewalks on both sides. These two-sided facilities predominantly appear along inner residential roadways and do not extend out to many major roadways. Approximately 15 percent of remaining roads feature sidewalks on one side of the road, serving pedestrians through the area but requiring some to cross a busy street to access the sidewalks. The remaining one-third of all roads have no sidewalk, representing the majority of mileage of arterial roadways that connect residential areas to local amenities, schools, and commercial areas. This sparse network makes it challenging for pedestrians to travel effectively and safely outside of residential areas.

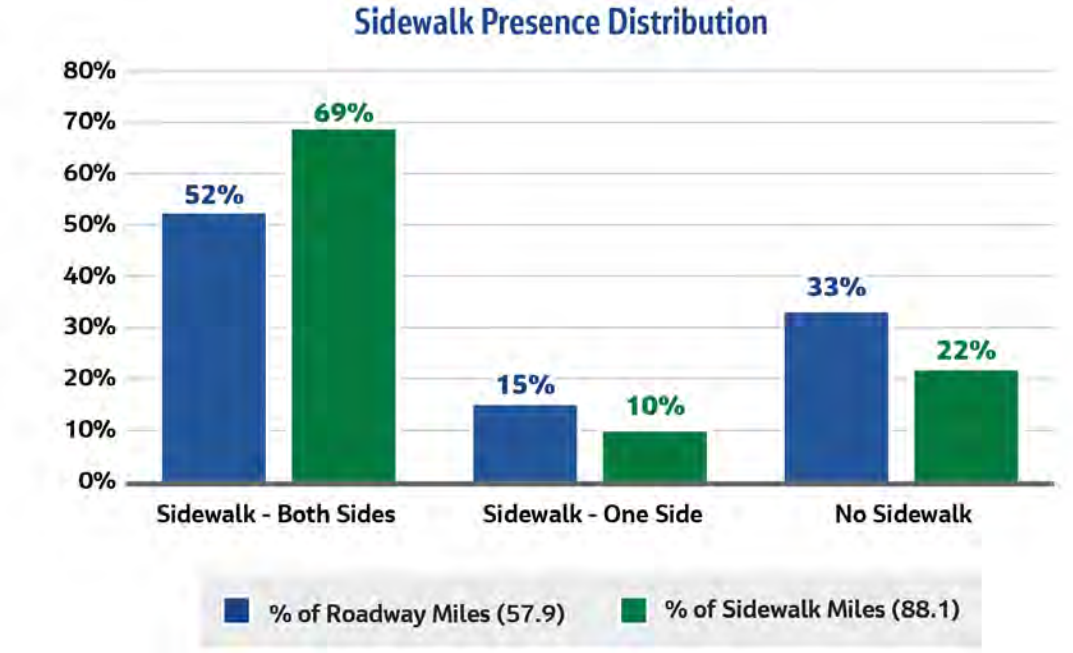


Figure 3-12. Sidewalk Presence Distribution

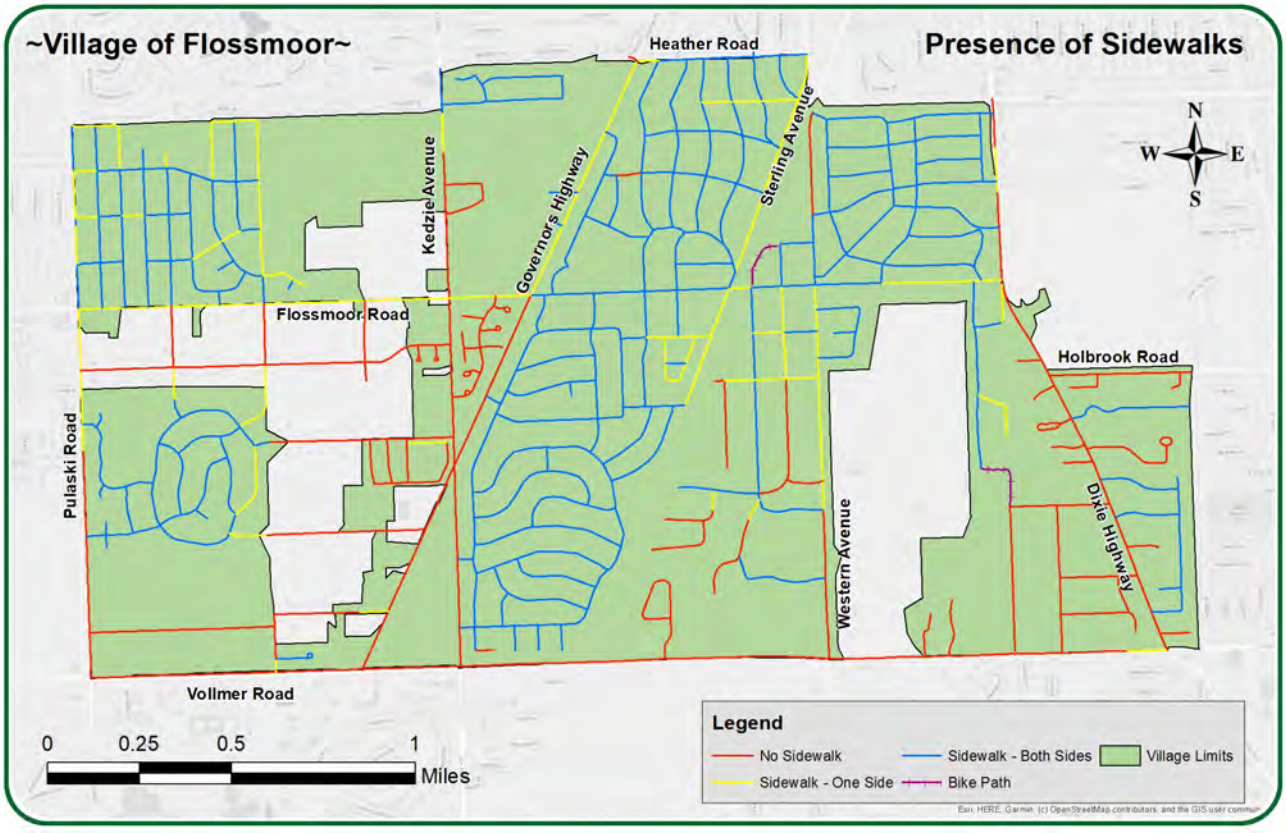


Figure 3-13. Sidewalk Presence Map

3.3.2 Bicycle Facilities

The Village of Flossmoor features several miles of bicycle routes; however, most of these facilities are on-road without separation from motor vehicle traffic. These facilities require a moderate level of experience from bicyclists and do not offer the same level of safety and usability that separated or off-road bike paths offer.

To support bicycling and the use of public transportation, the Village of Flossmoor developed a "Bike to Metra" pamphlet in 2010 (Figure 3-14). This document overviews all available bicycle facilities in the Village and highlights them as a safe and effective way to travel around the community and particularly to get to the Village's local Metra station, which connects to Chicago and adjacent suburbs.

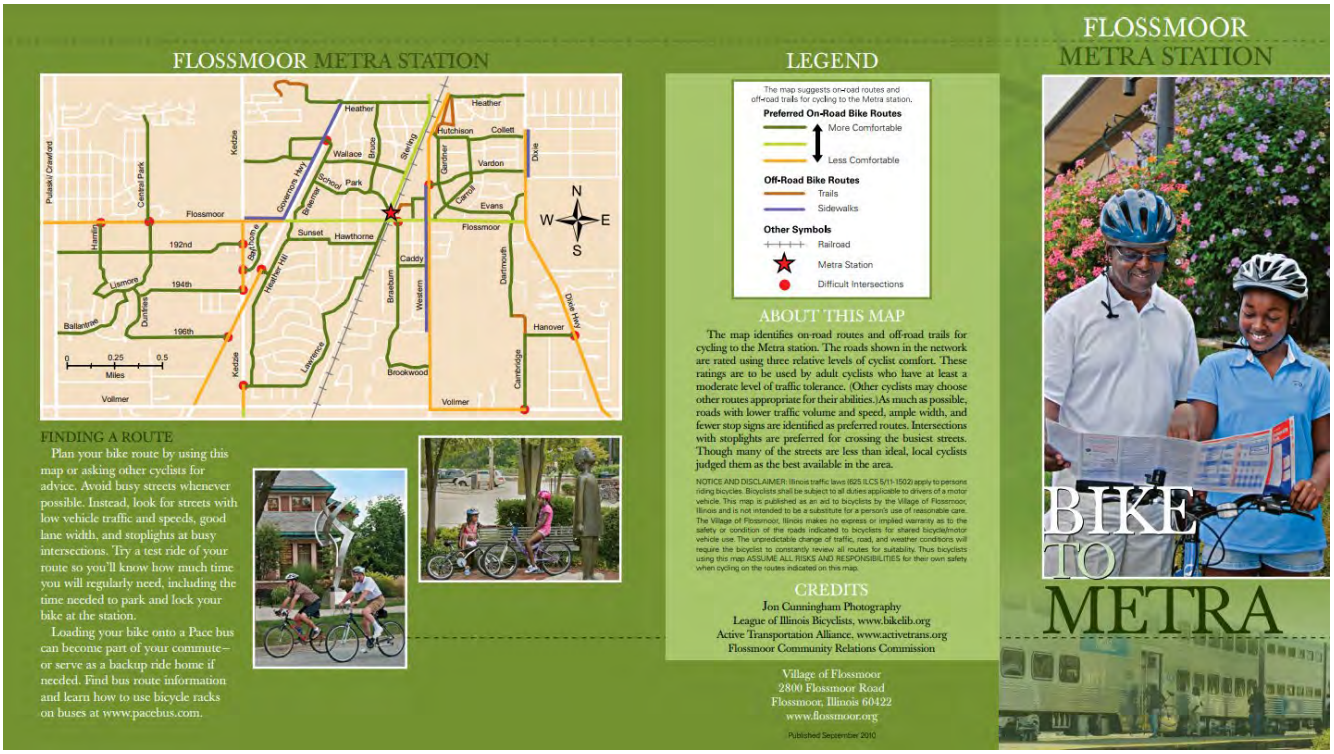


Figure 3-14. Snapshot of Village of Flossmoor's "Bike to Metra" Pamphlet

3.4 Public Transportation

Though it may not be apparent, public transportation plays an important role in transportation safety in urban environments such as the Village of Flossmoor. By consolidating many trips by different road users into a single vehicle, public transportation has the effect of reducing traffic and putting the steering wheel in the hands of professionally trained and law-abiding drivers, reducing road users' exposure to driving hazards related to congestion and inconsistent or aggressive driving behaviors. Similarly, when public transportation options are available, this provides residents with options to get to and from events other than driving when tired, intoxicated, or otherwise unable to drive safely. Finally, with transportation equity considered a defining element of traffic safety, public transportation options improve safety for all road users by providing an accessible option to move around an area safely and reliably, especially for those without a car who may otherwise need to walk in challenging situations and locations.

Currently available public transportation options in the Village of Flossmoor include the Metra Electric Line station and multiple Pace bus routes that pass through neighboring municipalities but which do not directly serve the Village.

3.4.1 Metra Station

Centrally located within the Village of Flossmoor is a station along Metra's Electric Line, which connects the Village to Chicago's downtown area at Millennium Station, 25 miles away. This public transit service simplifies commuters' trips to downtown Chicago and the surrounding area, removing some traffic from Flossmoor's roadways and reducing residents' exposure to the hazards of additional driving. The station is intended to be accessible by walking and biking, encouraging active transportation for locals and providing effective options for households without cars to get around the area.

The area surrounding the Metra station has been noted by community members and stakeholders as a location of concern for traffic safety, both for vulnerable road users like pedestrians and bicyclists as well as motorists. This is largely due to the complex geometry of the intersections adjacent to the station and serving traffic accessing the station. Similarly, extensive parking near the station constricts traffic and creates many conflict points that may pose risks to pedestrians maneuvering the area. Additionally, with multiple pedestrian crossings along Sterling Avenue and Park Drive, instances where large crowds of train passengers need to cross after exiting a train cause backups in traffic that may result in aggressive driving maneuvers and endanger vulnerable road users. More appropriate management of both vehicular and pedestrian traffic at this location could help to improve safety for all road users while also reducing issues related to slow-downs and congestion.

3.4.2 Pace Bus System

Though the Village of Flossmoor is not directly served by any regular bus transit systems, a few Pace bus routes pass near the Village and may serve some residents. Pace Route 372 passes to the east of the Village, running along Dixie Highway briefly. Routes 356 and 359 also pass less than a mile to the north of the Village, running along 183rd Street. These bus routes serve the southern suburban region of CMAP, connecting many municipalities.

4. Demographics and Community Information

This section discusses key demographics of the Village of Flossmoor to support a complete understanding of the Village for the sake of the LRSP. Insights about the population and context of the Village can help stakeholders and analysts understand how socioeconomics, culture, and other contextual factors may influence current safety performance as well as the best strategies for improving safety performance through LRSP strategies and projects. For comparison, statistics are provided for Cook County as well as the entire CMAP region. Note that the statistics are approximations based on projections from available census data as provided by CMAP and may differ from other sources based on analysis year and methodology.

4.1 Population Characteristics

The Village of Flossmoor has a population of 9,427 according to CMAP's community snapshot, representing approximately 0.1 percent of the metropolitan area's total population. Since the year 2000, the Village has experienced a slight increase in population (+1.4 percent), despite a small decrease over the past decade. The majority of Flossmoor's residents identify as non-Hispanic black (59.3 percent), with 35.4 percent identifying as non-Hispanic white. The median age of residents is 46.1, which is notably higher than that of the CMAP region, which is 37.2.

Table 4-1. General Population Characteristics, 2014-2018

	Flossmoor	Cook County	CMAP Region
TOTAL POPULATION	9,427	5,223,719	8,511,032
TOTAL HOUSEHOLDS	3,329	1,963,070	3,107,682
AVERAGE HOUSEHOLD SIZE	2.8	2.7	2.7
% POPULATION CHANGE, 2000-2010	+1.8	-3.4	+3.5
% POPULATION CHANGE, 2010-2018	-0.4	+0.6	+0.9
% POPULATION CHANGE, 2000-2018	+1.4	-2.8	+4.5

Source: https://www.cmap.illinois.gov/documents/10180/102881/Flossmoor.pdf

Table 4-2. Race and Ethnicity, 2014-2018

	Flossmoor	Cook County	CMAP Region
WHITE NON-HISPANIC	3,339 (35.4%)	2,217,734 (42.5%)	4,367,579 (51.3%)
HISPANIC OR LATINO	354 (3.8%)	1,314,232 (25.2%)	1,944,675 (22.8%)
BLACK NON-HISPANIC	5,586 (59.3%)	1,213,706 (23.2%)	1,419,547 (16.7%)
ASIAN NON-HISPANIC	81 (0.9%)	372,825 (7.1%)	603,513 (7.1%)
ALL OTHER CATEGORIES	67 (0.7%)	105,222 (2.0%)	175,718 (2.1%)

Source: https://www.cmap.illinois.gov/documents/10180/102881/Flossmoor.pdf

Table 4-3. Age Cohorts, 2014-2018

	Flossmoor	Cook County	CMAP Region
19 AND UNDER	2,490 (26.4%)	1,285,493 (24.6%)	2,191,110 (25.7%)
20 TO 34	1,206 (12.8%)	1,204,516 (23.1%)	1,807,984 (21.2%)
35 TO 49	1,653 (17.5%)	1,037,641 (19.9%)	1,713,974 (20.1%)
50 TO 64	1,999 (21.2%)	971,339 (18.6%)	1,641,420 (19.3%)
65 TO 74	1,302 (13.8%)	409,962 (7.8%)	669,758 (7.9%)
75 TO 84	434 (4.6%)	217,767 (4.2%)	337,105 (4.0%)
85 AND OLDER	343 (3.6%)	97,001 (1.9%)	149,681 (1.8%)
MEDIAN AGE	46.1	36.6	37.2

Source: https://www.cmap.illinois.gov/documents/10180/102881/Flossmoor.pdf

4.2 Country of Birth and Language

Within the Village of Flossmoor, approximately 93.0 percent of residents were born within the United States. Of the Village's residents, 88.8 percent speak English exclusively, with less than 1.0 percent speaking English less than "very well" according to census data. Understanding these factors may be very important to the development and implementation of the LRSP, ensuring that strategies employed to improve roadway safety account for cultural, linguistic, and other needs of all motorists who use the Village's roadway network.

Table 4-4. Country of Birth, 2014-2018

	Flossmoor	Cook County	CMAP Region
NATIVE	8,156 (93.0%)	77.7%	79.7%
FOREIGN BORN	612 (7.0%)	22.3%	20.3%

Source: https://www.cmap.illinois.gov/documents/10180/102881/Flossmoor.pdf

Table 4-5. Ability to Speak English, 2014-2018

	Flossmoor	Cook County	CMAP Region
ENGLISH ONLY	7,788 (88.8%)	3,173,795 (64.8%)	5,489,328 (68.7%)
LANGUAGE OTHER THAN ENGLISH	980 (11.2%)	1,722,080 (35.2%)	2,495,708 (31.3%)
SPEAK ENGLISH LESS THAN "VERY WELL"	92 (1.0%)	681,519 (13.9%)	960,908 (12.0%)

Source: https://www.cmap.illinois.gov/documents/10180/102881/Flossmoor.pdf

4.3 Socioeconomic Information

Residents of the Village of Flossmoor tend to have a higher level of education than residents of the whole CMAP region, with more than one-third of residents having a graduate or professional degree—38.6 percent compared to 15.4 (Table 4-6). This correlates with a significantly higher median income for the Village's households, $106,794 compared to $70,444 across the CMAP region. Similarly, Over 32.2 percent of Flossmoor's households have an income of over $150,000. Residents are also more likely to live in a housing unit that they own instead of rent, with 80.9 percent of occupied housing units in the Village being owner-occupied compared to 58.4 percent across the CMAP region.

Table 4-6. Educational Attainment, 2014-2018

	Flossmoor	Cook County	CMAP Region
LESS THAN HIGH SCHOOL GRADUATE	218 (3.5%)	477,426 (13.3%)	684,093 (11.9%)
HIGH SCHOOL GRADUATE OR EQUIVALENCY	722 (11.5%)	837,569 (23.3%)	1,319,895 (22.9%)
SOME COLLEGE, NO DEGREE	1,227 (19.5%)	675,501 (18.8%)	1,110,944 (19.3%)
ASSOCIATE DEGREE	223 (3.5%)	234,559 (6.5%)	400,050 (7.0%)
BACHELOR'S DEGREE	1,474 (23.4%)	811,185 (22.6%)	1,352,126 (23.5%)
GRADUATE OR PROFESSIONAL DEGREE	2,434 (38.6%)	550,789 (15.4%)	888,642 (15.4%)

Source: https://www.cmap.illinois.gov/documents/10180/102881/Flossmoor.pdf

Table 4-7. Household Income, 2014-2018

	Flossmoor	Cook County	CMAP Region
LESS THAN $25,000	246 (7.4%)	418,106 (21.3%)	551,715 (17.8%)
$25,000 TO $49,999	334 (10.0%)	397,266 (20.2%)	585,464 (18.8%)
$50,000 TO $74,999	393 (11.8%)	318,622 (16.2%)	504,014 (16.2%)
$75,000 TO $99,999	518 (15.6%)	234,678 (12.0%)	390,392 (12.6%)
$100,000 TO $149,999	766 (23.0%)	289,976 (14.8%)	516,533 (16.6%)
$150,000 AND OVER	1,072 (32.2%)	304,422 (15.5%)	559,564 (18.0%)
MEDIAN INCOME	$106,794	$62,088	$70,444

Source: https://www.cmap.illinois.gov/documents/10180/102881/Flossmoor.pdf

4.4 Transportation

Transportation patterns and commuting behaviors compose another key set of demographics for consideration for the LRSP. Flossmoor's residents are more likely than the rest of the region's residents to own at least one vehicle and are more likely to have two or more vehicles available per household. Additionally, of the Village of Flossmoor's 3,434 regular commuters, 71.8 percent drive alone as their

mode of travel to work, with 18.3 percent using public transit and only 1.6 percent walking or biking. These factors translate into an overall significantly higher distance traveled by car for residents, summarized with the metric of 21,536 vehicle miles traveled each year for the average Flossmoor household, compared to 17,165 vehicle miles traveled each year for the CMAP region's residents. Considering common models for quantitative safety analysis and crash prediction, this relatively high value for miles driven indicates a higher level of *exposure* to Flossmoor's motorists, with their relatively large proportion of time driving on roadways indicating a potentially elevated probability of experiencing a roadway crash compared to motorists who drive less.

These factors, along with the further context provided in other sections about transportation and mobility data, will be crucial in determining the most appropriate safety measures given the Village's roadway network and its residents' needs and driving patterns.

Table 4-8. Vehicles Available per Household, 2014-2018

	Flossmoor	Cook County	CMAP Region
NO VEHICLES AVAILABLE	185 (5.6%)	347,470 (17.7%)	394,626 (12.7%)
1 VEHICLE AVAILABLE	989 (29.7%)	794,734 (40.5%)	1,104,851 (35.6%)
2 VEHICLES AVAILABLE	1,575 (47.3%)	590,946 (30.1%)	1,103,712 (35.5%)
3 OR MORE VEHICLES AVAILABLE	580 (17.4%)	229,920 (11.7%)	504,493 (16.2%)

Source: https://www.cmap.illinois.gov/documents/10180/102881/Flossmoor.pdf

Table 4-9. Mode of Travel to Work, 2014-2018

	Flossmoor	Cook County	CMAP Region
WORK AT HOME	419 (N/A)	118,014 (N/A)	214,903 (N/A)
DRIVE ALONE	2,464 (71.8%)	1,534,352 (64.4%)	2,856,015 (72.4%)
CARPOOL	273 (7.9%)	199,897 (8.4%)	323,107 (8.2%)
TRANSIT	627 (18.3%)	475,363 (20.0%)	551,089 (14.0%)
WALK OR BIKE	54 (1.6%)	135,045 (5.7%)	163,932 (4.2%)
OTHER	16 (0.5%)	36,178 (1.5%)	51,124 (1.3%)
TOTAL COMMUTERS	3,434 (100%)	2,380,835 (100%)	3,945,267 (100%)
MEAN COMMUTE TIME (MINUTES)	N/A	33.3	31.8

Source: https://www.cmap.illinois.gov/documents/10180/102881/Flossmoor.pdf

Table 4-10. Annual Vehicle Miles Traveled per Household, 2014-2018

	Flossmoor	Cook County	CMAP region
AVERAGE VEHICLE MILES TRAVELED	21,536	14,123	17,165

Source: https://www.cmap.illinois.gov/documents/10180/102881/Flossmoor.pdf

5. Land Use and Economic Development

This section describes the primary land uses around the Village of Flossmoor. Figure 5-1 shows the proportion of parcels by the respective land-use description. Nearly 82 percent of the parcels in Flossmoor are made up of three land-use types: urbanized, vacant/undeveloped land, and commercial.

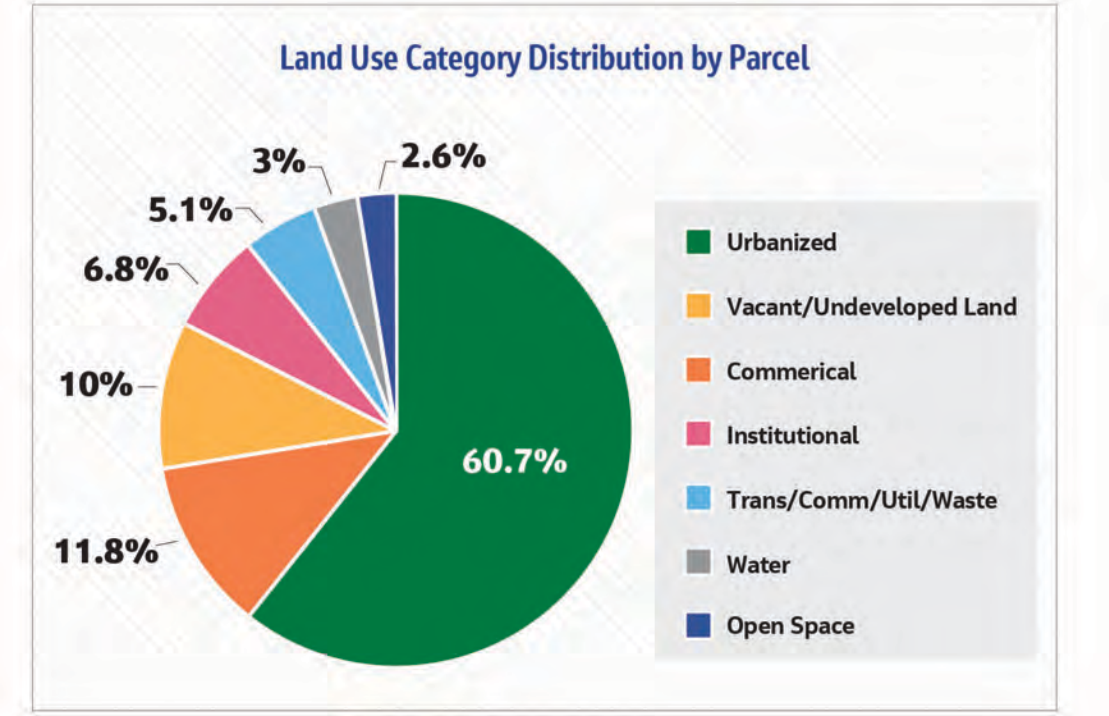


Figure 5-1. Land-Use Category Distribution by Parcel Count

Similarly, Figure 5-2 shows the distribution of land codes by area. Sixty-eight percent (1,350 acres) of the land area within the Village boundary is coded as urbanized. Institutional and open-space land uses make up 11 and 10 percent of the Village area, respectively. The open-space areas typically consist of parks, bodies of water, and wildlife refuges.

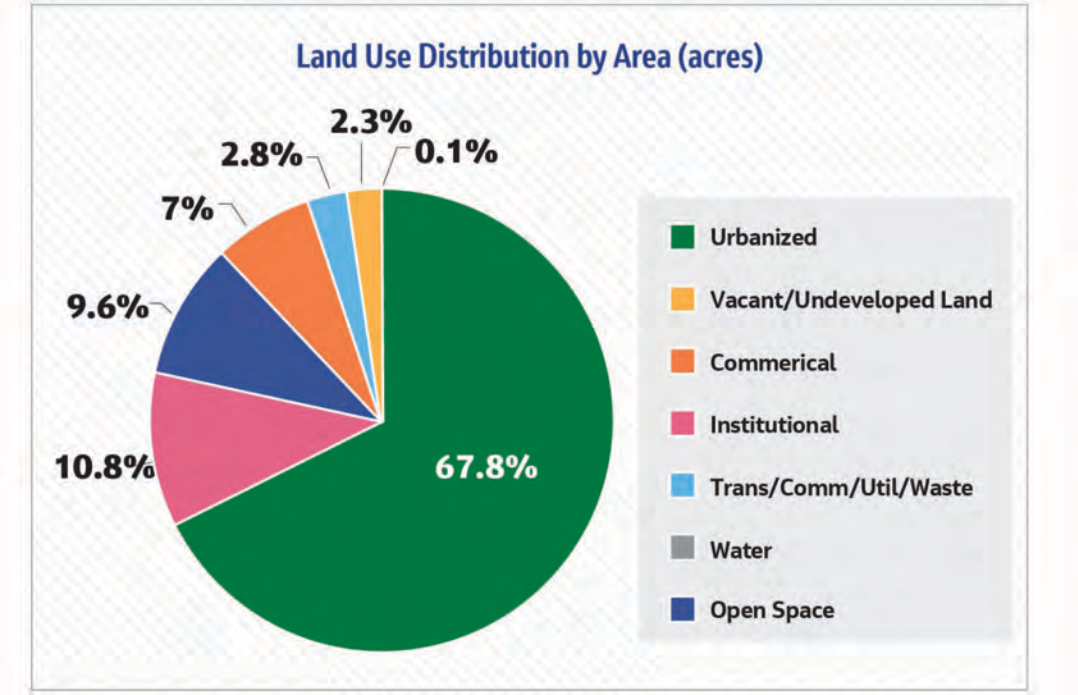


Figure 5-2. Land-Use Category Distribution by Area

Figure 5-3 shows the land-use categories throughout the Village of Flossmoor.

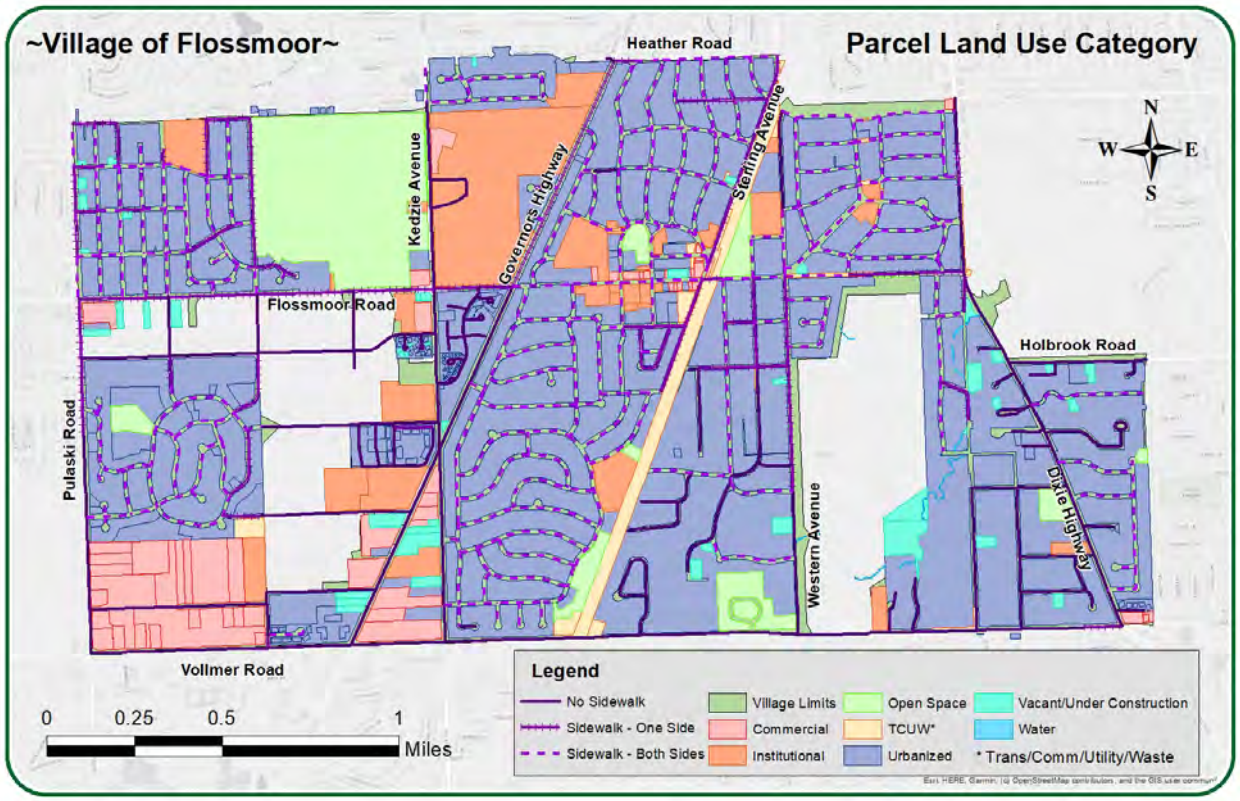


Figure 5-3. Land-Use Map

5.1 Urbanized Land-Use Category

The following are Urbanized Land-Use subcategories:

- Single-family (detached) homes, which account for approximately 43 percent of the total acres
- Single family (attached)
- Multifamily
- Open spaces in residential developments

5.2 Institutional Land-Use Category

Institutional Land Use accounts for approximately 11 percent of the land area, with the following subcategories:

- Twelve religious facilities
- Eleven K-12 educational facilities
- Six government administration and services
- Two medical facilities
- One cemetery and one "Other" subcategory

5.2.1 Schools

There are six public schools in School District 161, one high school (Homewood-Flossmoor) in School District 233, two private schools, and two higher-educational institutions (Prairie State College and Governors State University). Figure 5-4 shows school location and sidewalks.

Appendix C - Outreach Memorandum

Village of Flossmoor Local Road Safety Plan

Outreach Memorandum

Document No. | 1

October 21, 2021

Chicago Metropolitan Agency for Planning

Client Reference

Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved

Distribution of copies

Revision	Issue approve	Date issued	Issued to	Comments

Contents

1. Introduction

1.1 Project Overview

With a vision to improve traffic safety and the quality of life of its residents, the Village of Flossmoor has elected to develop a comprehensive Local Road Safety Plan (LRSP). Through the support of the Chicago Metropolitan Agency for Planning (CMAP), the LRSP will foster collaboration with residents and local stakeholders to identify and equitably address the Village's most pressing traffic safety concerns—for all road users.

LRSPs take a proactive approach to understanding and addressing unmet traffic safety needs of local residents. As communities grow and evolve, so do their transportation facilities and movement patterns, and so must their plans to achieve safe operations. By leveraging contemporary traffic safety research, historical safety performance data, and the invaluable insights of the residents who drive, walk, and bike on these facilities every day, the LRSP will identify practical goals for the Village's roadways, sidewalks, and bicycle facilities, as well as holistic strategies for achieving those goals.

Once the current state of traffic safety is understood through a data-driven evaluation of existing conditions as well as extensive engagement with stakeholders, steps can be identified to improve safety performance. This memorandum discusses the public outreach efforts of the LRSP team and residents' input through these efforts. In the following sections, each outreach effort will be overviewed and key insights from over 300 comments received through public input will be shared.

1.2 Document Purpose

Early in the process of developing the LRSP for the Village of Flossmoor, a Communications and Outreach Strategy document was developed. This document identifies appropriate approaches and formats to engage the community in the planning process, soliciting feedback from a wide audience to inform the LRSP. Based on this along with discussions with the LRSP team and the LRSP Steering Committee, four main approaches were identified:

- Development of a community-facing website with information and a web map for visitors to directly provide comments, safety concerns, and suggestions for improving safety
- Distribution of a community survey to solicit more in-depth information about residents' travel patterns, safety concerns, and suggestions for improving safety
- Participation in Flossmoor's National Night Out event on August 3, 2021 by tabling, distributing informational materials, and soliciting public comments
- Participating in Flossmoor's annual Flossmoor Fest event on September 11, 2021 by tabling, distributing informational materials, and soliciting public comments

Based on these four outreach activities, over 350 individual comments and survey responses were collected, providing invaluable input in the process of assessing the safety performance of Flossmoor's transportation network and in the development of the LRSP and its related documents. These four activities and the comments and information received through them are discussed further in the following sections.

This document will present information about outreach activities performed in development of the LRSP and associated public input. Recommendations for policies and countermeasures in response to this input as well as comprehensive analysis of Flossmoor's traffic safety performance will be presented in the associated

Countermeasure and Policy Recommendations Memorandum, and final recommendations and planning materials will be presented in the LRSP. Through this initiative, the Village of Flossmoor will develop a practical and actionable standalone safety plan that will be used in the coming years to improve transportation safety for all road users.

2. Public Outreach Activities

As the LRSP process begins to take its final shape, it is important to recognize and evaluate the outreach efforts that have occurred throughout the plan development. Based on the potential activities described in the Communications and Outreach Strategy document, there were two active public engagement activities (National Night Out and Flossmoor Fest) and two passive engagement tools (Project Website and Community Survey). The following sections describe the efforts taken to accomplish community engagement and to evaluate the invaluable input from local residents.

2.1 LRSP Steering Committee

To engage the community directly, a steering committee of local volunteer stakeholders was assembled. The committee, designed to reflect a variety of views and roles within Flossmoor, included representatives of local communities, schools, public services, interest groups, and small business owners. Over the course of the LRSP development process, the committee was convened four times for remote meetings via the Zoom online meeting platform. These meetings were intended to share with the committee each step of the LRSP development process, allowing them the opportunity to participate, offer input, and help guide the LRSP and related documents. Outside of these meetings, committee members were given opportunities to directly comment on technical documents being drafted during the LRSP process as well as the final LRSP document itself to ensure that the plan accurately reflected their communities and their understandings of the needs of the people of the Village of Flossmoor.

2.2 Community-facing Website

The project website created by CMAP was introduced at the beginning of the project to provide a level of transparency to the local community about the initiatives the Village of Flossmoor was taking to promote safe travel and safe transportation networks. Resources included to describe what an LRSP is and how this effort will be focused on the Village of Flossmoor, an option to subscribe for project updates, high-level project timeline, a "Frequently Asked Questions" page that provides answers to who is involved, how public input will be used in the final plan. Links were also provided to those who want a more in-depth review of completed efforts, such as the Existing Conditions Report, as well as links to an interactive webmap (Figure 2-1) and community survey focused on roadway safety topics.

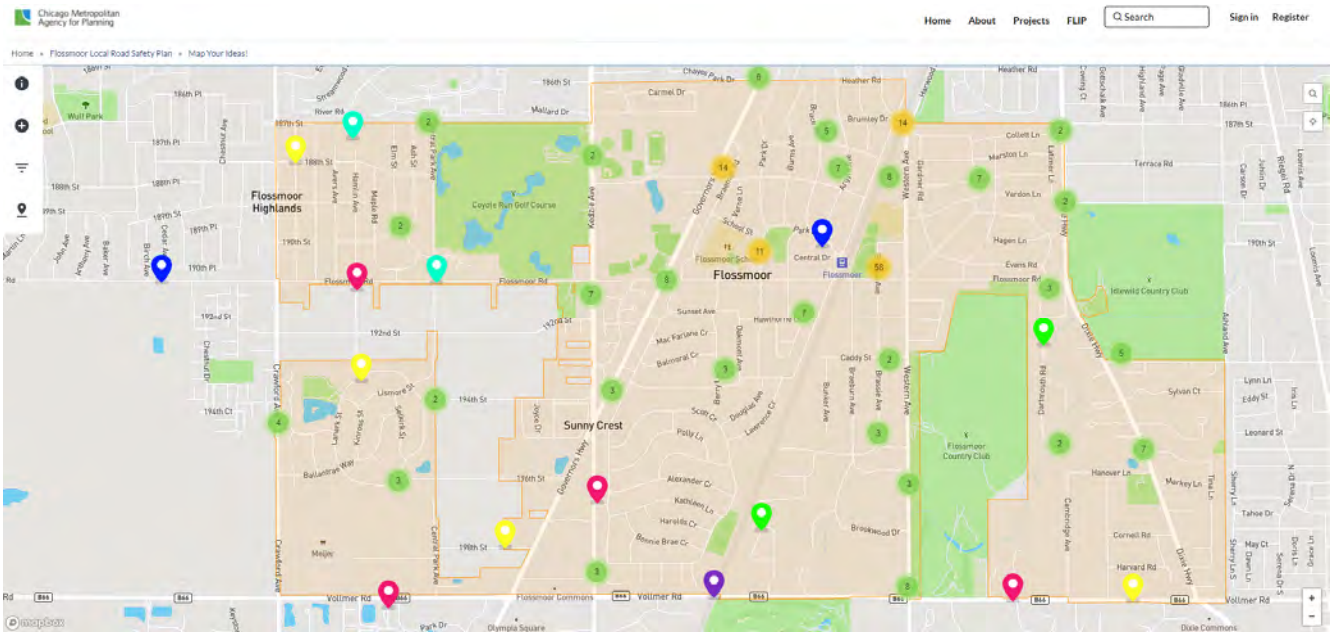


Figure 2-1: Interactive Webmap of the Village of Flossmoor

Over 80 percent of the total website visits occurred since August 2021, indicating that the outreach efforts were coordinated with the National Night Out and Flossmoor Fest events ahead of the new school year. Parents and residents alike who visited the CMAP tables during these events were encouraged to visit the website and participate in a short survey about road safety in Flossmoor and to provide as many comments as desired to the interactive webmap in order to gain invaluable public perspective. Those who had the opportunity to engage with the interactive map had the choice to select six different categories and place a pin at locations of concern and provided comments or observations. The comments received from the interactive map have been synthesized and are described with more detail in Section 3.

2.3 Road Safety Survey

The intention of the road safety survey was to gather information on how the community views general transportation safety-related questions, travel and community demographic information. Free-form submissions were reviewed and quantitative results were aggregated to better understand potentially overlapping concerns. The results of the survey can be viewed in more detail in Appendix A which has a copy of a blank survey and summary charts. Some of the key takeaways from the survey include a strong representation of respondents (over 93 percent) lived within the Village of Flossmoor, 46 submissions resulted in nearly 70 specific locations of concern and over 56 percent of respondents were over the age of 50. Figure 2-2 shows the results of survey question 4, where responders were asked to rank the categories based on their personal level of concern. The top three areas of concern overlap with most of the Emphasis Areas (See Section 3.2) that were identified through the data analysis effort. The survey results are confirmation that the Emphasis Areas selected form the analysis represent the residents' concerns.

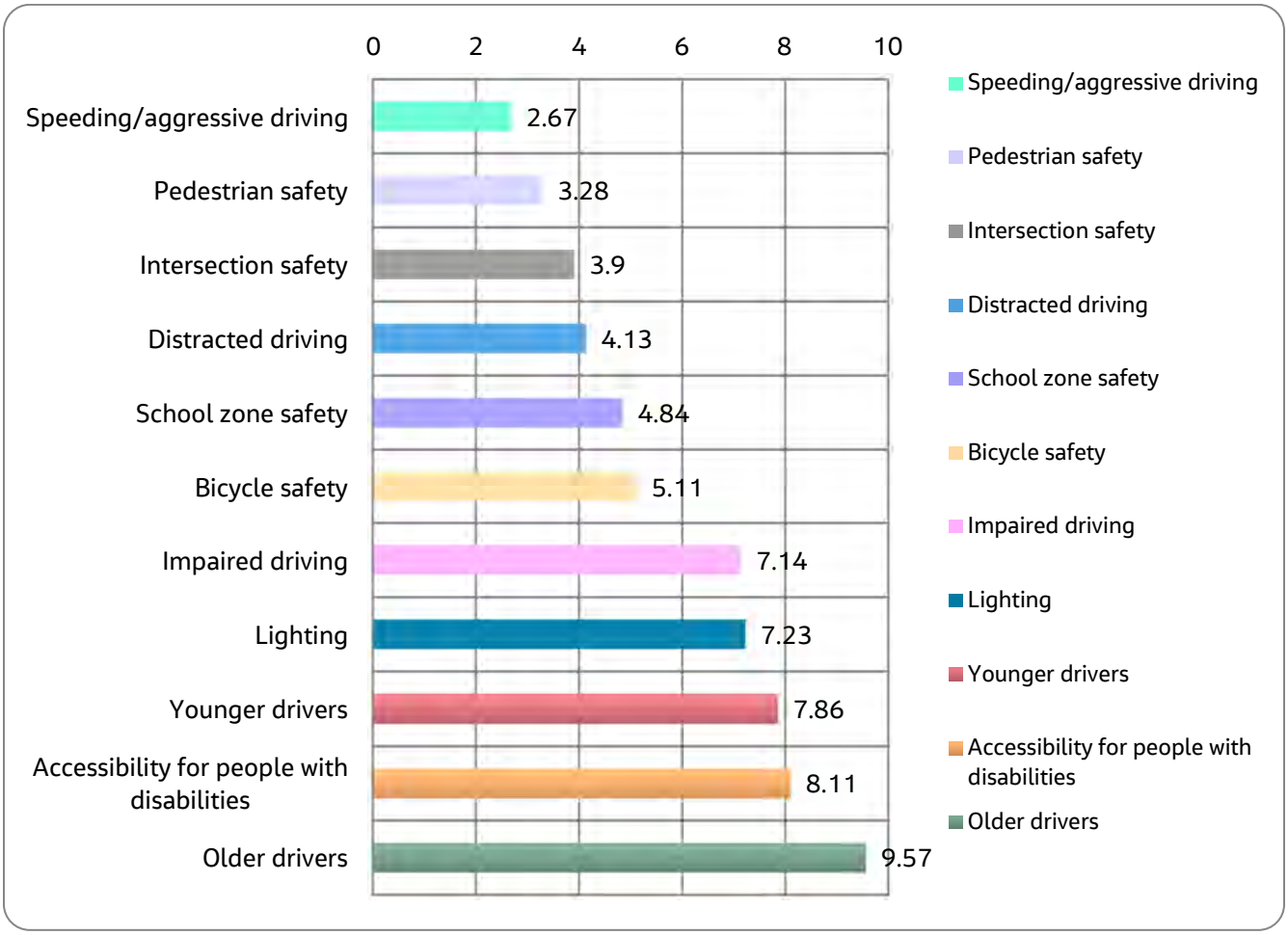


Figure 2-2 Road safety survey results for prioritization of safety concerns (in decreasing order of priority)

2.4 National Night Out

The Village of Flossmoor hosted a National Night Out event near the Flossmoor Police Department and Village Hall on the evening of August 3, 2021. The event was part of a nationwide effort to strengthen police and community relations through socializing, games, and refreshments. The LRSP team participated in this event as part of the LRSP development process to engage community members about traffic safety topics, solicit input as part of the team's data gathering process, and help spread the word of the development of a Village of Flossmoor LRSP.

At the event, the LRSP team had a map of the Village of Flossmoor posted on an easel for attendees to provide their input on specific locations and safety concerns they have within the village. Stickers of different colors were used which represented categories of concerns (e.g., speeding, intersection-related, pedestrian) and were placed on the map by staff based on attendee input. Additionally, staff took notes of the input which were then compiled and associated with sticker locations using Google Earth.

Resident input focused largely on concerns related to speeding and pedestrian safety across the village, especially around the central business district and the village's schools and parks. Though many informative flyers and other handouts were offered at the table, attendees didn't show much interest in these. A summary of comments received from the event are in the consolidated comments data set and explored further in the following sections.

Figure 2-3 CMAP table at the National Night Out

2.5 Flossmoor Fest

The Village of Flossmoor hosted its annual Flossmoor Fest in the village's central business district, centered around the downtown train station. The event took place on September 11, 2021, going from noon to 10 PM. The LRSP team hosted a table from noon to 5 PM as part of the LRSP development process to engage community members about traffic safety topics, solicit input as part of the team's data gathering process, and help spread the word of the plan being developed.

At the event, CMAP had a map of the Village of Flossmoor posted on an easel along with a second similar map posted on the table itself for attendees to provide their input on specific locations and safety concerns they have within the village. Stickers of different colors were used which represented categories of concerns (e.g., speeding, intersection-related, pedestrian) and were placed on the map by staff based on attendee input. Additionally, staff took notes of the input which were then compiled and associated with sticker locations using Google Earth. The map on the table also featured on its reverse side a selection of infrastructure safety improvements identified by the LRSP team as being priority recommendations. These were shared with attendees to illustrate potential opportunities for improving safety and to introduce residents to potential recommendations being made by CMAP as part of the LRSP. These recommendations were received well and no negative feedback was recorded by staff in response to the countermeasures presented.

Resident input focused largely on concerns related to speeding and pedestrian safety across the village, especially around the central business district and village schools and parks. Though the majority of interactions were with adults attending the festival, notably many middle school- and high school-aged visited the table and provided very helpful insights related to pedestrian and bicycle travel patterns and safety concerns around the village. These are all summarized in the consolidated comments data set and are explored further in the following sections.

3. Community Input

3.1 Comment Overview

In total, more than 350 comments were collected from community members through the online road safety survey, the interactive webmap posted on the LRSP website, and through interactions at the National Night Out and Flossmoor Fest events. Many respondents provided multiple comments, and some responded to multiple community input modes to further elevate their concerns. Figure 3-1 shows the distribution of comments that were received from each of the sources. Analysis of survey, webmap, and in-person comments was performed to determine predominant patterns in safety concerns identified by community members. Distribution of comments by emphasis area (e.g., high-level groupings of safety concerns), categorical subject, and geography are discussed in the following subsections.

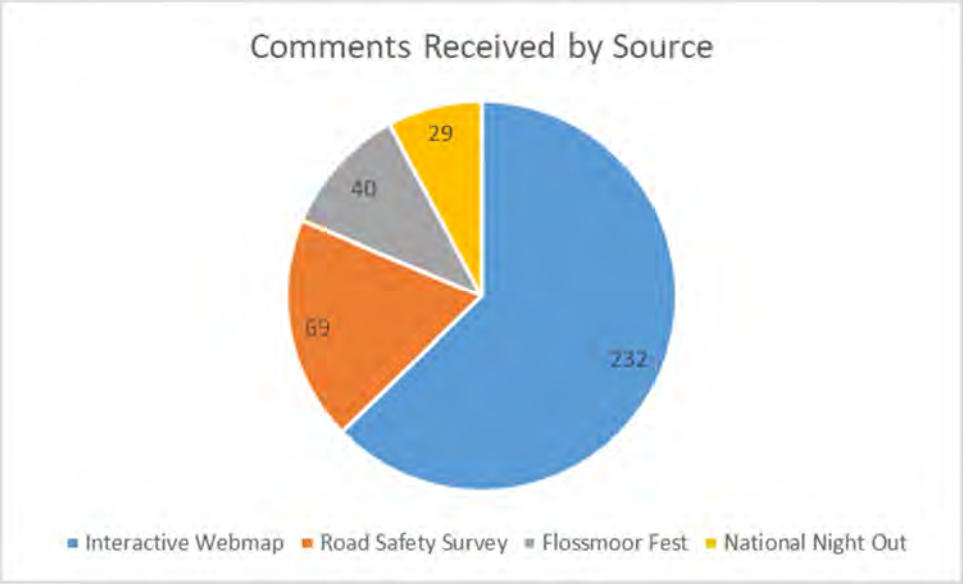


Figure 3-1 Number of comments by input source

Based on a review of all comments received, distinct patterns and trends were noticed which will inform countermeasure and policy recommendations in future planning documents. Some of the key areas and topics highlighted by commenters include the following:

- Speeding, aggressive driving and non-compliance with traffic laws were largely observed along the higher functioning roads such as Governors Highway, Flossmoor Road, Western Avenue, Kedzie Avenue and Vollmer Road.
- Pedestrian and bicycle facilities were lacking connectivity to downtown and distressed pavement markings created an unsafe feeling for non-motorized road users.
- Investment in active transportation networks to access schools and parks was highly desired.
- Pick-up and drop-off times near schools are creating significant congestion during commuting hours
- Multiple residential streets are being used for through traffic to bypass main roads; this causes speeding and reckless driving in high-pedestrian areas.

3.2 Emphasis Area Distribution

Emphasis Areas are a tool used in traffic safety analysis to help capture the unique needs of a study area in a few defined categories. Each emphasis area is defined based on patterns of crashes, patterns of driver behaviors associated with crashes, or patterns of environments involved in crashes. The following four Emphasis Areas were chosen specifically for the Village of Flossmoor based on the unique safety performance of the village's roadway network. They were determined based on a comprehensive crash analysis performed during the Existing Conditions Report, priorities expressed by the LRSP Steering Committee and project team, and extensive input from the public.

- Pedestrians & Bicyclists
- Speed Management
- Young Road Users
- Intersections

To understand how the public's input relates to these four emphasis areas, all comments were processed to determine whether they relate to one or more emphasis area. Many of the comments included two or three emphasis areas, for example, describing distressed crosswalk markings for pedestrians at intersections. Based on this analysis, Figure 3-2 indicates that approximately 65% of all comments related to the pedestrians and bicyclists emphasis area, 47% to speed management, 42% to intersections, and 36% to young road users. Emphasis areas are not mutually exclusive and individual comments may be associated with more than one, such as a comment indicating a safety concern for a crosswalk that is difficult to cross due to speeding motorists which will be associated with both the *pedestrians and bicyclists* and the *speed management* emphasis areas. Only 6% of comments were found to not be directly related to any priority emphasis area, however these comments will be considered in the LRSP process just the same.

This analysis confirms that the selected emphasis areas effectively represent the most critical safety concerns for the Village of Flossmoor, both based on quantitative analysis of roadway safety data as well as qualitative public input data. These emphasis areas should remain the focus of the LRSP team as the development of planning documents continues.

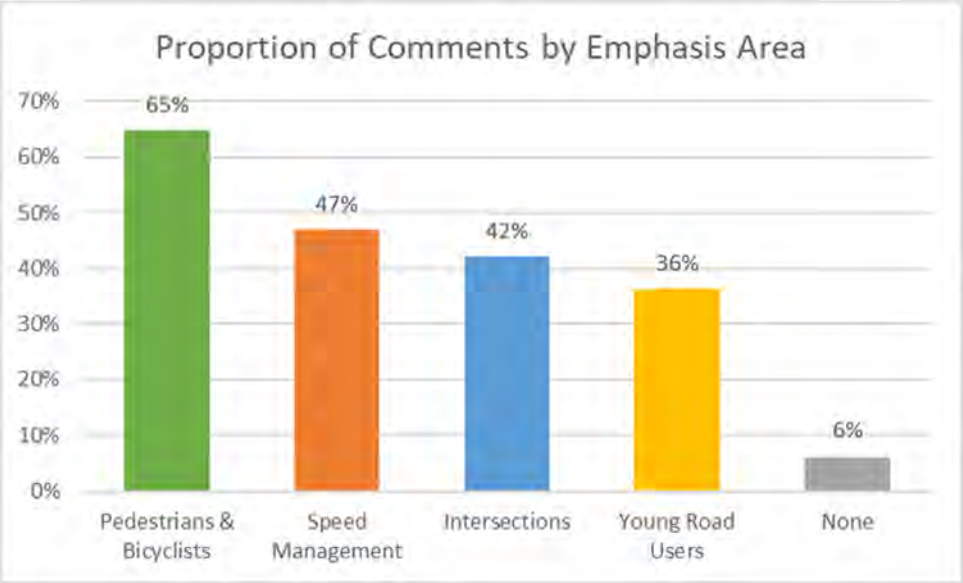


Figure 3-2 Proportion of comments by emphasis area

3.3 Categorical Distribution

To further understand the underlying concerns and considerations brought up by Flossmoor residents through outreach efforts, comments were processed to determine their association with several categorical tags. These tags correlate to concrete concerns that underlie comments, and which can be addressed through practical safety countermeasure and policy recommendations. Tags include *speed, school, signing, downtown,* and *heavy vehicle* among others, and were selected to relate public comments to identified priority recommendations discussed in the Countermeasure and Policy Recommendations Memorandum.

All comments were processed to determine whether they relate to one or more category tags. Based on this analysis, Figure 3-3 indicates that approximately 42% of all comments were related to pedestrian concerns, 34% to speed, 32% to intersections, 22% to school zones, 16% to signing, 15% to bicycles, 14% to children's safety, and more. Category tags are not mutually exclusive and individual comments may be associated with more than one, such as a comment indicating a safety concern for pedestrians near a school zone which will be tagged for both *pedestrian* and *school*. Category tags that correlate with each emphasis area are color coded to match Figure 3-2.

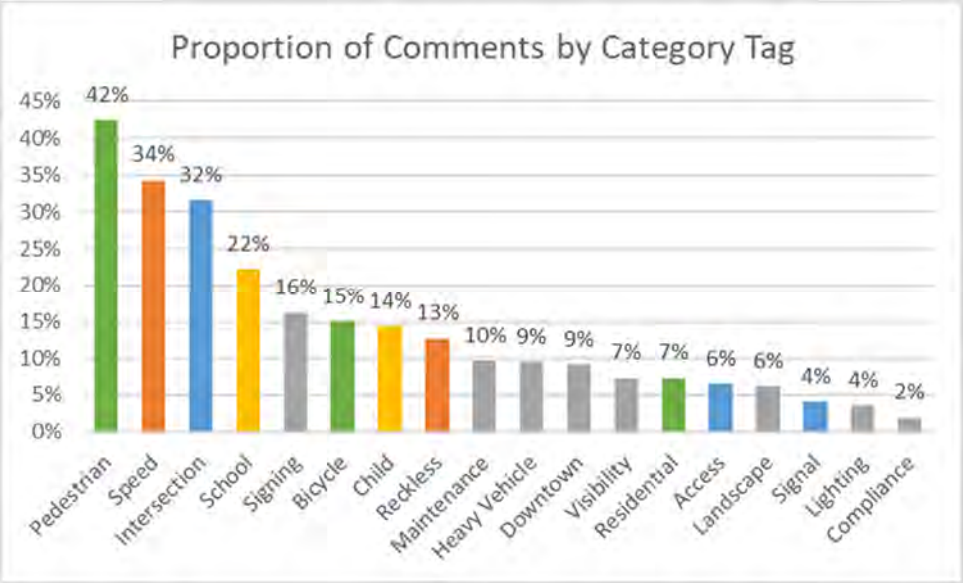


Figure 3-3 Proportion of comments by category tag

3.4 Geographic Distribution

Comments received from the public represented concerns with comments from every neighborhood within the village. The majority of comments fell within the central business district along Sterling Avenue near the Metra train station and along Flossmoor Avenue between Western Avenue and Governors Highway. There were additional clusters of comments around each school, with particularly high densities of comments around Homewood Flossmoor High School and Western Avenue Elementary School. Some additional notable geographic patterns include:

- Majority of comments within residential areas relate to speeding
- Majority of comments along Flossmoor Road relate to vulnerable road users including pedestrians, bicyclists, and school children
- Extensive concerns about speeding and reckless driving along major roads including Governors Highway, Flossmoor Road, and Western Avenue
- Many comments about pedestrian safety in the central business district
- Many comments about pedestrian access to schools and lack of connectivity and crosswalks for safe travel

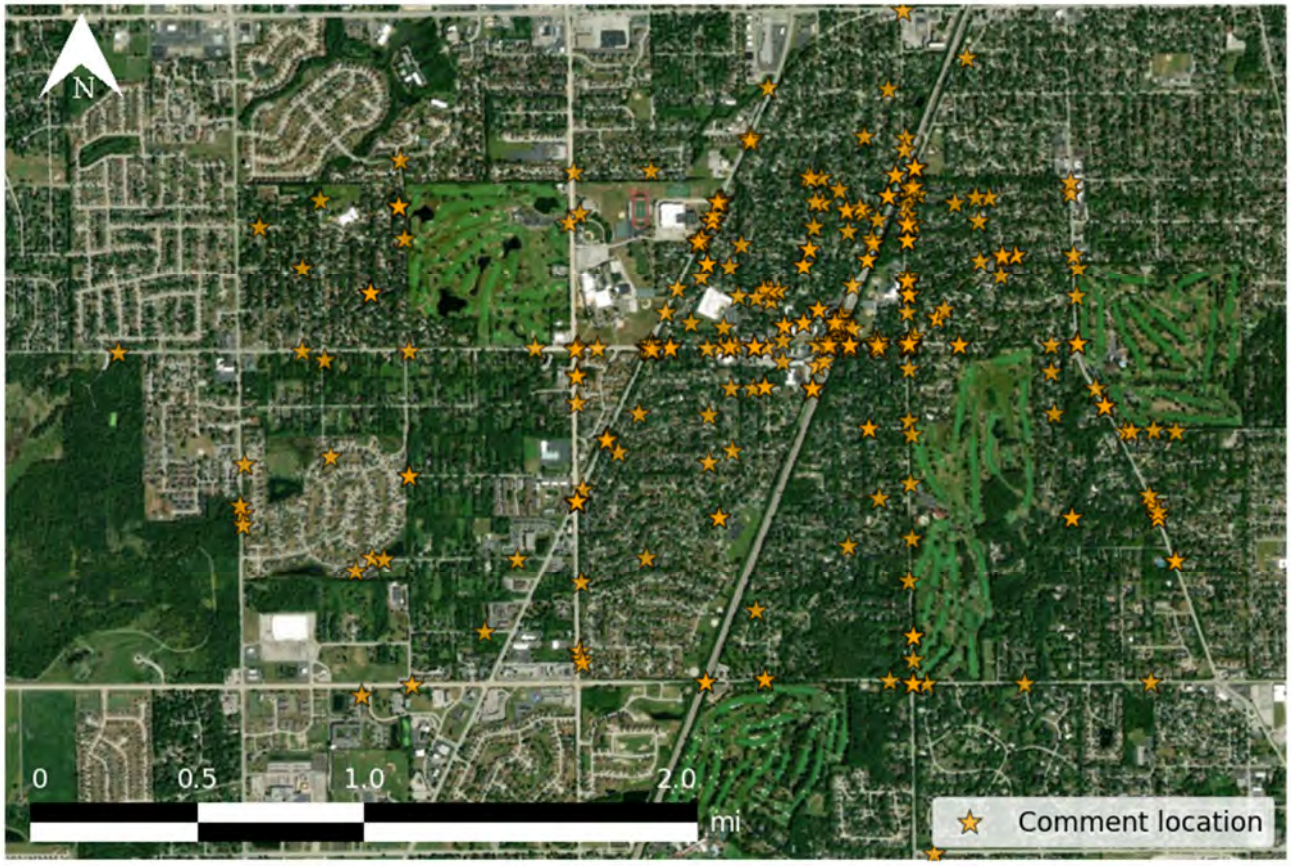


Figure 3-4 Public input comment location map

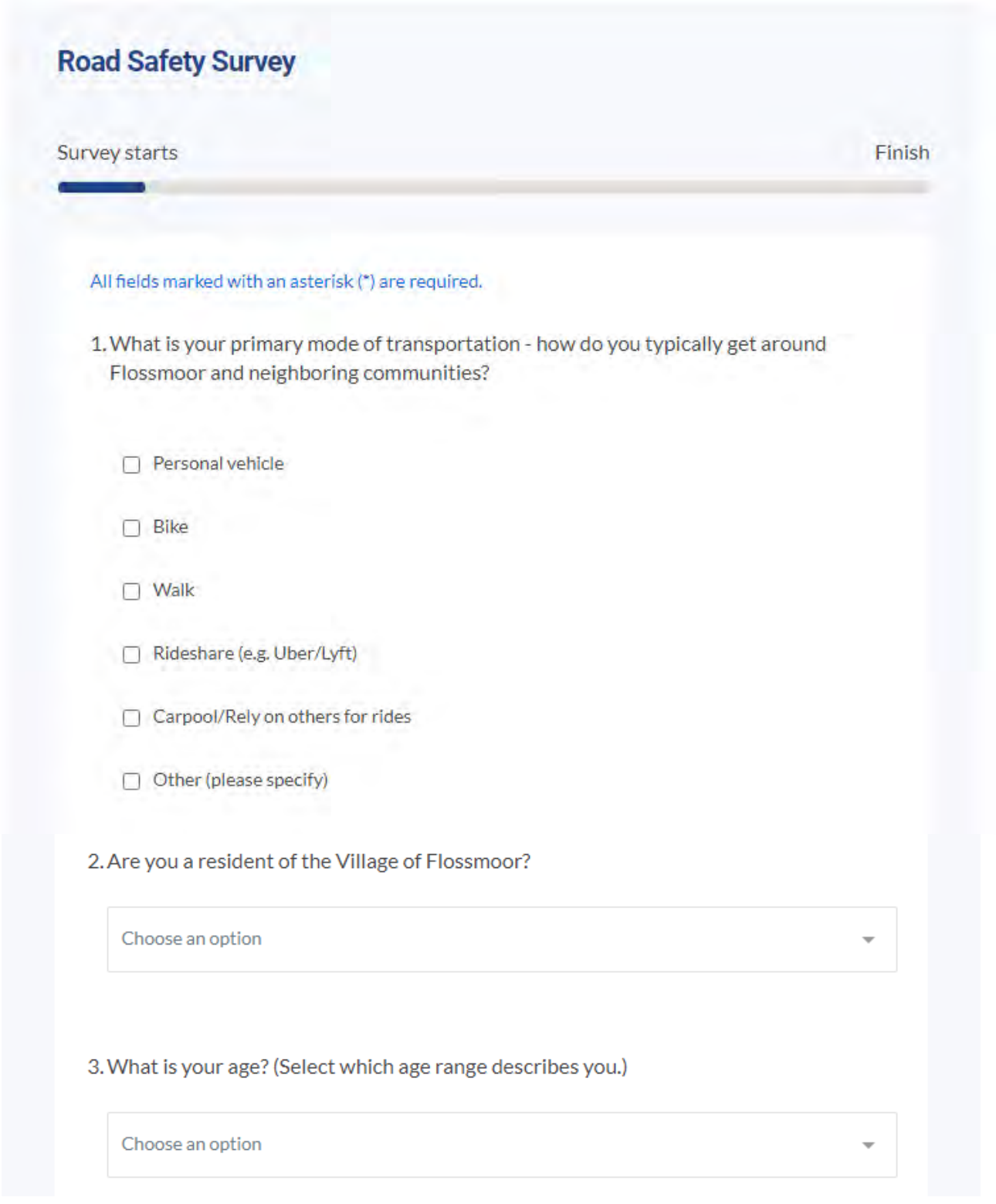
4. Next Steps for Community Engagement

Upon the publication of the final LRSP document and the adoption of the plan by the Village of Flossmoor, there will certainly be a great need for continued public engagement to ensure its success. By continuing partnerships between the Village of Flossmoor and its local stakeholders as well as CMAP and other local agencies, the implementation of the plan can be monitored, and resources can be identified along the way.

As found through the public outreach events described in this document, the community was very interested in the efforts of the LRSP and were enthusiastic about participation. By replicating these efforts, such as tabling at the National Night Out and Flossmoor Fest events to solicit public input and offer educational resources, the safety goals represented in the LRSP can be further integrated into the expectations of the community. Additionally, as the infrastructure improvements and public policy and activity recommendations identified in the LRSP and its related documents get implemented over the coming years, continued engagement with local stakeholders will help to ensure that they are received well and with proper context. By recognizing the critical role that community members play in the success of the LRSP and the pursuit of roadway safety, the Village of Flossmoor and its partners can more quickly realize their goals of improved safety, comfort, and connectivity on public roads.

Appendix A. Blank Survey and Survey Results

A.1 Blank Survey



Road Safety Survey

Survey starts Finish

All fields marked with an asterisk (*) are required.

1. What is your primary mode of transportation - how do you typically get around Flossmoor and neighboring communities?

- [ ] Personal vehicle
- [ ] Bike
- [ ] Walk
- [ ] Rideshare (e.g. Uber/Lyft)
- [ ] Carpool/Rely on others for rides
- [ ] Other (please specify)

2. Are you a resident of the Village of Flossmoor?

Choose an option

3. What is your age? (Select which age range describes you.)

Choose an option

4. Please rank the following categories based on your personal level of concern regarding each category, with "1" representing the highest level of concern. (1 – most concerned; 10 – Least concerned)

- Bicycle safety
- Distracted driving
- Impaired driving
- Intersection safety
- Lighting
- Pedestrian safety
- Speeding/aggressive driving
- School zone safety
- Younger drivers
- Older drivers
- Accessibility for people with disabilities

5. Please tell us how you feel about the following statements.

	Definitely agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Definitely disagree
As a pedestrian, I feel comfortable navigating the downtown Central Business District roundabout (on Sterling Avenue across the street from the Metra train station).	○	○	○	○	○
I feel safe and comfortable while riding a bicycle in the Village of Flossmoor	○	○	○	○	○
I feel safe and comfortable while walking in the Village of Flossmoor	○	○	○	○	○
Village of Flossmoor drivers understand the rules of the road, including sharing the road with pedestrians and bicyclists.	○	○	○	○	○
I do not encounter any barriers when walking or biking in the Village of Flossmoor	○	○	○	○	○
I am able to easily access places I would like to go in the Village by walking or bicycling	○	○	○	○	○
. I believe traffic enforcement is adequate in the Village of Flossmoor as I see the police on patrol and traffic violations being enforced.	○	○	○	○	○
I feel children are safe traveling in school zones in the Village of Flossmoor	○	○	○	○	○
Drivers obey the speed limit in the Village of Flossmoor	○	○	○	○	○

6. Of the following, which of the following safety improvements would you most like to see in the Village of Flossmoor? (Choose up to two)

- [ ] Reducing speeds on major roads through design and traffic signalization strategies
- [ ] Providing better bicycle facilities, including new bike lanes, wider bicycle lanes and/or implementation of separated/protected bike paths
- [ ] Pedestrian-focused improvements (e.g. improving intersection design, additional sidewalks, providing marked crosswalks, better lighting, more connectivity, and/or pedestrian crosswalk signals)
- [ ] Improving roadway/intersection lighting
- [ ] Increased traffic enforcement or police presence
- [ ] Other (please specify)

7. Please share any addition traffic related safety issues you see or want addressed in the Village of Flossmoor.

Please add your comment here...

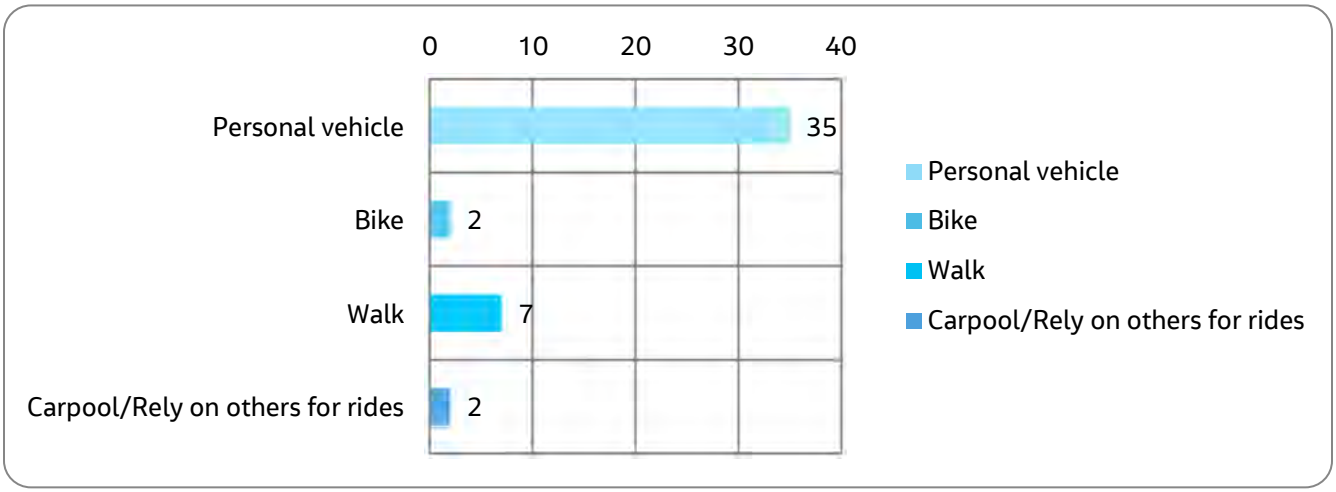
8. Are there specific locations in the Village of Flossmoor that you have traffic safety concerns? And why?

Please add your comment here...

SUBMIT

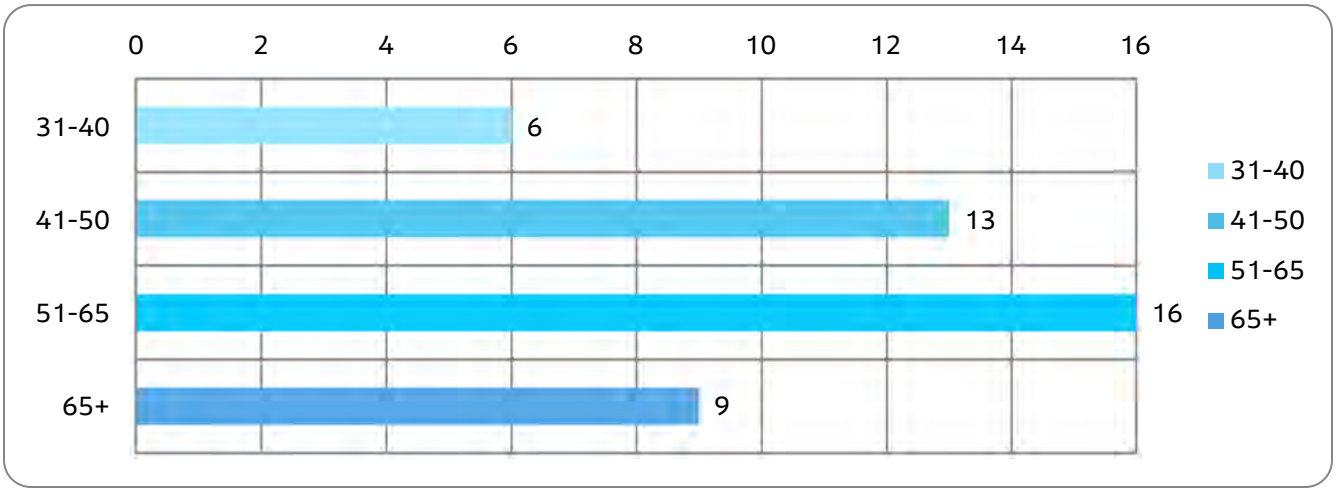
A.2 Survey Results Charts

A.2.1 Question 1: What is your primary mode of transportation - how do you typically get around Flossmoor and neighboring communities?

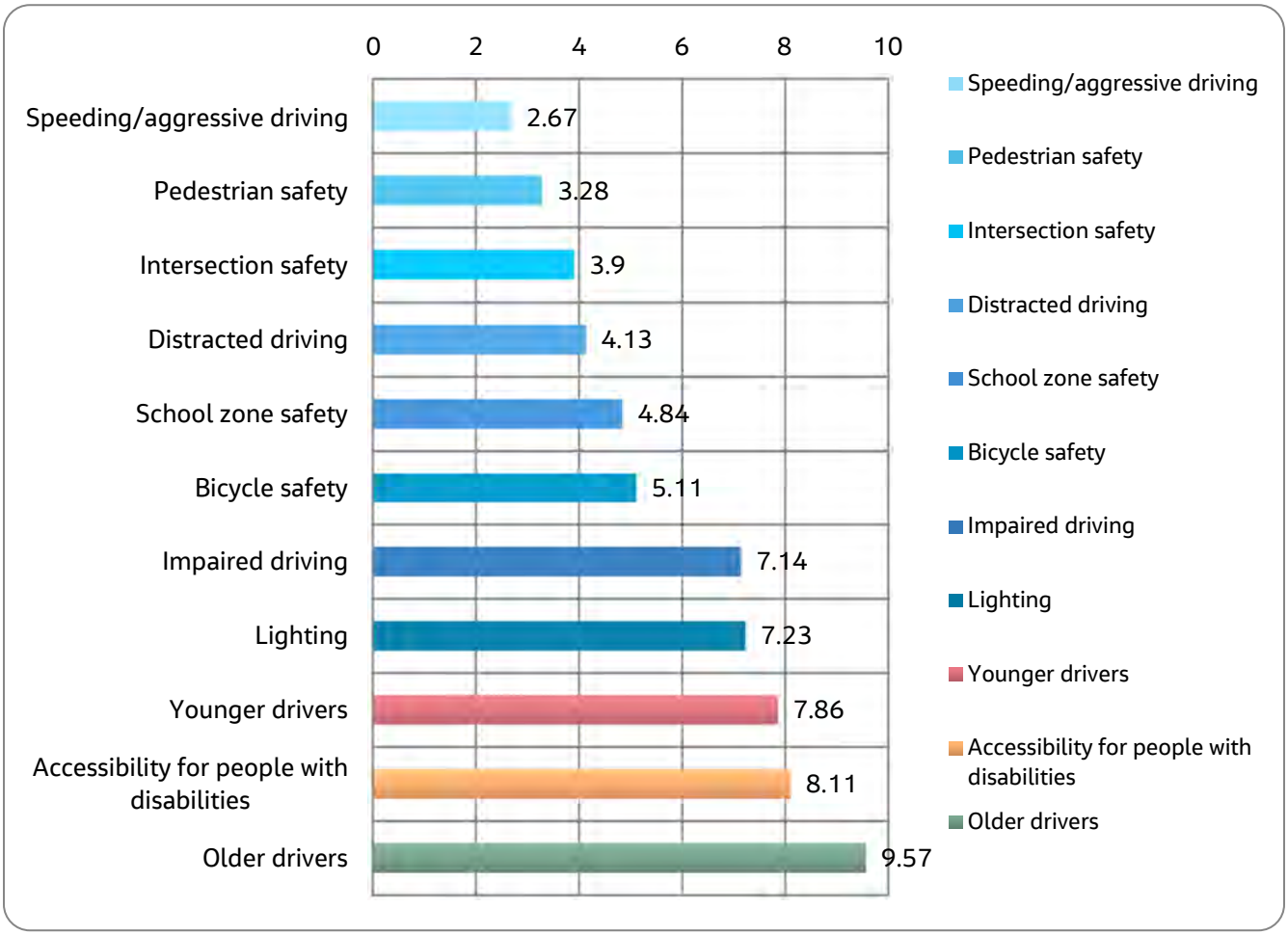


A.2.2 Question 2: Are you a resident of the Village of Flossmoor?

A.2.3 Question 3: What is your age? (Select which age range describes you.)

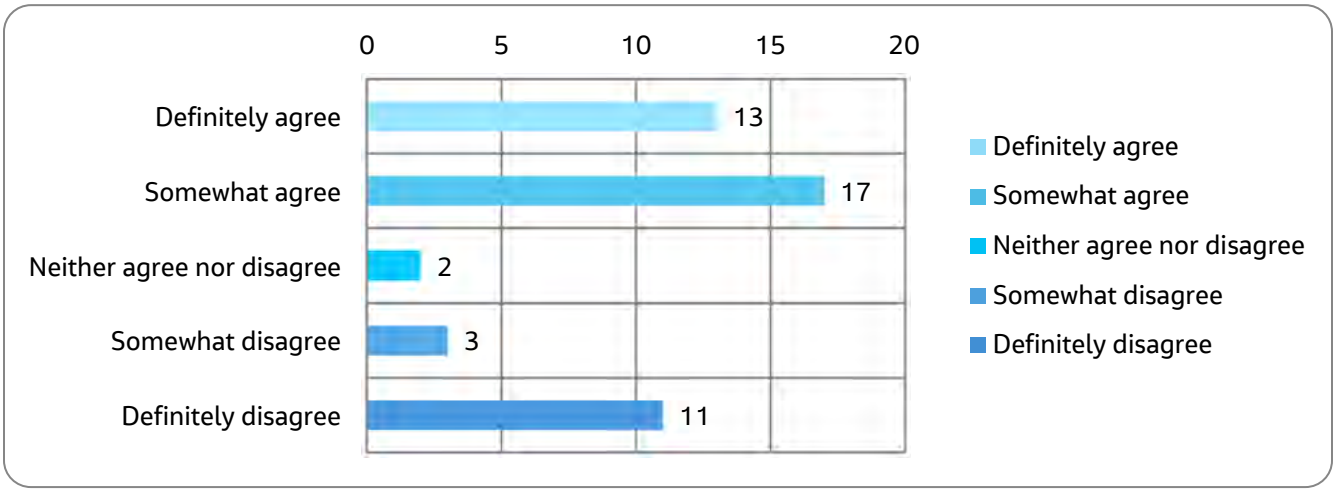


A.2.4 Question 4: Please rank the following categories based on your personal level of concern regarding each category, with "1" representing the highest level of concern. (1 – most concerned; 10 – Least concerned)

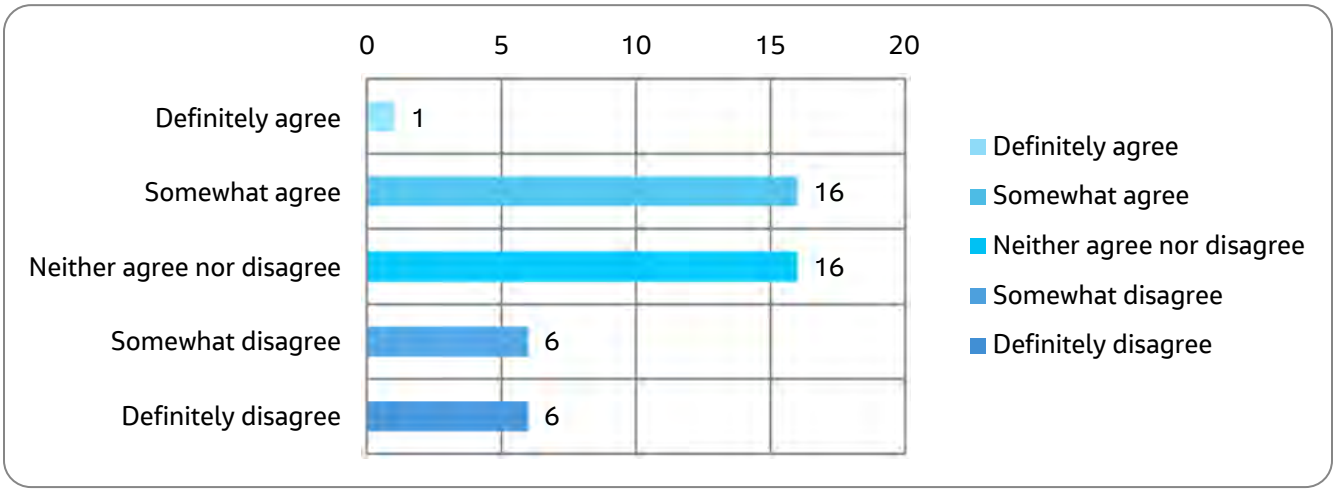


A.2.5 Question 5: Please tell us how you feel about the following statements:

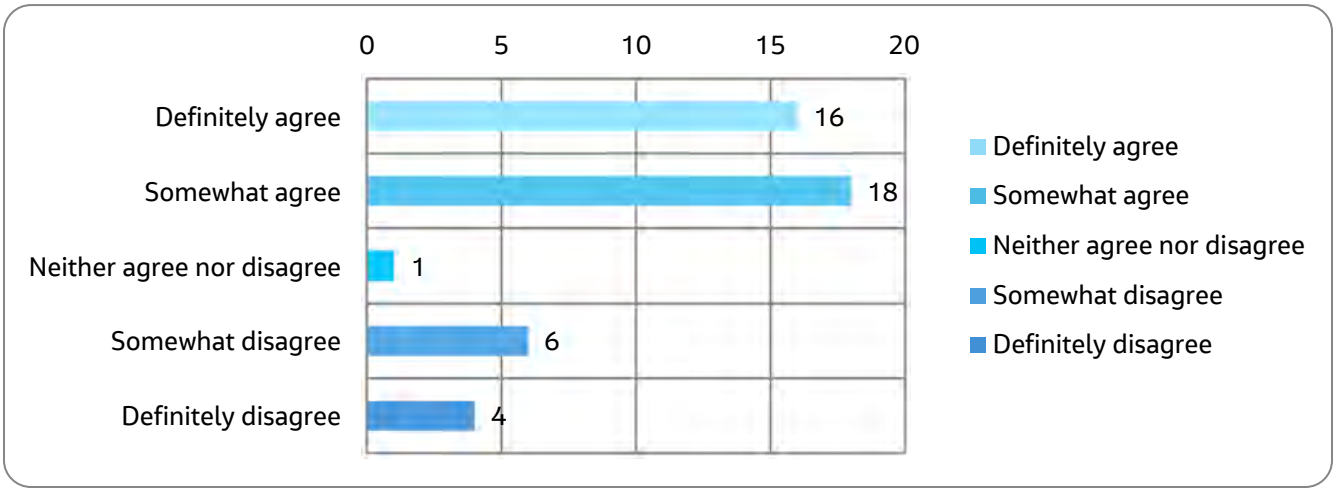
A.2.5.1 As a pedestrian, I feel comfortable navigating the downtown Central Business District roundabout (on Sterling Avenue across the street from the Metra train station).



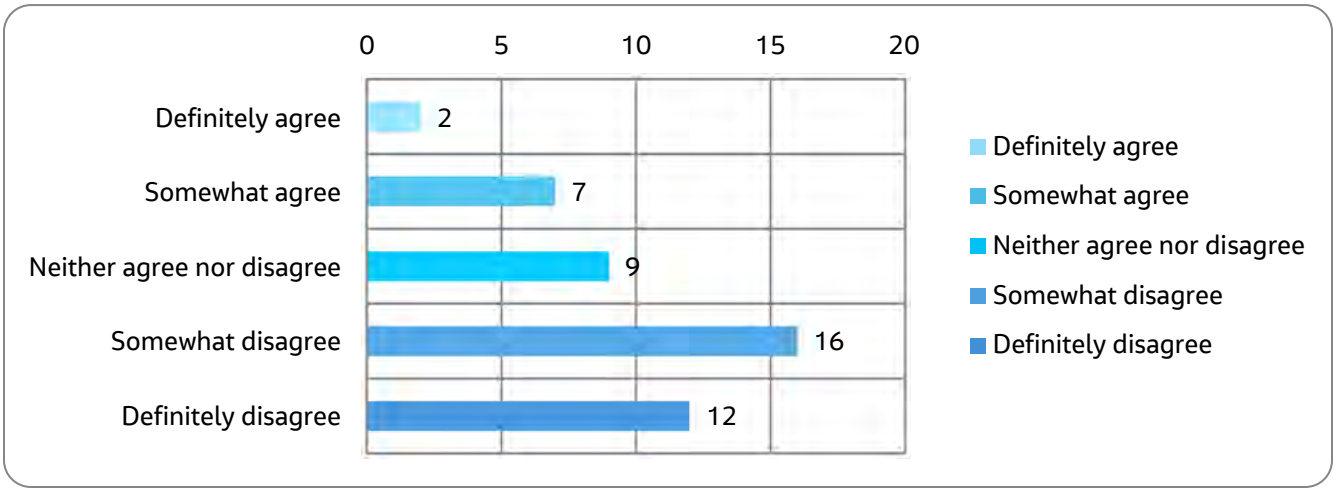
A.2.5.2 I feel safe and comfortable while riding a bicycle in the Village of Flossmoor



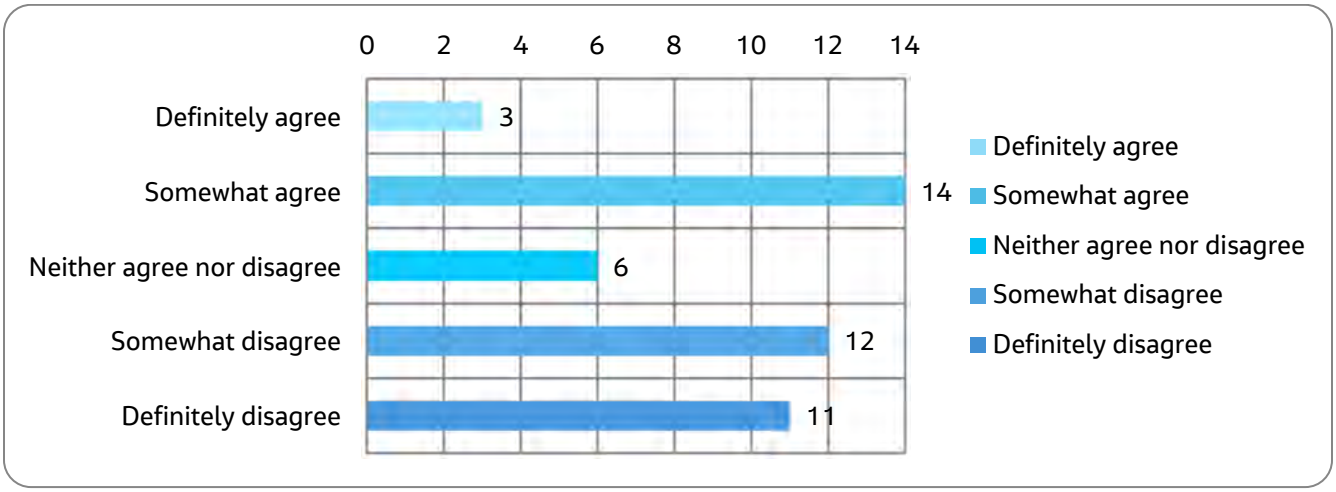
A.2.5.3 I feel safe and comfortable while walking in the Village of Flossmoor



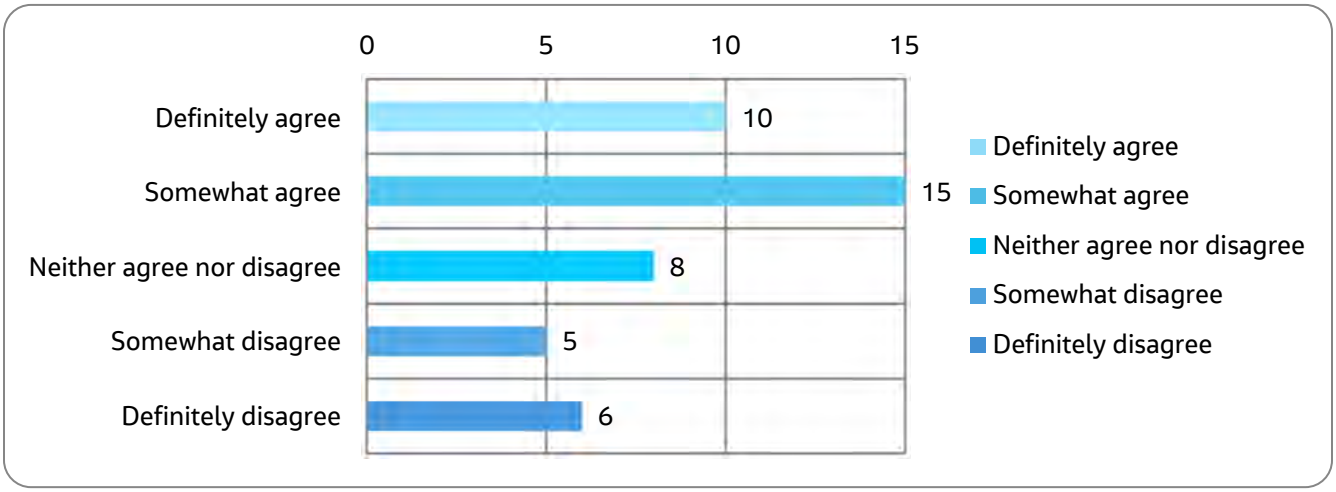
A.2.5.4 Village of Flossmoor drivers understand the rules of the road, including sharing the road with pedestrians and bicyclists.



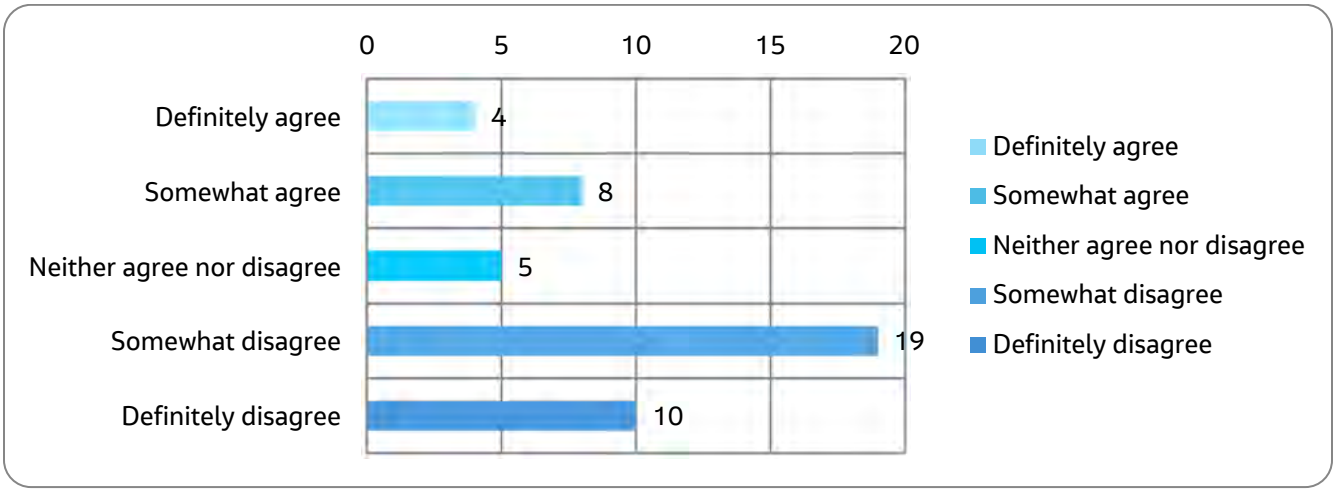
A.2.5.5 I do not encounter any barriers when walking or biking in the Village of Flossmoor



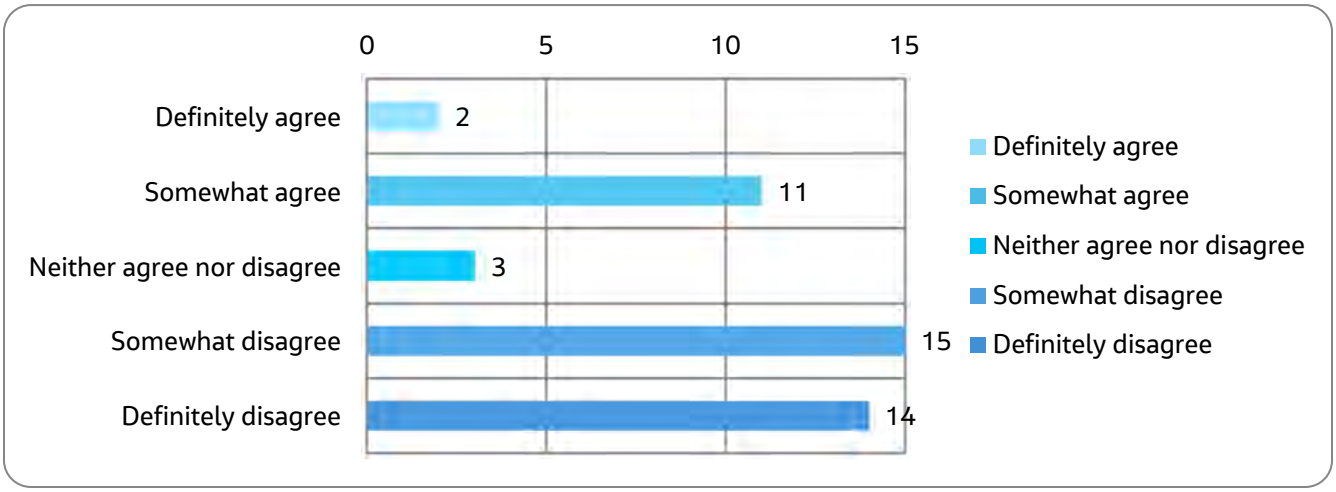
A.2.5.6 I am able to easily access places I would like to go in the Village by walking or bicycling



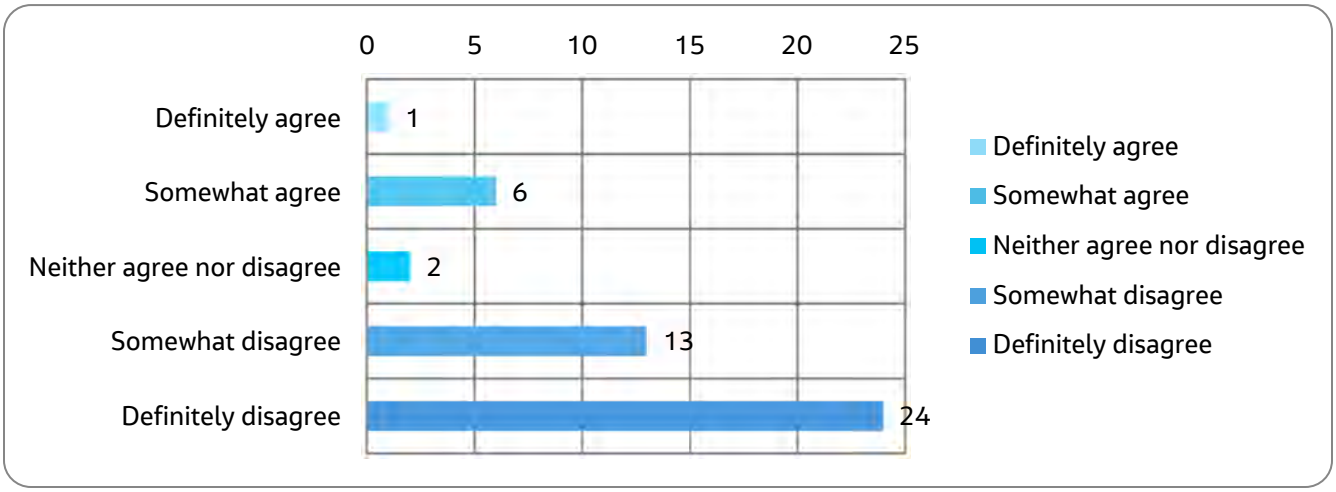
A.2.5.7 I believe traffic enforcement is adequate in the Village of Flossmoor as I see the police on patrol and traffic violations being enforced.


0
5
10
15
20
Definitely agree
Somewhat agree
Neither agree nor disagree
Somewhat disagree
Definitely disagree
4
8
5
19
10
Definitely agree
Somewhat agree
Neither agree nor disagree
Somewhat disagree
Definitely disagree

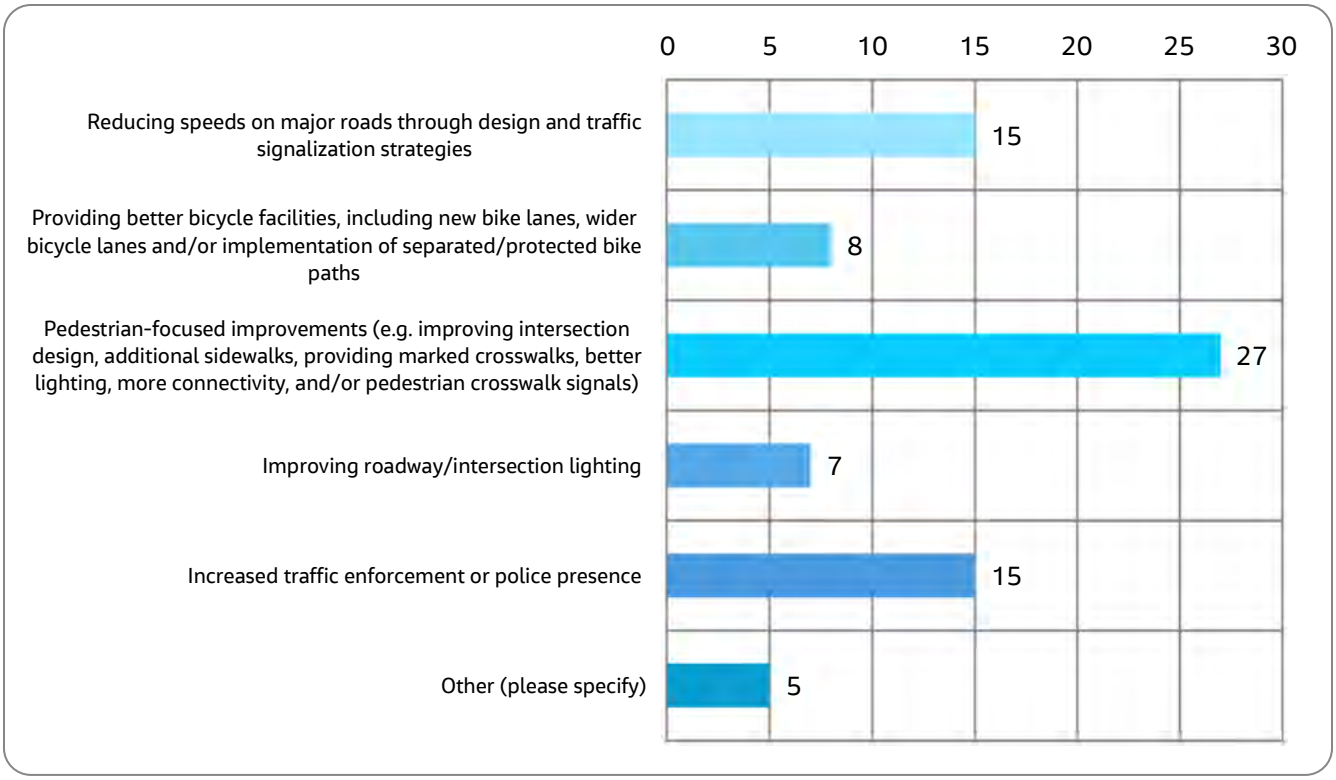
A.2.5.8 I feel children are safe traveling in school zones in the Village of Flossmoor



A.2.5.9 Drivers obey the speed limit in the Village of Flossmoor



A.2.6 Question 6: Which of the following safety improvements would you most like to see in the Village of Flossmoor? (Choose up to two)



Appendix D - Countermeasure and Policy Recommendation Memorandum

Village of Flossmoor Local Road Safety Plan

Countermeasure & Policy Recommendations Memo

November 2, 2021

Chicago Metropolitan Agency for Planning

Village of Flossmoor Local Road Safety Plan

Project No:	C9X37000
Document Title:	Countermeasure & Policy Recommendations Memo
Date:	July 16, 2021
Client Name:	Chicago Metropolitan Agency for Planning
Project Manager:	Project Manager
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Contents

Appendix A. Additional Information

Executive Summary

The Village of Flossmoor has elected to develop a comprehensive Local Road Safety Plan (LRSP) to help improve traffic safety and quality of life for its residents. Supported by the Chicago Metropolitan Agency for Planning (CMAP), the LRSP is intended to foster collaboration with stakeholders to identify and equitably address the Village's most pressing traffic safety concerns for all road users.

Utilizing a proactive approach to understand unmet traffic safety needs for local residents, LRSP processes encompass data-driven efforts including stakeholder engagement to accommodate ever-evolving communities. By leveraging contemporary traffic safety research, performance data and invaluable insights from the Steering Committee and local residents, the LRSP documents the holistic strategies to achieve practical goals to improve safety and mobility.

This Countermeasure and Policy Recommendations Memorandum (CPRM) represents the second major document in preparation for the final LRSP document. The purpose of the CPRM is to outline a menu of effective safety countermeasures and policies identified through analysis and community input, building upon the first, foundational document, the Existing Conditions Report (ECR). The LRSP will connect these countermeasures and policies with high-priority locations around the Village of Flossmoor, producing a practical plan for implementation and summarizing the findings of the entire LRSP process. Infrastructure-related countermeasures, policy and educational safety strategies are the key types of recommendations in this document that target one or more of the four Emphasis Areas (EA): Pedestrians and Bicyclists, Speed Management, Younger Drivers, and Intersections. These EAs were identified based on a comprehensive safety analysis which determined patterns in crashes that can most effectively be addressed through the LRSP.

Along with each recommended countermeasure, a selection of example candidate locations will be offered. These illustrate how and where the countermeasure may be implemented and what effect it may be expected to have. These candidate locations are not comprehensive and further exploration of specific target locations within the Village of Flossmoor will be presented within the final LRSP document. Additionally, the LRSP will provide an overview of the geographic patterns of safety concerns identified through the planning process, directly connecting the recommendations in this document to critical locations within the village and the necessary action steps to mitigate them.

Infrastructure-related projects within this document focus on four key categories: neighborhood safety, pedestrian and bicycle facilities, major intersection improvements, and village planning considerations. These 20+ countermeasures are not exhaustive but represent recommendations by village residents provided through community engagement events and activities as well as additional recommendations identified through an in-depth analysis of existing conditions and problem locations. Recommendations were vetted by CMAP, Village of Flossmoor staff, and the LRSP Steering Group, and utilize research-driven treatments that have been proven effective through national research programs and federal guidance. Some of these high-priority recommendations include:

- High-visibility pedestrian crossings
- Traffic calming
- Speed feedback devices
- Re-routing through-traffic away from neighborhood streets
- Install bump-outs at high pedestrian volume locations
- Raised pedestrian crossing
- Install pedestrian hybrid beacon mid-block crossing (HAWK)

- Restrict right turn on red

Safety policies and community safety activities within this document focus on four key categories: community planning efforts, student and young driver outreach, community engagement recommendations, and enforcement-related strategies. These 10+ recommendations are not exhaustive but represent recommendations by village residents provided through community engagement events and activities as well as additional recommendations identified through an in-depth analysis of existing conditions and problem locations. Recommendations were vetted by CMAP, Village of Flossmoor staff, and the LRSP Steering Group, and utilize research-driven treatments that have been proven effective through national research programs and federal guidance. Some of these high-priority recommendations include:

- Create pedestrian safety and accessibility action plan
- Create a bicycle plan
- Create a complete streets plan
- Safe Routes to School program
- Social media engagement
- Transportation Safety Week and activities
- Red light running cameras at major intersections
- Automated speed enforcement on major roadways
- High Visibility Enforcement Campaigns

Through collaboration between local stakeholders as well as adjacent municipalities, the LRSP team will take a holistic approach to improve safety for Flossmoor's local community and to increase awareness of traffic safety and ongoing safety efforts. This document and the LRSP development process are intended to provide strong guidance for decision-makers within the Village of Flossmoor in pursuit of reducing severe crashes on public roads. Implementation of recommendations found in this document are expected to help advance the local community to achieve practical safety goals.

1. Introduction

1.1 Project Overview

With a vision to improve traffic safety and the quality of life of its residents, the Village of Flossmoor elected to develop a comprehensive Local Road Safety Plan (LRSP). Through the support of the Chicago Metropolitan Agency for Planning (CMAP), the LRSP will foster collaboration with residents and local stakeholders to identify and equitably address the Village's most pressing traffic safety concerns—for all road users.

LRSPs take a proactive approach to understanding and addressing unmet traffic safety needs of local residents. As communities grow and evolve, so do their transportation facilities and movement patterns, and so must their plans to achieve safe operations. By leveraging contemporary traffic safety research, historical safety performance data, and the invaluable insights of the residents who drive, walk, and bike on these facilities every day, the LRSP and its Steering Committee will identify practical goals for the Village's roadways, sidewalks, and bicycle facilities, as well as holistic strategies for achieving those goals.

Once the current state of traffic safety is understood through a data-driven evaluation of existing conditions as well as extensive engagement with stakeholders, steps can be identified to improve safety performance. This report builds on the many insights gained through the development of an existing conditions report and direct communications with community members, advocates, and leaders. The following sections will outline practical infrastructure projects and policy initiatives which directly address the Village of Flossmoor's key Emphasis Areas and categories of crashes which offer the greatest potential for reducing fatal and severe crashes. These Emphasis Areas were identified based on historic patterns in crashes, real-world experiences of community members, and contemporary research, and will help focus the efforts of the LRSP team to target the most pressing needs of the village and provide the greatest improvements to traffic safety performance.

1.2 Document Purpose

In the process of developing the Village of Flossmoor's LRSP, three major documents are being created:

1) Existing Conditions Report (ECR)
2) **Countermeasure and Policy Recommendations Memorandum (CPRM)**
3) Local Road Safety Plan (LRSP)

After the Existing Conditions Report was completed and approved by the LRSP Steering Group, the Countermeasure and Policy Recommendations Memorandum was developed to begin to explore options for how to address the issues identified in the ECR and in subsequent input from the public. This document serves to bridge the gap between the ECR and the LRSP by defining a set of traffic safety improvement options which may become the focus of future efforts. This document will present and evaluate at a high level several key recommendations that were developed through extensive data analysis and stakeholder and community engagement. These recommendations include both infrastructure and policy-based countermeasures which the Village of Flossmoor may consider for inclusion in their LRSP. Recommendations for implementation of these countermeasures and policies will be for the consideration of the LRSP team including the local representatives in the LRSP Steering Group and will feed into the final LRSP document. Through this initiative, the Village of Flossmoor will develop a practical and actionable standalone safety plan that will be used in the coming years to improve transportation safety for all road users.

2. Emphasis Areas

Emphasis Areas are a tool used in traffic safety analysis to help capture the unique needs of a study area in a few defined categories. Each emphasis area is defined based on patterns of crashes, patterns of driver behaviors associated with crashes, or patterns of environments involved in crashes. They help analysts and stakeholders to focus in on the practical steps that can be taken to improve safety by targeting individual emphasis areas with strategies and countermeasures designed to address those emphasis areas. For example, if an emphasis area of Speed Management is identified, countermeasures should be chosen which can target this emphasis area, such as traffic calming or increased enforcement at critical speeding locations.

The following four Emphasis Areas were chosen specifically for the Village of Flossmoor based on the unique safety performance of the village's roadway network. They were determined based on a comprehensive crash analysis performed during the Existing Conditions Report, priorities expressed by the LRSP Steering Committee and project team, and extensive input from the public. In following sections, countermeasure and policy recommendations will be made which specifically target these identified emphasis areas.

2.1 Pedestrians & Bicyclists

With fatalities of vulnerable road users on the rise across the United States, many agencies are exploring opportunities to make their cities more pedestrian- and bike-friendly through safer infrastructure, increased connectivity, and the elevation of active transportation modes (such as walking, biking, and public transit) as an essential form of movement. Recognizing this as a critical need for the Village of Flossmoor, community members and stakeholders have identified this as a primary area of emphasis for the Village's LRSP. By addressing locations in Flossmoor with a history of vulnerable road user crashes, as well as proactively identifying and addressing locations that do not have a crash history, but which exhibit risk factors, the LRSP can help to curb this safety issue and create a more walkable and bikeable village. Targeted safety improvements should focus on pedestrian facilities around local schools and the Flossmoor Metra station—both major pedestrian generators. Such treatments would protect the most vulnerable residents and support a reliable, sustainable, and safe culture of active and multi-modal transportation. Additionally, through the implementation of complete streets and other treatments that elevate and improve the safety of non-motorized road users and increase connectivity between valuable community destinations, our public roads can become safer for all.

To learn about countermeasures and policies related to this emphasis area, check out the following sections:

- Neighborhood street and pedestrian lighting
- High-visibility pedestrian crossings
- Implement leading pedestrian interval at high pedestrian volume signalized intersections
- Install bump-outs at high pedestrian volume locations
- In-street pedestrian crossing signs
- Raised pedestrian crossing
- Install pedestrian refuge islands at multilane intersections
- Install pedestrian hybrid beacon mid-block crossing (HAWK)
- Construct new sidewalks
- Implement bicycle lanes

- Restrict right turn on red
- Improve right turning geometries
- Complete streets and right-sizing
- Create pedestrian safety and accessibility action plan
- Create a bicycle plan
- Create a complete streets plan
- Safe Routes to School program
- Transportation Safety Week and activities

2.2 Speed Management

Most severe crashes involve elevated vehicle speed. With an increase in driving speed, there is a similar increase in the severity of any potential crash, especially when vulnerable road users are involved. To improve safety performance, speed management must be a focus for the Village of Flossmoor's LRSP. Speed management can be achieved through infrastructure improvements, such as lane narrowing, traffic calming, and more, which guide motorists toward safer speeds that are in accordance with posted speed limits where speeding or aggressive driving is prominent. Policy and enforcement treatments may be considered based on identified needs, community input, and research-based assessment of existing facilities. Due to new traffic patterns and driving behaviors resulting from the COVID-19 pandemic, including reduced traffic volumes and increased driving speeds in some areas, this issue is more pertinent than ever.

To learn about countermeasures and policies related to this emphasis area, check out the following sections:

- Traffic calming
- Speed feedback devices
- Neighborhood traffic circles (mini roundabouts)
- Re-routing through-traffic away from neighborhood streets
- Install bump-outs at high pedestrian volume locations
- Raised pedestrian crossing
- Complete streets and right-sizing
- Create a complete streets plan
- Automated speed enforcement on major roadways
- High Visibility Enforcement Campaigns

2.3 Young Drivers

With age comes experience, and with experience comes safer behaviors. Research has shown this to be true for driving; as new drivers enter the roadway with little real-world driving experience, they are more likely to experience a crash. However, this likelihood decreases over the first decade or so of driving, with a precipitous decrease over the first few years. Aggressive and risky driving behaviors are also more prominent among younger drivers, which endanger themselves as well as their fellow road users. For these reasons it is valuable to focus on young drivers in the pursuit of holistic traffic safety performance, providing effective policies and a safe environment for them to safely drive and gain experience. Because young drivers have a relatively higher propensity for all types of traffic crashes, especially those related to speeding and aggressive driving, all countermeasures which reduce common crashes also indirectly address issues of younger drivers. To specifically target younger drivers, policies and activities which engage students and involve young drivers can be implemented.

To learn about countermeasures and policies related to this emphasis area, check out the following sections:

- Safe Routes to School program
- Social media engagement
- Transportation Safety Week and activities
- Corporate and organizational partnerships
- Driver safety training for citation recipients
- High Visibility Enforcement Campaigns

2.4 Intersections

At the intersection of two or more streets, there can be many conflicting movements which create the potential for collisions—such as left-turning traffic conflicting with through traffic or right-turning traffic conflicting with a pedestrian crossing. The safety performance of these intersections can often be improved by either reducing the number of conflict points present using innovative intersection designs or by reducing the probability or severity of crashes which may occur at existing conflict points using other safety treatments. Though intersections are commonly designed to maximize operational performance—i.e., traffic through-put—they may not yet be optimized for safety performance and may exhibit opportunities for further targeted safety improvement. Based on crash data analysis for the Village of Flossmoor, it is recommended that such intersections be a focus for the LRSP. By targeting these locations with proven safety countermeasures that address crashes related to red-light running, risky left turns, congestion, and speeding, a great number of crashes may be prevented in the future, making these intersections and the Village as a whole a safer place.

To learn about countermeasures and policies related to this emphasis area, check out the following sections:

- Installation of traffic controls at neighborhood intersections
- Offset left turn lanes on major intersection approaches
- Restrict right turn on red
- Improve right turning geometries
- Modify signal phasing for left-turning movements

- Upgrade to retroreflective backplates on signal heads
- Traffic signal retiming and coordination
- Complete streets and right-sizing
- Modernize and improve visibility of signage
- Remove problematic vegetation or visual barriers at intersections
- Create a complete streets plan
- Red light running cameras at major intersections

3. Recommended Infrastructure Projects

In the following subsections, a model for approaching infrastructure improvements known as the Safe System approach will be introduced along with several key infrastructure safety countermeasures. These countermeasures were selected based on an analysis of the village's transportation network and historic safety performance as well as extensive input from community members and stakeholders. Along with each recommendation, a selection of example candidate locations for these countermeasures is provided. These are intended to illustrate where infrastructure improvements may be made but are not exhaustive or final.

Additionally, each recommendation includes a summary with a few helpful attributes. These include the emphasis area addressed by the recommendation, the relative expected cost of low (<$10,000), medium ($10,000 - $100,000), or high ($100,000+), the relative average crash reduction effectiveness level, the relative priority level based on contemporary research and local policy, and the relative level of invasiveness of the countermeasure (e.g., how much it may impact existing road user experience).

3.1 A Safe System Approach

Moving beyond the traditional approach to traffic safety, the Safe System approach is human-centered, focusing on creating an environment which anticipates and accommodates human error through robust, modern infrastructure. A Safe System acts as a safety net for all road users, even in the face of mistakes and misjudgments, reducing or eliminating opportunities for crashes to occur, and minimizing the severity of crashes that do. This approach recognizes the value of pursuing behavior change in road users through enforcement, education, and policy, but views these as opportunities to further improve the safety of an already safe and forgiving roadway system.

The use of a Safe System approach is especially crucial when patterns of distracted or aggressive driving have been identified. These are behaviors which cannot directly be influenced by roadway design features; however, they can be accounted for through a comprehensive, forward-looking, and safety-driven design. Similarly, at locations which feature higher volumes of pedestrian and bicycle traffic, such as schools, train stations, and central business districts, additional infrastructural considerations must be made to ensure that these road users are protected while minimizing impacts to connectivity and convenience.

3.2 Neighborhood Safety Recommendations

3.2.1 Installation of traffic controls at neighborhood intersections

Emphasis Area	Intersections	**Target Facilities**	Uncontrolled intersections
Cost	Low	**Crash Reduction**	Medium
Priority	Medium	**Invasiveness**	Medium

Description. At the intersection of two roadways with regular traffic, it is common to install traffic control using yield signs at very low volume intersections, stop signs at medium volume intersections, and traffic signals (i.e., stop lights) at high volume intersections, though the application and appropriateness of each traffic control format varies by location. In some cases, installation of stop controls at intersections where traffic does not warrant it may produce unexpected outcomes. A thorough study of traffic volumes and warrant analysis should be conducted prior to deployment.

Benefits. Traffic controls provide positive guidance to road users passing through an intersection, indicating strict stopping and/or yielding patterns that work to minimize the potential for collisions while maximizing traffic flow.

Where no traffic control devices are present, road users are required to be highly observant and assume the behaviors of other road users approach the intersection. At uncontrolled intersections, installation of yield signs on one or more approaches provides a positive indication to drivers of what they are expected to do at the intersection as well as what others are expected to do; that is, motorists must yield to conflicting traffic that enters the intersection prior to their arrival. Installation of stop signs similarly positively indicates expectations of stopping when approaching an intersection as well as yielding to conflicting traffic. Stop controls should not be installed specifically for purpose of speed control as they may not be expected to influence speeding or aggressive driving behaviors and may encourage intentional violation.

Implementation. At some locations where volumes are consistently very low, a municipality may opt to use no traffic control devices, such as in small, exclusively residential intersections. However, if traffic operation or safety performance are found to warrant installation of traffic controls at such intersections, they may be installed. Additionally, resident expectations should be considered as modification of traffic controls may be unexpected by regular road users and may take time to receive full compliance. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- The intersection of 189th Street and Springfield Avenue; installation of all-way stop control or stop control on Springfield Avenue approaches; based on Flossmoor Police Department recommendation due to elevated number of crashes related to failure to yield
- The intersection of Scott Crescent and Lawrence Crescent near Heather Hill School; installation of stop control on Lawrence Crescent leg which terminates at the intersection; based on Flossmoor Police Department recommendation due to high volumes of child pedestrians during school hours

3.2.2 Traffic calming

Emphasis Area	Speed Management	**Target Facilities**	Various
Cost	Low-Medium	**Crash Reduction**	Medium
Priority	High	**Invasiveness**	Medium

Description. Traffic calming involves the use of various low-impact design features and modifications to the roadway and the surrounding environment to indirectly slow down vehicle traffic and create a more friendly environment for non-motorized road users. By altering the appearance or feel of a roadway location or corridor, we can create conditions where drivers naturally feel the need to drive slower than they might otherwise and to yield to pedestrians and other vulnerable road users more regularly. This can be done through infrastructure-focused methods such as lane narrowing, curb and gutter, speed humps or raised crosswalks, or mini-roundabouts, or through environmental design methods such as planting more trees, adding supplemental signing, or installing sidewalk features like benches and planters. These alter motorists' perception of the facility, making its appearance align with the safe speed limit for the area. Each instance of traffic calming should be designed for the specific location being targeted to ensure greatest effect.

Figure 3-1 Traffic calming examples (source)

Benefits. By reducing average driving speeds and improving attentiveness, traffic calming helps to create more pedestrian friendly and multi-modal environments. This creates lasting safety improvements for vulnerable road users and makes walking and biking more attractive options for community members. Lower driver speeds reduce the frequency of pedestrian collisions and also importantly significantly reduces the severity of crashes when they do occur. Additionally, traffic calming often offers unique aesthetic benefits, often involving landscaping features and attractive designs.

Implementation. Traffic calming in its various forms can be applied at many different types of locations, though it is commonly applied in high-pedestrian traffic areas such as business districts, school zones, and neighborhood streets. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- Along Flossmoor Road between Kedzie Avenue and Western Avenue; this area has been reported by many residents to experience regular speeding and aggressive driving which reduce safety and accessibility for all road users
- Park Drive between Sterling Avenue and Douglas Avenue; the current design of the roadway and adjacent intersections causes regular speeding incidents as well as instances of vehicles crossing over the roadway centerline while maneuvering curves, creating hazards for drivers moving in the opposite direction; high pedestrian volumes due to public spaces and schools make this a critical location for pedestrian safety

3.2.3 Speed feedback devices

Emphasis Area	Speed Management	**Target Facilities**	Various
Cost	Low	**Crash Reduction**	Medium
Priority	High	**Invasiveness**	Low

Description. Dynamic speed feedback signs measure the speed of approaching vehicles and indicate it on a digital sign board, offering immediate feedback to motorists. These are often installed along with other guidance such as speed limit signs for comparison, pedestrian crossing signs, school zone signs, or others. The juxtaposition of these signs provides a narrative to motorists which encourages driving within the speed limit and actively considering how their speed may impact their and other road users' safety.

Figure 3-2 Speed feedback sign in Flossmoor neighborhood

Benefits. Similar to general traffic calming measures, speed feedback signs attempt to promote safe driving behaviors without actively using enforcement or changing the operational characteristics of the roadway. They are also inexpensive to implement and have very little impact on the function of the roadway or the aesthetic of the location.

Implementation. Speed feedback signs are best implemented on relatively low-volume two-lane roads where sensors can provide feedback to individual drivers. They are most commonly installed along collector roads within or around neighborhoods, minor arterial roads, or roads surrounding schools and parks. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- Western Avenue north of Flossmoor Road; multiple residents have reported speeding through this area and poor yielding to pedestrians including students; pairing school zone signs with dynamic speed feedback signs could produce speed reductions and improve yielding rates
- Park Drive west of Sterling Avenue; many residents have indicated speeding and aggressive driving along this roadway, and with high volumes of pedestrians and students as well as winding roads, speed control is critical in this area; dynamic speed feedback signs could help reduce speeds and increase pedestrian yielding rates
- Flossmoor Road between Kedzie Avenue and Governors Highway; many residents have indicated excessive speeding in this area; paired with other traffic calming measures, a complete streets design, and other targeted treatments, dynamic speed feedback signs could help encourage driving within posted speed limits

3.2.4 Neighborhood traffic circles (mini roundabouts)

Emphasis Area	Speed Management	**Target Facilities**	Local intersections
Cost	Low	**Crash Reduction**	Medium
Priority	Medium	**Invasiveness**	Medium

Description. Neighborhood traffic circles use small islands in the center of traditional low-traffic intersections to provide traffic calming, reducing driver speed. They are designed to allow full visibility between all legs of the intersection and to have minimal impact on traffic flow.

Benefits. Neighborhood traffic circles reduce average speeds within neighborhoods, protecting pedestrians and vulnerable road users in the area. They also reduce speeds within the intersections themselves, lowering the potential for severe crashes between conflicting movements. Traffic circles also offer opportunities for landscaping which can beautify their community, improve the quality of their environment, and create a focal point within the neighborhood. These facilities are often combined with stop controls to manage right of way while also realizing the speed reduction benefit of the traffic circle design.

Implementation. This countermeasure is commonly applied at stop-controlled intersections within neighborhoods where traffic volumes are low. They are especially effective where some excessive driving speeds have been noticed, helping to calm existing traffic and keep drivers within the speed limit. They are also most effective where traffic volumes on intersecting roads make up at least 10% of overall through volume. Effective implementation of neighborhood roundabouts should also come with educational materials for residents and communication strategies. Because roundabouts are often new to some road users, this is important to ensure understanding and compliance. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- Intersections of main access roads to neighborhoods which connect to adjacent major roadways and where space is available
- Consider converting residential intersections which feature triangular channelization islands (e.g., Park Drive and Bruce Avenue) to roundabouts; the current configuration produces an increased number of conflict points relative to a standard T-intersection design and encourages higher speeds and less yielding to pedestrians; they also require pedestrians to walk a greater distance than standard T-intersection designs and roundabouts; by converting some of these intersections to roundabouts, significant traffic calming effects can be achieved and the neighborhood can be made significantly more walkable and safer for pedestrians and bicyclists; because this would have some impacts on the feel of the neighborhood, this may require extensive coordination with the public; because of current configurations, plenty of space would be available for roundabouts to be installed and they could provide space for beautification

3.2.5 Re-routing through-traffic away from neighborhood streets

Emphasis Area	Speed Management	**Target Facilities**	Low-volume streets
Cost	Medium	**Crash Reduction**	Medium
Priority	Medium	**Invasiveness**	Medium

Description. Due to congestion, constrictions in traffic, or roadway design, some drivers may choose to bypass main roads by traveling through neighborhood streets to get between destinations. This sometimes involves speeding or aggressive driving and also increases traffic volumes on residential streets which are not intended to serve through traffic. Such traffic can reduce safety for local traffic and vulnerable road users and may be addressed through redirecting such traffic back to main roads using traffic calming, increasing enforcement of speeding, and similar measures.

Benefits. This can take various forms, though the benefits generally include reduced traffic in residential areas, reduced cases of speeding and aggressive driving, and improved safety for vulnerable road users by minimizing exposure.

Implementation. This treatment should be considered on residential streets which connect two major roadways on either side of a neighborhood, especially those which move in parallel with an alternative major road. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- Collett Lane and Hutchison Road between Dixie Highway and Western Avenue; excessive speeding noted by residents on this residential road due to through traffic bypassing Flossmoor Road
- Central Park Avenue between Flossmoor Road and Brumley Drive; excessive speeding noted by residents on this residential road due to through traffic bypassing Kedzie Avenue and Crawford Avenue

3.2.6 Neighborhood street and pedestrian lighting

Emphasis Area	Pedestrians & Bicycles	**Target Facilities**	Neighborhood streets
Cost	Medium	**Crash Reduction**	Low
Priority	Low	**Invasiveness**	Medium

Description. Most neighborhood streets within the Village of Flossmoor don't feature extensive lighting and at night get very dark. This may make these areas difficult to walk, and because some areas don't have sidewalks and pedestrians are required to walk in the street, this may endanger vulnerable road users at night. To alleviate this issue, some residents have voiced interest in installing lighting along some neighborhood roads to improve visibility, increase walkability, and help pedestrians feel more comfortable at night. However, some residents have opposed this countermeasure in the past and would prefer to maintain the existing appearance of their roads.

Benefits. Increased lighting within residential neighborhoods can improve walkability at night. Where sidewalks are not present, this will be most effective. Where sidewalks are present, lighting will be most effective at intersections where pedestrians may have to cross uncontrolled streets.

Implementation. Implementation of this countermeasure would be dependent on levels of resident interest at different neighborhood locations. It would require a study of pedestrian volumes, nighttime visibility, and community opinion.

3.3 Pedestrian and Bicyclist Facility Recommendations

3.3.1 High-visibility pedestrian crossings

Emphasis Area	Pedestrians & Bicyclists	**Target Facilities**	Intersections
Cost	Low	**Crash Reduction**	Medium
Priority	Medium	**Invasiveness**	Low

Description. Replace existing parallel line crosswalks with higher-visibility ladder or continental design or install at locations which do not currently have any pedestrian crossing installed.

Figure 3-3 High-visibility pedestrian crossing (source)

Benefits. High-visibility pedestrian crosswalks are an easy and inexpensive safety countermeasure that can be deployed widely within an urban or suburban area. As they are more eye-catching and distinct from other pavement markings, they increase driver awareness of the presence of pedestrian crossings and improve yielding rates for pedestrians. Additionally, these designs tend to hold up to deterioration better over time, staying visible even after normal wear due to traffic.

Implementation. All intersection and mid-block pedestrian crossings are candidates for this countermeasure. It is common to deploy this countermeasure systemically, meaning identifying a large batch of candidate locations and deploying it at all of them concurrently, often under a single contract. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- All pedestrian crossings near schools which do not currently feature high-visibility pedestrian crossings

- Neighborhood intersections which have a history of low yielding rates to pedestrians or speeding
- All pedestrian crossings within the central business district should be upgraded to high-visibility crossings

3.3.2 Implement leading pedestrian interval at high pedestrian volume signalized intersections

Emphasis Area	Pedestrians & Bicyclists	**Target Facilities**	Signalized intersections
Cost	Medium	**Crash Reduction**	Medium
Priority	Medium	**Invasiveness**	Low

Description. A Leading pedestrian interval (LPI) is a traffic signal timing treatment. It involves a small modification to the begin times of pedestrian crossing movements, giving pedestrians a 3-7 second head start when entering an intersection relative to the corresponding green signal phase in the same direction of travel.

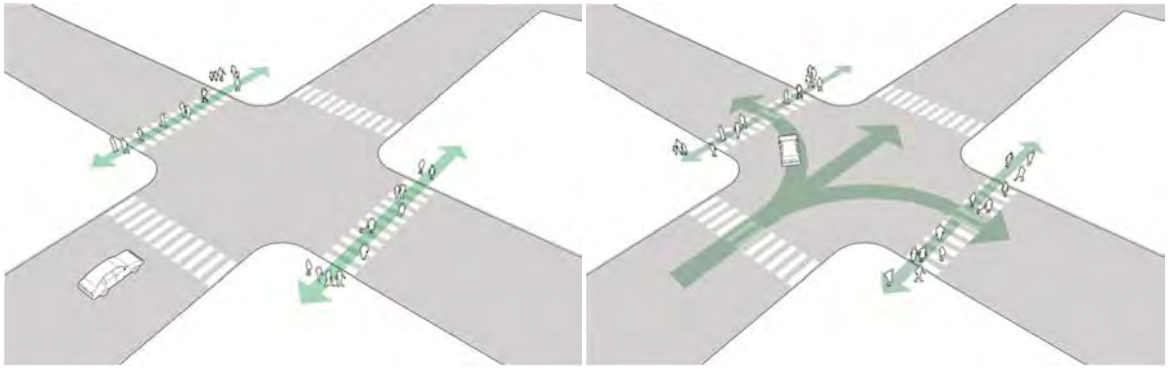

Figure 3-4 Leading Pedestrian Interval Phases (source)

Benefits. Pedestrian crashes at signalized intersections commonly involve vehicles making turns. By providing a head start in crossing, a leading pedestrian interval increases pedestrians' visibility within the crosswalk. This has been shown to significantly reduce pedestrian-vehicle collisions, improving safety and comfort for vulnerable road users.

Implementation. LPIs are only applicable at signalized intersections and require a pedestrian crossing indicator. If one isn't present, these can be installed with some additional cost. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- The intersection of Flossmoor Road and Governors Highway
- The intersection of Flossmoor Road and Western Avenue
- The intersection of Flossmoor Road and Kedzie Avenue
- The intersection of Vollmer Road and Western Avenue

3.3.3 Install bump-outs at high pedestrian volume locations

Emphasis Area	Pedestrians & Bicyclists, Speed Management	**Target Facilities**	Busy intersections, midblock crossings
Cost	Low-Medium ($2,000 - $20,000)	**Crash Reduction**	Medium
Priority	High	**Invasiveness**	Medium

Description. Pedestrian bump-outs, also called curb extensions or bulb-outs, involve the extension of a curb on one or both sides of the road at a pedestrian crossing, narrowing the pavement and shortening the crossing distance for pedestrians.

Figure 3-5 Pedestrian bump-out

Benefits. Installing a pedestrian bump-out results in pedestrians spending less time in a vulnerable position in the traveled way. It also makes pedestrians more visible as they approach the crossing while still keeping them protected by a curb before the enter the roadway. Bump-outs also have traffic calming effects, which cause motorists to drive somewhat slower than they otherwise would, due to the apparent constriction of the roadway at the crossing location. Additionally, installation of bump-outs can offer an opportunity to provide advanced, ADA-compliant ramps and other features which offer greater accessibility to all road users.

Implementation. Pedestrian bump-outs are applicable at any existing or planned pedestrian crossing where there is space for the traveled way to be narrowed somewhat. It is commonly installed at pedestrian crossings where on-street parking is available, such as in Figure 3-5, where the extension can be made without impacting any travel lanes. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- The intersection of Flossmoor Road and Brassie Avenue near Flossmoor Park
- Various school crossings around Flossmoor where crossing guards are required

- Various intersections in the village's central business district including the intersection of Flossmoor Road and Sterling Avenue; the northwest corner of this intersection could easily be extended into the southbound leg, matching the length of adjacent on-street parallel parking, significantly reducing pedestrian crossing distances and reducing turning traffic speeds

3.3.4 In-street pedestrian crossing signs

Emphasis Area	Pedestrians & Bicyclists	**Target Facilities**	Mid-block crossings
Cost	Low	**Crash Reduction**	Medium
Priority	Medium	**Invasiveness**	Low

Description. In-street pedestrian crossing signs are supplemental warning signs that are placed between travel lanes or in a median where a crosswalk is present. Signs are intended to be installed in addition to standard signage and are intended as an extra, highly visible reminder to motorists to stop for or yield to crossing pedestrians.

Figure 3-6 In-street pedestrian crossing sign (source)

Benefits. Countermeasures such as this one are intended to improve driver compliance with pedestrian crossings, increasing the rate at which motorists yield the right of way to pedestrians attempting to cross. With increased compliance, pedestrians can more reliably cross the road safely and will have to spend less time waiting for an appropriate gap in traffic to do so.

Implementation. These signs are most appropriate for roadways which have medium traffic volume levels, two or three lanes, and speed limits of 30 mph or less. Their effect can also be enhanced by pairing them with other countermeasures, such as raised crossings, bump-outs, high-visibility crosswalks, and others. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- The pedestrian crossing at Western Avenue and Vardon Lane near Western Avenue Elementary School

- The pedestrian crossings at Flossmoor Road and Sterling Avenue in the central business district; could be paired with bump-outs and other countermeasures
- The pedestrian crossings on Sterling Avenue and Central Drive near the Metra train station

3.3.5 Raised pedestrian crossing

Emphasis Area	Pedestrians & Bicyclists, Speed Management	**Target Facilities**	Mid-block crossings
Cost	Medium	**Crash Reduction**	High
Priority	Medium	**Invasiveness**	Medium

Description. Raised pedestrian crossings are ramped step tables which span the full width of a roadway and have high-visibility pedestrian crossing markings along the top portion. These facilities increase the visibility of the pedestrian crossing and require drivers to slow down as they cross, creating a traffic calming effect. Because crossings are generally raised to the level of the adjacent sidewalk, they also eliminate the need for curb ramps. These facilities are designed to make it uncomfortable for drivers to speed over them but are also low profile enough to minimally impact snowplows during the winter.

Figure 3-7 Raised pedestrian crossing (source)

Benefits. Increased visibility and traffic calming surrounding the crosswalk greatly increases drivers' yielding to pedestrians while also lowering the average speed of vehicles passing through the area. This helps to eliminate dangerous pedestrian crashes while also increasing the walkability of the surrounding area without much impact on the aesthetic or drivability of the roadway.

Implementation. These raised crossings are most appropriate on two- or three-lane roadways with a speed limit of 30 mph or less and average daily traffic below 9000. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- The pedestrian crossings along Park Drive near Leavitt Avenue Park and Parker Junior High School; speeding and aggressive driving along this area has been noted by multiple residents despite high pedestrian volumes
- The pedestrian crossing at Western Avenue and Vardon Lane near Western Avenue Elementary School
- The pedestrian crossings at Flossmoor Road and Sterling Avenue in the central business district; could be paired with bump-outs and other countermeasures
- The pedestrian crossings on Sterling Avenue and Central Drive near the Metra train station

3.3.6 Install pedestrian refuge islands at multilane intersections

Emphasis Area	Pedestrians & Bicyclists	**Target Facilities**	Various
Cost	Low	**Crash Reduction**	Medium
Priority	Low	**Invasiveness**	Low

Description. A pedestrian refuge island is a median with a protected space for pedestrians to stop when crossing a multilane road. This island is placed within an existing median or the surrounding roadway is narrowed to create space for it. The island is generally protected by a curb and additional signage indicating that it is a pedestrian facility.

Figure 3-8 Pedestrian refuge island rendering (source)

Benefits. Pedestrian refuge islands offer a safe location for pedestrians to stop while crossing a roadway without being in the way of oncoming traffic from any direction and also being protected from lane departures by a curb or similar features. This simplifies the process of crossing the roadway for pedestrian and allows them to focus on crossing half the road at a time, providing safer opportunities for crossing. It also offers a safe space for pedestrians who cannot move quickly enough to cross the entire roadway during available gaps, increasing accessibility.

Implementation. Refuge islands are desirable as midblock crossings, especially where roads feature 3 or more lanes and/or speeds of 35 mph or greater where crossing is most challenging. Though less common, they can also be installed at stop controlled or signalized intersections where traffic patterns or intersection geometry makes crossing challenging for some pedestrians. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- The intersections of Governors Highway at Braemar Road and Heather Road; should be implemented along with another high-visibility pedestrian crossing facility such as a pedestrian beacon to provide effective access to Homewood-Flossmoor Highschool on the west side of the roadway from the neighborhood on the east side of the roadway
- The intersection of Flossmoor Road and Douglas Avenue; this is a high-pedestrian volume location which serves multiple schools and other pedestrian generators which also has high vehicle traffic and poor yielding rates to pedestrians

3.3.7 Install pedestrian hybrid beacon mid-block crossing (HAWK)

Emphasis Area	Pedestrians & Bicyclists	**Target Facilities**	Various
Cost	Low	**Crash Reduction**	Medium
Priority	Low	**Invasiveness**	Low

Description. Pedestrian hybrid beacons, also known as high-intensity actuated crosswalks (HAWK), are a modern approach to providing pedestrian-oriented traffic control, providing protected, pedestrian-actuated crossings at midblock or other uncontrolled facilities. The design features a three-sectioned signal head with two red signals on top and a single yellow signal on bottom (see Figure 3-8) as well as supplementary signing and street markings.

Figure 3-9 Pedestrian refuge island rendering (source)

Benefits. Pedestrian hybrid beacons provide dedicated traffic control for pedestrians needing to cross a roadway at an uncontrolled location, avoiding the need to cross unsafely where no facility is present. Because the design is pedestrian-activated, it doesn't impact vehicle traffic except when it is in use and providing safe crossing for users. This makes it especially valuable at locations which exhibit short periods of heavy pedestrian activity, such as near schools, and community or religious facilities.

Implementation. These facilities are commonly implemented at uncontrolled midblock or uncontrolled intersection locations where many pedestrians may be crossing. They are popular to deploy near schools, community facilities, or other major pedestrian generators where there are no substitute facilities (such as signalized intersections) close by. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- The intersection of Flossmoor Road and Brassie Avenue; many residents have noted this intersection as a critical pedestrian safety concern due to high volumes of pedestrians and particularly students due to the nearby parks and school; multiple residents suggested installation of a pedestrian-actuated crossing signal due to poor compliance with existing crosswalks by motorists and regular speeding along the roadway

- The intersection of Flossmoor Road and Douglas Avenue; multiple residents have noted this intersection as a critical pedestrian safety concern due to high volumes of pedestrians and particularly students due to multiple nearby schools and public facilities; suggested installation of a pedestrian-actuated signal due to poor compliance with existing crosswalks by motorists
- The intersection of Governors Highway and Braemar Road; there is no pedestrian access from the east side of Governors Highway to Homewood-Flossmoor High School on the west side; consider installation of a pedestrian hybrid beacon crossing at this intersection to allow students to access the school by foot; currently, students cross Governors Highway without protection to get to school
- The intersection of Western Avenue and Vardon Lane; drivers regularly do not yield to pedestrians crossing Western Avenue to get to and from school

3.3.8 Construct new sidewalks

Emphasis Area	Pedestrians & Bicyclists	**Target Facilities**	Segments
Cost	Medium/High	**Crash Reduction**	Medium
Priority	High	**Invasiveness**	High

Description. Sidewalks are standard concrete or brick paths installed often adjacent and parallel to public roadways to allow for pedestrians to travel along similar paths to motorized vehicles. They can also be installed in other public areas to improve accessibility and connectivity within a community, such as between a neighborhood and a nearby school, park, or other public facility.

Benefits. An essential feature of an accessible community, sidewalks provide effective paths for vulnerable road users of all abilities to travel. They are safely separated from vehicle traffic, often with a curb and landscaped parkway for additional protection and separation. Modern facilities also feature ADA-compliant ramps and other features to ensure safety and accessibility for all users. It is also crucial that sidewalks be adequately maintained

to avoid major cracks, pitting, or uneven surfaces which may be tripping hazards or make the facility less accessible to some users.

Implementation. Within the Village of Flossmoor, only about 52% of roadways feature sidewalks on both sides of the street, with another 15% featuring sidewalks on just one side. All roadways which don't have sidewalks on one or both sides and which may be expected to serve regular volumes of pedestrians are candidates for sidewalks. Additionally, schools, parks, and other public facilities may be candidates for additional sidewalks which connect them directly to adjacent neighborhoods and other pedestrian generators. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- Install sidewalks along the west side of Governors Highway between Heather Road and Braemar Road; currently there is no accessible pedestrian path along this section making access to Homewood-Flossmoor High School from the north difficult
- Install sidewalk access from Monterey Drive to Homewood-Flossmoor High School to the south; currently, there is no direct access requiring much longer walks including along some portions which don't currently have sidewalks installed and are not accessible
- There are currently no pedestrian facilities along most of Dixie Highway throughout Flossmoor, though multiple residents have brought up this roadway as an important facility for pedestrian and bicycle connectivity; due to pavement and right of way limitations, it may be challenging to install pedestrian facilities without reducing the roadway cross section from four lanes to two or three lanes
- One consideration, instead of building new sidewalks, improve or upgrade existing sidewalks to meet ADA standards (if currently does not meet standards)

3.3.9 Implement bicycle lanes

Emphasis Area	Pedestrians & Bicyclists	**Target Facilities**	Segments
Cost	Medium	**Crash Reduction**	Medium
Priority	High	**Invasiveness**	Medium

Description. Bicycle lanes establish a dedicated space on roadways for bicyclists to occupy through pavement markings including solid edge lines, warning text, and sometimes a solid color fill throughout the lane. Bike lanes can be installed on existing pavement where space is available within the traveled way or on shoulders or through expansion of the pavement. Additionally, bike lanes can be installed as part of a roadway diet, where a four lane roadway is converted to a two lane roadway with a center two-way left turn lane and bicycle facilities.

Figure 3-10 Two-way bicycle lanes (source)

Benefits. Bicycle lanes provide dedicated space for bicyclists, minimizing conflicts with motor vehicles and often offering a level of physical separation. This improves safety as well as comfort level for bicyclists, making it a more attractive mode of active transportation for community members. Additionally, this separation improves driver experience as well, minimizing uncomfortable interactions on travel lanes. When a strong network of bicycle facilities is provided across a community, offering connectivity between residents, local institutions, and commercial locations, the effect is maximized and bicycle volumes may be expected to rise significantly.

Implementation. Because bicycle facilities are all about connectivity, this strategy should be viewed from a network perspective. Planners should identify the most important destinations and generators for bicycle traffic to come up with the most effective and efficient plan for utilizing existing bicycle facilities, converting viable roadways to include bike lanes, and constructing new infrastructure dedicated to serving bicycle traffic. An effective bicycle network also must include secondary infrastructure and policies, including safe bike racks at major destinations and appropriate bicycle-targeted signing and traffic signals, as well as strong traffic enforcement focused on bicyclist safety and other services which will help to foster a safe and sustainable bicycle culture within the community. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- Along Flossmoor Road from Kedzie Avenue to Dixie Highway
  - As Flossmoor Road is a central route for the village, servicing commuters to the train station, the central business district, multiple school campuses, and connectivity between the east and west sides of the village, strong bicycle facilities could serve a broad population and be highly effective.
  - West of Sterling Avenue, the existing roadbed is 36+ feet wide, providing adequate space to maintain the existing two through lanes and some portions of existing parallel parking while adding bidirectional bicycle lanes.
  - East of Sterling Avenue, the existing roadbed is 30+ feet wide, providing adequate space to maintain the existing two through lanes while adding bidirectional bicycle lanes.
- Sterling Avenue through the central business district and the Metra train station area

- Installation may require repurposing or relocating existing parking facilities on the east side of the street; however, existing parking facilities nearby with improved signing may be expected to make up for this; additionally, improved bicycle facilities may encourage more drivers to switch to a bicycle commute.

3.4 Major Intersection Recommendations

3.4.1 Offset left turn lanes on major intersection approaches

Emphasis Area	Intersections	**Target Facilities**	High-volume intersections
Cost	Low-Medium	**Crash Reduction**	Medium
Priority	High	**Invasiveness**	Low

Description. A common issue with left turn lanes at both signalized and unsignalized intersections is visibility of opposing traffic. When vehicles are present in the left turn lane on the opposite side of the intersection, they often can obstruct a motorist's view of opposing traffic, making it challenging to effectively identify an adequate gap in traffic to complete a left turn when it is permitted. Positive offset left turn lanes involve creating a relative offset between opposing left turn lanes, shifting each to the left from the perspective of drivers within each respective direction of travel. This reduces visual obstructions caused by opposing vehicles and makes gap identification easier.

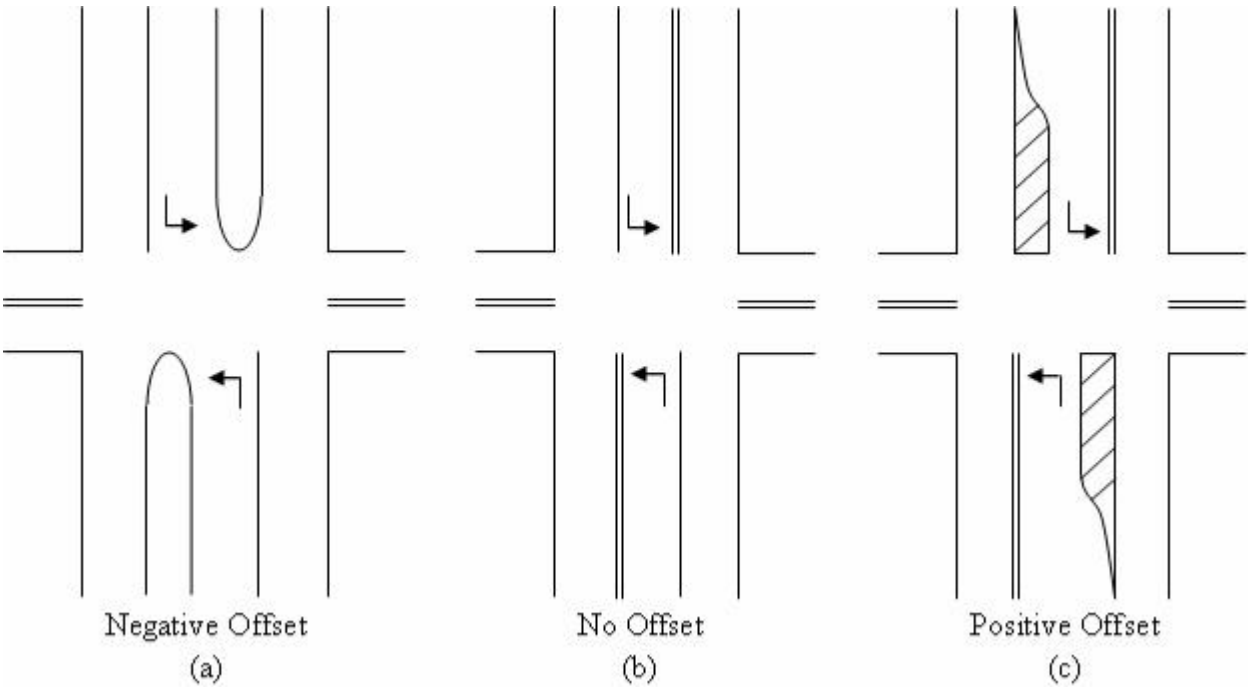

Figure 3-11 Positive offset left-turn lanes schematic (source)

Benefits. Positive offset left turn lanes are highly effective at improving the safety of left turns at signalized intersections under permissive left turn phasing (i.e., when making a turn without a green arrow indicating a protected phase) and unsignalized intersections with high volumes of through and turning traffic. By reducing visual obstructions for vehicles in the turn lanes, drivers are better able to view opposing traffic and identify adequate gaps in traffic to complete their turning movements.

Implementation. Positive offset left turn lanes are commonly deployed at high-volume signalized intersections, especially those which serve a high volume of turning vehicles, as well as some high-volume unsignalized intersections. Because this countermeasure is about improving gap acceptance during permissive left turn situations, it will have no effect at intersections which have only protected left turn phasing where gap acceptance is not required. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- The intersection of Flossmoor Road and Kedzie Avenue
- The intersection of Vollmer Road and Governors Highway
- The intersection of Vollmer Road and Pulaski Road; expected to have high volumes of turning vehicles serving Meijer grocery store

3.4.2 Restrict right turn on red

Emphasis Area	Intersections, Pedestrians & Bicyclists	**Target Facilities**	High-volume signalized intersections
Cost	Low	**Crash Reduction**	Medium
Priority	Medium	**Invasiveness**	Low

Description. At busy intersections, there are often many conflicting movements which create the possibility of collisions between vehicles or between a vehicle and a pedestrian. The right turning vehicle movement is among the movements most associated with dangerous pedestrian crashes. As motorists approach the intersection and are focused on identifying a gap in traffic to complete the maneuver, they may not take the time to look out for pedestrians within or entering the crosswalk. For this reason it is common to restrict drivers from turning right on red lights where pedestrians have a "walk" signal to pass in front of them. This is indicated by signage on signal mast arms or similar which indicate the restriction which may be enforced at all times or only during specific hours of the day. Additionally, restrictions can be enforced through automated enforcement.

Figure 3-12 No turn on red sign

Benefits. By restricting drivers from turning right on red lights, pedestrian crossing phases are offered additional protection, reducing the number of conflicts that pedestrians face when crossing the street during a "walk" phase. Though the restriction may have some effect on traffic through-put, the safety benefits can be great, especially at facilities with high volumes of pedestrian traffic. The countermeasure is often applied at many intersections within a city to normalize the safe behavior of yielding to pedestrian phases.

Implementation. This countermeasure is only applicable at signalized intersections and is most effective where regular volumes of pedestrians pass through an intersection and where turning traffic volumes are relatively high. However, policies may be considered which institute this restriction as a standard feature at all applicable intersections. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- The intersection of Flossmoor Road and Governors Highway; multiple residents have brought up this location as a major concern for pedestrian safety; right turn on red should be restricted during business hours due to adjacent schools which produce high volumes especially at the beginning and ending of school days
- The intersection of 187th Street and Dixie Highway; commercial facilities on all four corners of the intersection are pedestrian generators; consider restricting right turn on red during business hours; this location is on the corner of the boundaries of Flossmoor and may require coordination with Homewood

3.4.3 Improve right turning geometries

Emphasis Area	Intersections, Pedestrians & Bicyclists	**Target Facilities**	Mid- to high-speed intersections
Cost	High	**Crash Reduction**	Medium
Priority	Medium	**Invasiveness**	Medium

Description. As mentioned in section 3.4.2, right-turns at intersections are a movement commonly associated with pedestrian collisions. Such collisions are commonly related to motorists attempting to take the turn quickly

without taking time to check for conflicting pedestrians. To reduce such collisions, it is common to reduce the turning radius of curbs on the corners of an intersection, requiring drivers to maneuver them at lower speeds.

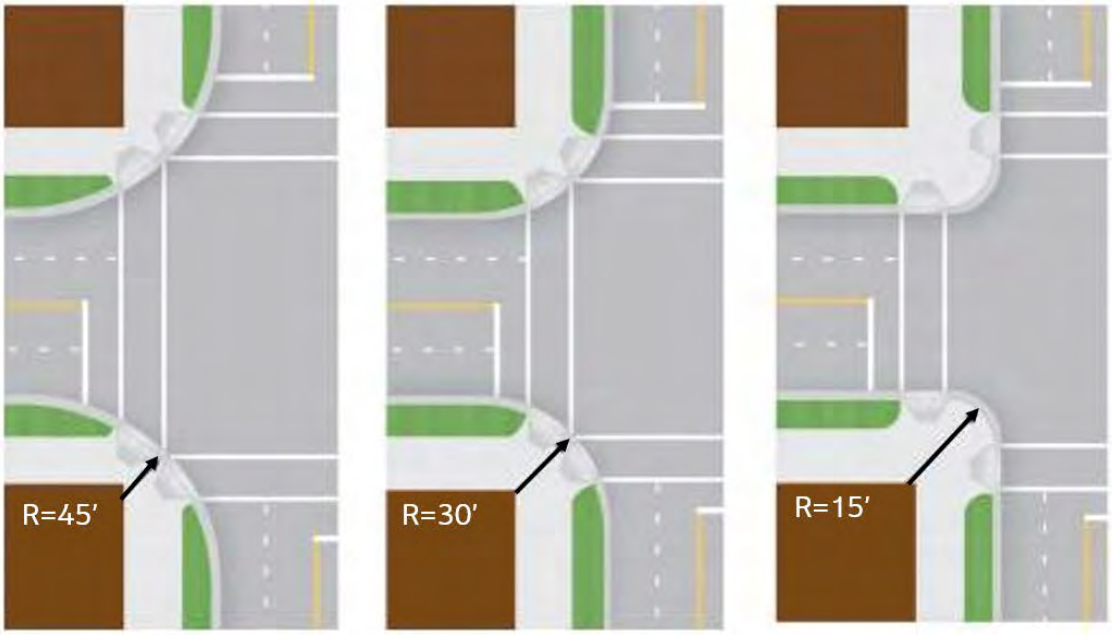

Figure 3-13 Right-turn curb radius tightening example with turning radius and crossing distance decreasing and safety performance increasing from left to right (source)

Benefits. By lowering the speeds of right-turning drivers, this countermeasure gives drivers additional time to check for pedestrians and requires them to take the turn more cautiously. Additionally, because their speeds are lowered, the severity of any collisions will be reduced significantly.

Implementation. This countermeasure is applicable at intersections which serve regular right turning traffic which is not required to come to a stop before making a turn, such as signalized intersections which allow right turns on red lights and minor leg stop controlled intersections. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- The geometry of all intersections along Park Drive between Leavitt Avenue and Central Drive should be reviewed for potential improvements to turning geometries
- The northeast corner of the intersection of Flossmoor Road and Sterling Avenue could be extended and given a tighter turning radius; aerial imagery shows skid marks along this corner, indicating that drivers are taking this tight turn at too-high speeds, endangering pedestrians crossing Sterling Avenue
- The intersection of Flossmoor Road and Dixie Highway and Cambridge Avenue; existing channelization from Flossmoor Road encourages vehicles to quickly cross the pedestrian crossing spanning Flossmoor Road and does not effectively merge traffic with Dixie Avenue, conflicting with traffic approaching from Cambridge Avenue; additionally, the curb on the northwest corner of the roadway has a large radius, creating a very long crossing distance for pedestrians crossing Flossmoor Road and encouraging vehicles turning right from southbound Dixie Highway to pass the crossing at too-high speeds; these issues can be addressed through the use of smaller radii curbs and some reconfiguration of existing channelization

- The intersection of Flossmoor Road and Kedzie Avenue; all curb radii could be reduced at this intersection which serves the nearby Homewood-Flossmoor High School

3.4.4 Modify signal phasing for left-turning movements

Emphasis Area	Intersections	**Target Facilities**	Signalized intersections
Cost	Low	**Crash Reduction**	Medium
Priority	High	**Invasiveness**	Low

Description. At many signalized intersections, it is common to allow drivers to make a left turn on a green light (i.e., a through traffic phase). In these cases, drivers must observe oncoming traffic and identify an appropriate gap to cross the opposing lanes of travel to complete the left turn. This maneuver is one that is often strongly associated with high-severity crashes, especially where left-turning or through traffic volumes are relatively high or where vision may be obstructed, making gap identification difficult and testing the patience of motorists who may choose to take risky moves to expedite the process.

To mitigate these risks, left turn phasing at the traffic light may be modified to offer greater protection to turning traffic. This can be done by implementing a protected left turn phase using a dedicated signal head which indicates with a green arrow when motorists can safely complete a left turn. This can be added as an additional phase while still allowing permissive left turns during through traffic green signals, or such permissive turns may be restricted with a red arrow signal, requiring that all left turns only be made during the green arrow condition. A less restrictive version of this utilizes a flashing yellow arrow during through traffic phasing, allowing permissive left turns when a green arrow is present, but still alerting motorists of the need to yield to oncoming traffic.

Figure 3-14 Protected left turn phasing (source)

Figure 3-15 Flashing yellow arrow (source)

Benefits. Restricting permissive left turns (i.e., left turns made during through traffic signals) essentially eliminates the potential for left turn-related crashes which tend to be severe. This greatly improves the overall safety of a signalized intersection without greatly impacting traffic flow if appropriate left turn lanes are present to avoid backups of turning vehicles. Alternatively, if a protected left turn phase (i.e., a green arrow phase) is implemented while still allowing permissive left turns, a moderate safety improvement can still be realized by transferring a portion of left turns being made to the protected phase. Additionally, the implementation of a flashing yellow arrow, though a simple countermeasure, can achieve additional safety benefits without incurring additional cost if the required signal head is already in place.

Implementation. Restricting left turns to only protected phases is most appropriately implemented at signalized intersections of multilane roadways which are particularly challenging to cross; such intersections should have existing left turn lanes to store turning vehicles during other phases. Adding a protected left turn phase while retaining permissive turning may be appropriate at any signalized intersection which experiences regular left turning traffic volumes. All signalized intersections which have permissive left turn phasing are good candidates for flashing yellow arrows, and this countermeasure is often implemented across a jurisdiction as a policy. Based

on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- The intersection of Vollmer Road and Dixie Highway; convert to protected left turn only due to skew angle and poor visibility on some approaches
- The intersection of Flossmoor Road and Governors Highway has left turn lanes and permitted/protected left turn phasing for all approaches; convert to protected left turn only due to skew angle and high traffic volumes

3.4.5 Upgrade to retroreflective backplates on signal heads

Emphasis Area	Intersections	**Target Facilities**	Signalized intersections
Cost	Low	**Crash Reduction**	Medium
Priority	Medium	**Invasiveness**	Medium

Description. Traditional traffic lights are framed with a non-reflective, black backplate which is not particularly conspicuous, especially at night when the signal blends into the dark background. To improve visibility of signals both during the day and at night, agencies are installing retroreflective backplates to traffic signal heads. These upgraded backplates are yellow, providing high contrast to the rest of the signal, and are highly reflective, appearing to be illuminated at night, making the signals particularly eye-catching in dark conditions when they are most likely to be missed.

Figure 3-16 Retroreflective traffic signal backplates (source)

Benefits. Improved visibility of traffic signals increases driver compliance and reduces the number of collisions resulting from driver inattention or misjudgment due to not seeing the signal. The benefits are especially pronounced at night and can offer strong reductions to crashes under dark conditions.

Implementation. These backplates are good options for installation at any signalized intersection and may be considered as a policy to be deployed village-wide. These backplates are most effective when installed at

intersections which are unlit and intersections with higher volumes of traffic. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- The intersection of Kedzie Avenue and Governors Highway; due to the size of this intersection, it may be difficult for drivers to see traffic signals across it at night from over 200' away; to improve visibility, retroreflective backplates should be considered along with the installation of larger, brighter, LED signal heads
- All of Flossmoor's 14 signalized intersections should be reviewed and considered for this treatment based on existing lighting features at each intersection

3.4.6 Traffic signal retiming and coordination

Emphasis Area	Intersections	**Target Facilities**	Signalized intersections
Cost	Low	**Crash Reduction**	Low
Priority	Medium	**Invasiveness**	Low

Description. Effective traffic signal timing is intended to optimize traffic flow and assign right-of-way using various inputs such as approach volumes, lane configuration and specific times of the day. Generally, as the number of lanes, greater traffic volume and frequency of traffic signals are present along roadway networks/corridors, the complexity of signal timing and signal operations increases. Retiming existing traffic signals is a cost effective strategy that generates quantifiable benefits for drivers measured by reduced vehicle delay, lower emissions and reduced fuel consumption. Some examples of signal retiming may include increasing though movement phases to increase traffic throughput, adding protected left-turn phases or introducing a leading or lagging left turn phase.

Benefits. Signal timing evaluation should be performed on a routine basis to ensure the appropriate level of service and to examine if modifications are needed. With current technology, some agencies have the ability to evaluate and retime signal cycles from a centralized traffic control center. This allows for a streamlined process to correct any observable issues. Identification of signals to evaluate the timing could be crash related, large queue lengths, heavy directional flows or to accommodate non-motorized road users such as leading pedestrian intervals (LPIs) or giving the right-of-way to emergency vehicles through a preemption phase. The signal phase for emergency vehicle preemption (EVP) changes traffic signals to allow safe passage of emergency vehicles including fire trucks, police and ambulances.

Implementation. Priority locations where signal retiming evaluation can take place may include location with a high intersection volumes or locations with multi-lane highways with right and left turn lanes present for all approaches. Occasionally, more in-depth traffic analysis is needed in order to determine if retiming would be appropriate solution to target the observed deficiency.

- The intersections of Vollmer Road at Governors Highway and Traditions Drive; residents have expressed discomfort with completing turns from Central Park Avenue onto Vollmer Road due to conflicting traffic; by retiming these two signals, regular gaps in traffic can be created to make these turns easier and safer

3.5 Village Planning Recommendations

3.5.1 Complete streets and right-sizing

Emphasis Area	Various	**Target Facilities**	Arterial roadways

Cost	Medium	**Crash Reduction**	Medium
Priority	High	**Invasiveness**	High

Description. Complete streets involves the design of new roadways or the conversion of existing roadways to provide safe and accessible facilities for all road users. This commonly includes pedestrian sidewalks along the roadway, dedicated bicycle paths that are often separated from vehicle traffic, ADA-compliant pedestrian crossings and signage, and "right-sized" motor vehicle facilities. Right-sizing involves the designing of vehicle facilities to only be as large as is needed to support current traffic conditions at safe speeds, and for speed limits to be set appropriately to match. Complete streets conversions often also include lowering of speed limits, installation of two-way left turn lanes, road diets, and other traffic calming measures which lower the average speed of motorists and improve safety for vulnerable road users.

Figure 3-17 Sample complete streets conversation schematic (source)

Benefits. Complete streets provide many benefits to all road users. Greater accessibility to vulnerable road users including pedestrians and bicyclists make facilities safer and more attractive for active transportation modes, improving quality of life and generating more traffic for local businesses. Additionally, lower speeds increase safety for motorists as well, reducing crashes of all kinds. Complete streets are designs to reorient roadway spaces to better serve the surrounding community instead of operating purely as a facility to serve motor vehicle through traffic.

Implementation. Complete streets conversions are highly dependent on the target location. They are commonly implemented on existing four-lane roadways or roadways which have adequate width to support the addition of mixed-mode facilities. When implementing complete streets, care should be taken to understand the impact of the reconfiguration on existing traffic patterns and expected future traffic demand. Additionally, coordination with adjacent businesses and stakeholders can help inform most effective practices. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- Flossmoor Road between Kedzie Avenue and Western Avenue; this roadway has been brought up by many community members as prominent safety concern, experiencing regular speeding and aggressive driving; additionally, though this roadway serves relatively high volumes of pedestrian and bicycle traffic, there are no dedicated bicycle lanes and pedestrian crossings are not robustly designed; this roadway features an existing pavement width of about 36', providing adequate space for a complete streets conversion

3.5.2 Modernize and improve visibility of signage

Emphasis Area	Intersections	**Target Facilities**	Various
Cost	Low	**Crash Reduction**	Low
Priority	Low	**Invasiveness**	Low

Description. As traffic signs age, their colors and reflectivity often fade, making them less eye-catching and apparent. This can sometimes negatively impact compliance due to some motorists not seeing them, such as drivers failing to stop at a stop sign or driving fast within a school zone. Signs should be periodically replaced based on their expected service life to help maximize compliance and therefore safety for drivers and vulnerable road users. Additionally, at locations where standard signs may not be enough to capture motorists' attention and ensure compliance, advanced sign designs such as illuminated LED signs may be employed which further increase their visibility, especially at night.

Figure 3-18 LED stop sign (source)

Benefits. Improving the visibility of roadway signs may be expected to increase driver compliance with stop controls, speed limits, and related signing, reducing crashes. At locations where standard signs may not be large enough or apparent enough to be fully visible during the day or at night, larger, more reflective, or illuminated signs can produce additional safety benefits.

Implementation. If an asset inventory is available, a public works department can systematically identify the oldest signs and replace them as needed. Additionally, by driving through neighborhoods, especially near schools and parks where additional signage is often present, signs which are in need of replacement or upgrades can be identified. Candidates for larger or illuminated signs may include those located far from the view of drivers such as on curves or those which might otherwise be missed due to visual obstructions. Based on the

findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- The intersection of Flossmoor Road and Sterling Avenue should have stop signs upgraded to higher visibility alternatives such as LED-illuminated; due to the underpass directly east of this intersection, motorists approaching from the east have limited visibility of existing stop signs; multiple residents have indicated that compliance with stop signs at this intersection is relatively poor
- Other intersections in the central business district may be considered for higher visibility designs due to high traffic volumes and traffic patterns which may be confusing to unfamiliar drivers
- School zone signing throughout the village should be reviewed to ensure it is up to standard and old signs with poor visibility should be replaced

3.5.3 Remove problematic vegetation or visual barriers at intersections

Emphasis Area	Intersections	**Target Facilities**	Various
Cost	Low	**Crash Reduction**	Medium
Priority	Low	**Invasiveness**	Low

Description. Over time, trees and vegetation may grow in such a way as to block or visually obscure important roadway signage, making it challenging for drivers to observe and interpret them. To mitigate this issue, visual barriers may be trimmed or removed to restore full visibility to signs.

Figure 3-19 Stop sign blocked by tree (source)

Benefits. Improving visibility of roadway signs may be expected to increase driver compliance with stop controls, speed limits, and related signing, reducing crashes.

Implementation. This countermeasure may be applicable in locations where there is extensive vegetation or many trees near the roadside. Such cases may be best identified by residents who find and report them to the appropriate jurisdiction. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- The intersection of Vollmer Road and Butterfield Lane; trees consistently block sight lines at this intersection making turning difficult, especially due to regular speeding traffic along Vollmer Road
- The intersection of Dixie Highway and Holbrook Road; some of the trees and brush on the north side of Holbrook Road are overgrown and are impacting visibility and encroaching on the roadway

4. Recommended Safety Policies and Activities

In the following subsections, a model for approaching traffic safety through policies and activities by collaborating with various partners will be introduced along with several key safety-focused policy and activity recommendations. These countermeasures were selected based on an analysis of the village's transportation network and historic safety performance as well as extensive input from community members and stakeholders. Along with each recommendation, a summary of a few helpful attributes is provided, including which emphasis area the recommendation addresses, which partners may commonly be involved with the effort, the level of complexity involved in deploying the recommendation, and the relative priority level based on contemporary research and local policy.

4.1 A Comprehensive Approach

Though roadway design and infrastructure improvements are a central part of any traffic safety program, they must be complemented with similarly innovative and data-driven behavioral strategies. In the study of traffic safety, it is common to highlight five groups of major players in achieving traffic safety using the "5-Es": engineers, educators, enforcement officers, emergency service providers, and everyone else. Another important element of traffic safety that may be identified as the sixth "E" is equity. Though engineering is discussed in the section on infrastructure improvements, the others and related policy and activity recommendations are discussed below.

4.1.1 Educators

Educators at all levels can help shape our community's drivers through safety-informed curricula and influential programming for students. By collaborating with educators and community leaders, the LRSP team can connect with younger road users to establish a stronger road safety culture which can produce long-term impacts. This can include awareness campaigns within schools, advancements in new driver education programs, safe school routes planning, and more.

4.1.2 Enforcement

Local and state police play an important role in traffic safety by enforcing laws designed to keep road users safe. They can act as a deterrent, responding to patterns of unsafe driving behaviors such as speeding, running red lights, drunk driving, and more, producing long-term results when deployed effectively. Partnerships with enforcement agencies can also provide great value to safety planning by tapping the unique insights of officers regarding their community's roads and safety needs as well as historic patterns of unsafe driver behaviors.

4.1.3 Emergency Service Providers

Emergency response and medical professionals are another key player in the pursuit of traffic safety. Though their role looks very different from the others, their capacity to respond quickly and effectively when needed to traffic crashes can save lives, and margins of a few minutes can be the difference between a severe injury and a fatality. For this reason, emergency medical responders have a critical role in the development of an effective, comprehensive road safety plan. Partnerships can produce a greater understanding of the needs of responders to react quickly to incidents, what types of injuries may be the most crucial to address through infrastructure improvements, and more.

4.1.4 Everyone Else

A catch-all for all community members who may be able to improve safety for themselves and those within their spheres of influence, this group may be the greatest resource available to a road safety team. This group knows

the community's roads, the shortcomings of their infrastructure, the needs of themselves and their neighbors, and more. They have the capacity to transmit messages and raise awareness, provide impetus to active programs, and represent the unique needs of their communities. Partnerships may involve local interest groups such as biking clubs and parent groups, institutions such as churches, community centers, and business groups, and more, involving all aspects of a community in the pursuit of safer roads.

4.1.5 Equity

True traffic safety means safety for everyone. Equity should be a foundational element of all policies and activities, as well as infrastructure improvements, and should be considered in all related decision making. Strategic questions should be asked along the way when determining policy plans. Is educational programming distributed equitably across the school system? Is adequate funding available to support the unique needs of each population with the community? Are enforcement officers receiving the necessary training to ensure equitable treatment of residents? By incorporating these considerations into programming, more equitable and effective outcomes can be achieved which further support the health and wellbeing of the community.

4.2 Community Planning Efforts

4.2.1 Create pedestrian safety and accessibility action plan

Emphasis Area	Pedestrians & Bicyclists	**Target Partner**	Various
Complexity	Medium	**Priority**	High

Description. In addition to implementing spot improvements to pedestrian facilities around Flossmoor in response to individual concerns brought up by residents, the village may consider developing and implementing a village-wide Pedestrian Safety and Accessibility Action Plan. Such a plan would involve an in-depth study of existing sidewalks, pedestrian crossings, and related facilities for safety and accessibility as well as a review of park and public building accessibility. Audits may be conducted for common pedestrian routes to identify underlying performance issues with existing pedestrian facilities, especially where relatively high pedestrian traffic demand exists, and to create targeted plans to address them. Additionally, a review of the area surrounding the village may be conducted, working with adjacent municipalities to ensure strong connectivity and consistency in planning and infrastructure design. Planning should also involve extensive input from community members as well as school district staff, accessibility advocates, and enforcement officers.

Benefits. By producing a comprehensive understanding of the state of pedestrian safety and accessibility across the village, targeted and efficient plans can be made to remedy them and produce results quickly. Collaborating with community members on this will increase resident awareness of the effort and produce more effective outcomes for all road users. Creating a safer and more accessible environment for pedestrians will also increase pedestrian traffic, support local businesses, elevate active transportation modes and physical health, bolster culture and community gathering spaces, and more.

Implementation. Development of a pedestrian action plan can look many ways and should be designed to suit the needs of each unique community. Pedestrian safety may be combined with bicycle safety to produce a unified Pedestrian and Bicycle Safety Action Plan. Some examples of resources and similar plans that may be referenced include:

- How to Develop a Pedestrian Safety Action Plan – FHWA
- How to Develop a Pedestrian Safety Action Plan – PedBikeInfo.org
- Culver City Bicycle and Pedestrian Action Plan – Culver City, California

- Regional Pedestrian Safety Action Plan Outline – Metropolitan Council, Minnesota
- USDOT Pedestrian Safety Action Plan – USDOT

4.2.2 Create a bicycle plan

Emphasis Area	Pedestrians & Bicyclists	**Target Partner**	Various
Complexity	Medium	**Priority**	High

Description. Beyond considering installation of individual sections of bicycle facilities around Flossmoor in response to individual concerns brought up by residents, the village may consider developing and implementing a village-wide Bicycle Safety Action Plan. Such a plan would involve an in-depth review of existing bicycle routes and bike parking racks as well as a study of bicycle traffic demand across the village—e.g., where there is the greatest need or desire for dedicated bicycle facilities. Audits may be conducted for common bicycle routes to identify needs and what improvements best suit existing roadways, and to create targeted plans to address them. Additionally, a review of the area surrounding the village may be conducted, working with adjacent municipalities to ensure consistency in planning and infrastructure design, tying into existing networks and bicycle plans for greatest effect. Planning should also involve extensive input from community members as well as school district staff, bicycle advocates, and enforcement officers.

Benefits. By producing a comprehensive understanding of the state of bicycle connectivity and bicyclist safety across the village, targeted and efficient plans can be made to produce effective results quickly. Collaborating with community members on this will increase resident awareness of the effort and produce more effective outcomes for all road users, ensuring that roadways are effectively designed to serve all. Creating a safer and more accessible environment for bicyclists will also increase bicycle traffic, reduce vehicle traffic, support active transportation modes, bolster culture and community gathering spaces, and more.

Implementation. Development of a bicycle safety action plan can look many ways and should be designed to suit the needs of each unique community. Bicycle safety may be combined with pedestrian safety to produce a unified Pedestrian and Bicycle Safety Action Plan. Some examples of resources and similar plans that may be referenced include:

- How to Develop a Pedestrian and Bicycle Safety Action Plan – FHWA
- Bicycle Safety Information Resource – NHTSA
- Bicycle and Pedestrian Safety Action Plan – Broward MPO, Florida
- Michigan Pedestrian and Bicycle Safety Action Plan – Michigan

4.2.3 Create a complete streets plan

Emphasis Area	Various	**Target Partner**	Various
Complexity	Medium	**Priority**	Medium

Description. Beyond considering conversion to complete streets for individual sections of existing roadway facilities around Flossmoor in response to individual concerns brought up by residents, the village may consider developing and implementing a village-wide Complete Streets Plan. Such a plan would involve an in-depth review of existing roadway facilities around the village which may be strong candidates for a complete streets conversion as well as the development of standards for future construction and reconstruction of roads within the city. Audits may be conducted for medium-volume, two- to four-lane roads which feature regular demand for bicycle and pedestrian traffic or which are overdesigned for existing vehicle traffic patterns. Additionally, a review

of the area surrounding the village may be conducted, working with adjacent municipalities to ensure consistency in planning and infrastructure design to create a cohesive roadway environment for road users. Planning should also involve extensive input from community members as well as business owners, bicycle advocates, and enforcement officers.

Benefits. Complete streets provide many benefits to all road users. Greater accessibility to vulnerable road users including pedestrians and bicyclists make facilities safer and more attractive for active transportation modes, improving quality of life and generating more traffic for local businesses. Additionally, lower speeds increase safety for motorists as well, reducing crashes of all kinds. Complete streets are designs to reorient roadway spaces to better serve the surrounding community instead of operating purely as a facility to serve motor vehicle through traffic.

Implementation. Development of a Complete Streets Plan can be scaled to meet the needs of the village and may be as simple as defining policies around road user prioritization and minimum facility design, or identifying high-priority facilities for complete streets conversions. It will require some studies of existing roadway facilities to understand traffic patterns and geometric design to determine appropriateness of conversions. Additionally, plan development may be done in concert with pedestrian or bicycle safety action plans to align the visions and to produce cohesive outcomes. Some examples of resources and similar plans that may be referenced include:

- CMAP's Complete Streets Toolkit – CMAP
- Complete Streets Policy for the Village of Skokie – Skokie, Illinois
- City of Aurora Complete Streets Policy – Aurora, Illinois
- Montgomery County Complete Streets Design Guide – Montgomery County, Maryland

4.2.4 Create an emergency services provision plan

Emphasis Area	Various	**Target Partner**	Emergency Service Providers
Complexity	Medium	**Priority**	Medium

Description. As emergency service providers respond to traffic crashes, it is important that adequate plans and policies are in place to ensure fast response times, safety for emergency responders, and equitable access to emergency services for community members. Though policies and standard practices around deployment of emergency responders may already be in place, they may not be regularly reviewed for optimal performance. Because a couple minutes could make the difference in cases of severe crashes, opportunities for improved response times and greater synergies between local emergency medical providers, enforcement officers, and other stakeholders may be highly valuable. Additionally, updated lines of communications between services may also be able to provide advancements to available data and reporting that can help support future safety planning efforts. Finally, the plan may also explore opportunities to engage with community members to inform them about expectations for behaviors around emergency situations that can improve their performance, such as pulling over for emergency vehicles and avoiding secondary crashes due to distraction when passing crash scenes.

Benefits. An emergency services provision plan may be able to produce shorter response times, improved lines of communication, and more benefits that can reduce crash severities when they happen. Additionally, identifying best practices for emergency response may improve safety for emergency service providers on the road by improving compliance with emergency vehicles, reducing traffic conflicts, or preempting service requirements.

Implementation. Development of an emergency services provision plan will be dependent on those stakeholders identified to participate and what opportunities may be identified for improvement. It should involve

collaborative discussions between central players including emergency medical service providers, local fire and police departments, nearby hospitals and trauma centers, and more. Some expected outcomes of such a plan may include:

- Critical emergency service routes and health care provider and trauma center locations
- Opportunities for improved communication between service providers
- Discussion of infrastructure implications and improvements such as traffic signal emergency vehicle preemption, necessary passing space, and impediments to fast response times
- Communication and outreach plan to engage with the public on their role in emergency response safety

4.3 Student and Young Driver Safety Outreach

4.3.1 Safe Routes to School program

Emphasis Area	Pedestrians & Bicycles, Young Drivers	**Target Partner**	Educators
Complexity	Medium	**Priority**	Medium

Description. Safe routes to school (SRTS) is an approach to school commuting that promotes active transportation modes for young students. By promoting infrastructure improvements, enforcement tools, educational programming, and other incentives, SRTS initiatives work to create safe and accessible opportunities for children to walk, bike, or take public transportation to school.

Figure 4-1 Students biking to school (source)

Benefits. SRTS promotes physical activity, community walkability, and vulnerable road user safety within communities and especially around schools. By ensuring safe and reliable connectivity such as sidewalks and bike paths, as well as safe roadway crossings and enforcement of safe driving behaviors near student commute routes, these programs can help improve safety for students and reduce unnecessary driving trips in sensitive areas around schools.

Implementation. SRTS programs can be implemented locally within Flossmoor through partnerships between school districts or individual schools and local agencies including the Village of Flossmoor and the Chicago

Metropolitan Agency for Planning. Extensive resources are available to support such programming through the U.S. Department of Transportation, including an SRTS guide, safe routes partnership, and more. Example case studies for consideration include:

- **Portland, Oregon** – The city features a strong partnership between the City of Portland, local schools, community organizations and agencies, and community members. Together, these stakeholders work to increase safe and healthy active transportation opportunities for students and their families. They provide informational resources to students and families, periodic update emails, educational programming, a non-emergency traffic safety concern telephone line, and more.
- **Denver, Colorado** – The city's partnership with the community is intended to serve schools and students to create safe and equitable opportunities for walking and biking to school. The program identifies several key benefits, including improved transportation safety, healthier students through daily physical activity, improved focus, connections to the community, and improved environmental friendliness.
- **New Mexico** – The state is producing a statewide Safe Routes to School program to encourage students to walk or bike to school. To further support this effort, they have also recently adopted their first Pedestrian Safety Action Plan, detailing five years of plans to reduce pedestrian crashes across the state.
- **East Central Wisconsin Regional SRTS** – This regional initiative actively involves itself with schools and communities throughout their multi-county area. Using student and parent surveys as well as bike and walk audits, the program helps to identify and improve routes for students to access schools safely by foot or bike. They also offer regular activities including a parent pledge, an Walk to School Day, as well as other programs to engage with students and families and their communities.

4.3.2 Social media engagement

Emphasis Area	Young Drivers	**Target Partner**	Educators, Everyone Else
Complexity	Low	**Priority**	Medium

Description. To promote safe driving behaviors and traffic safety culture among young road users, agencies can leverage social media platforms. This can involve periodic posting on Twitter and Facebook accounts by municipal or enforcement agencies, development of shareable media content such as graphics, educational videos, personal stories, and more. Private companies often use social media platforms for social marketing efforts by engaging in popular discourse and representing their values; this can be replicated in some cases by public agencies by commenting on popular posts, responding to relevant news and events, and more.

Benefits. Social engagement with young road users creates opportunities to connect with them in everyday life, sharing messages of the importance of safety and their role in keeping our roads safe. Engaging with students can also promote safe walking and biking behaviors and set the stage for them early for strong and safe driving behaviors when they do begin driving. Social media can also help connect with young people's parents and families indirectly, propagating important messages through social channels.

Implementation. If local municipal agencies, school districts, enforcement agencies, or other stakeholders have active social media accounts, these may begin to incorporate safety messaging. It is important to understand the nuances of social media interactions to maximize the effectiveness of this approach and the breadth of delivery, though any efforts possible can begin to provide great results in the short term. Example engagement strategies to consider include:

- **Weekly thematic messaging** – For example, "Walk to Work/School Wednesdays", where followers are encouraged to share photos of themselves walking to work or school to promote active transportation and pedestrian safety.

- **Hashtag promotion** – Encourage community members to use a safety-themed hashtag when posting related content online, such as "#SlowDownFlossmoor" to encourage safe driving speeds, "#Brake4Peds" to encourage yielding to pedestrians at crosswalks, or "#WeFullStop" to encourage compliance with stop controls.
- **Photo frames** – Create photo frames for social media users' profile pictures which feature a simple graphic and tagline which promote safe driving practices or programs.

4.3.3 Transportation Safety Week and activities

Emphasis Area	Young Drivers	**Target Partner**	All
Complexity	Medium	**Priority**	Medium

Description. Village-wide adoption of an annual "Traffic Safety Week" or similar, where programming is offered at schools, community centers, and throughout the village which promote safe transportation behaviors. Activities can include anything from school assembly events, to a safety-themed 5k run/walk, to a scavenger hunt for safety-related clues around local parks. Safety events can surround a theme for the year such as pedestrian safety, ending speeding, or safe behaviors for new drivers. Additional activities may include educational discussions with students about understanding traffic safety or exploring data related to traffic safety such as crashes and infrastructure data.

Benefits. Safety-oriented events can help to create and sustain a traffic safety culture, which has been identified as a critical element of reducing dangerous driving behaviors. Events can increase awareness of the role that each road user has in creating a safe environment, the way that decisions can impact others, and what can be done to help save lives. By providing consistent and reliable programming, residents will become more aware of ongoing efforts and help instill the lessons within their own households and spheres of influence.

Implementation. Successful implementation of an annual safety week requires extensive collaboration between village staff, school district staff, enforcement agencies, and more to ensure strong programming that can engage community members. Events may also require sponsorship by local businesses and stakeholders. A board of local volunteers may be assembled to help carry the task of planning and execution. Example activities produced by other agencies include:

- The California Office of Traffic Safety's "traffic safety superheroes" event, which featured pedestrian and bicyclist activities for children who were encouraged to dress up as their favorite super hero.
- Connecticut's Watch for Me program, which was funded by the state's Highway Safety Office, highlighted pedestrian safety facts and tips throughout the month of October, including Halloween, which can be an especially dangerous time for children. The program also included a campaign to increase awareness of new pedestrian safety laws.
- Missouri DOT has created the character Barrel Bob, a mascot for work zone safety who is made of modified traffic cones and barrels and who has been embraced by locals. Similar light-hearted efforts have been made by other agencies to engage residents and foster conversations around safety. Characters such as Barrel Bob have become a staple at agency events related to traffic safety.

4.3.4 Corporate and organizational partnerships

Emphasis Area	Various	**Target Partner**	Educators, Everyone Else
Complexity	Medium	**Priority**	Medium

Description. The role of corporate and organizational partnerships with government agencies can help provide additional resources and insights with the goal of improving safety for all road users. Understanding how the Four E's of traffic safety are leveraged through statewide planning efforts, businesses can also be leveraged in similar ways to promote safety driving practices.

Benefits. Corporations and national organizations tend to have different models than most publicly funded agencies which leads to a different perspective when attempting to address traffic safety concerns in local communities. These variances provide different perspectives and can lead to greater engagement between government and the community they serve.

Implementation. Some corporate entities and organizations that the Village of Flossmoor could consider partnering with include:

- **Students Against Destructive Decisions (SADD)** – Schools can work with the national SADD organization to create chapters within local middle and high schools. This organization focuses on empowering and engaging students to take matters of safety and positive transportation behaviors into their own hands.
- **Alliance Against Intoxicated Motorists (AAIM)** – AAIM was Illinois' first citizen action group dedicated to fighting against impaired driving behaviors through educational programs, advocacy, and victim assistance. Partnerships with AAIM include speaking engagements at school events, educational materials for parents of young drivers, and advocacy programming for families of loved ones lost to drunk driving.
- **Ford Motor Company** – In Illinois, Ford Motor company partnered with the Illinois State4 Police and IDOT to implement a state-wide Operation Teen Safe Driving program. This partnership devised a peer-led campaign focused on reducing distracted driving, speeding, and impaired driving among teens.
- **Illinois American Red Cross** – Recognizing the value of volunteering, the American Red Cross offers many opportunities for students to participate in voluntary activities that promote health and safety within their communities. Additionally, through blood drives, the organization helps provide life-saving services to victims of severe crashes.

4.4 Community Engagement Recommendations

4.4.1 Participatory budgeting program

Emphasis Area	Various	**Target Partner**	Everyone Else
Complexity	High	**Priority**	Medium

Description. Participatory budgeting (PB) is a democratic budgeting process which occurs through local programs at a growing number of cities and institutions across North America and the world, designed to foster civic engagement and equitable distribution of public funds. Through PB, community members directly decide how to spend a portion of a public budget through a multi-staged annual cycle. Each cycle, community members propose capital improvement projects related to recreation, education, and traffic safety. These project ideas are later vetted by community representatives and agency staff before being voted on by the public to determine a budget-constrained package of top-ranked projects.

Figure 4-2 Participatory budgeting events in the City of Chicago

Benefits. Participatory Budgeting programs produce a variety of public-driven capital improvement projects including some related to traffic safety. Because of the democratic nature of the program, these projects effectively reflect the expectations and priorities of the community, highlighting issues and solutions based on their input and consensus. Additionally, the program fosters greater public involvement in issues related to community safety by empowering community members to directly influence village budgeting decisions to improve public health and experiences.

Implementation. Participatory Budgeting programs require extensive training and planning to effectively implement. However, existing resources and examples are available which can help inform village staff about the program and how to implement it effectively and smoothly. Additionally, several wards within the nearby City of Chicago are currently implementing participatory budgeting and may serve as models for program development. The University of Illinois at Chicago's Greater Cities Institute also helps facilitate program development and implementation with the City of Chicago and may be able to provide additional support and information.

4.4.2 Participation in future community events

Emphasis Area	Various	**Target Partner**	Everyone Else
Complexity	Low	**Priority**	Medium

Description. In the development of the Village of Flossmoor's Local Road Safety Plan, the CMAP team has participated in multiple community engagement events. These events involved direct partnerships with the village and presented opportunities to engage directly with community members, providing educational materials and soliciting input on how to make the village's roads safer. This input has been crucial to the identification and prioritization of safety projects and policies, and continued participation by the village in similar events in the future could continue building this relationship and exposure with the public and provide additional valuable input for implementation of the LRSP and future efforts.

Figure 4-3 CMAP table at the National Night Out

Benefits. Community members' familiarity with the village's roads and the nuances of its safety performance under various conditions is invaluable and effectively supplements insights that can be achieved through analysis of available crash and infrastructure data. As these individuals' experiences span the entirety of the village's system, as drivers, pedestrians, and bicyclists, unique insights on context-specific safety performance concerns can be identified easily through one-on-one conversations at public events. Additionally, participation in such events helps to show community members that the village is actively working to improve their safety and values their insights, building trust and strong lines of communication.

Implementation. Participation involves some planning and communication with event organizers in the months prior a given event. Materials should be provided at the event including educational pamphlets, information on future events and initiatives related to traffic safety, inexpensive equipment or handouts related to safety (e.g., bike lights, reflectors, safety checklists), child engagement materials (e.g., candy, inexpensive toys), and tools for receiving visitor input (e.g., interactive maps, notebooks, surveys). Events to consider for future participation include:

- National Night Out (annual)
- Flossmoor Fest (annual)
- School sporting events (seasonal)

4.5 Enforcement Policy and Activity Recommendations

4.5.1 Red light running cameras at major intersections

Emphasis Area	Speed Management	**Target Partner**	Enforcement
Complexity	Medium	**Priority**	Medium

Description. Right angle or "T-bone" crashes at signalized intersections are often some of the most dangerous of all crashes due to the speed and the angle of collisions. While intersection design can help mitigate some crashes, it is crucial to supplement that with effective enforcement practices as a deterrent for dangerous driving behaviors. To eliminate enforcement bias, automated red light-running cameras can be deployed at critical

intersections to document cases of red light running and apply associated fines to deter future violations. Due to the countermeasure's proven effectiveness at saving lives, it has been advocated for by many national highway safety organizations including the AAA, the Governor's Highway Safety Association, Advocates for Highway and Auto Safety, and more.

Figure 4-4 Red light-running cameras (source)

Benefits. By enforcing violations for running red lights, this countermeasure is a proven-effective deterrent for dangerous driving behaviors and has been shown to decrease red light running instances and reduce related severe crashes. Additionally, the countermeasure is inexpensive to implement and provides an equitable solution by eliminating the potential biases introduced by human enforcement of red light running violations.

Implementation. Red light running cameras are most effective at signalized intersections with relatively high traffic volumes and speeds. This commonly means deploying them at the intersections of two major arterial roadways which may be most susceptible to red light running violations. Fines collected from violators feed back to the location, supporting safety improvements around the area. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- The intersection of Flossmoor Road and Governors Highway; community members indicated a high rate of vehicles speeding through red lights
- The intersection of Governors Highway and Kedzie Avenue; community members indicated vehicles not stopping at red lights

4.5.2 Automated speed enforcement on major roadways

Emphasis Area	Speed Management	**Target Partner**	Enforcement
Complexity	Medium	**Priority**	Medium

Description. Automated speed enforcement uses motion sensing technology to identify instances of excessive speeding along roadways which have a history of speeding issues. When a speeding vehicle is sensed, a photograph is taken of the offending vehicle and its license plate and a ticket is issued to the vehicle's owner by mail. Along with the ticket, information about the violation is provided including the evidentiary photos, giving the vehicle's owner the opportunity to contest it if needed. Similar to red light running cameras, this enforcement tactic removes individual enforcement officers from the process, eliminating concerns related to biases in the distribution and enforcement of violations. Locations which may be candidates for this treatment may also

consider instead or as a precursor installing dynamic speed feedback signs which show drivers their current speed next to a sign indicating the location's speed limit, alerting them when they are speeding.

Benefits. Research has shown that automated speed enforcement cameras can produce significant reductions in speeding along urban roadways, resulting in fewer crashes and lower severities of crashes. This is especially pronounced for pedestrian crashes, where lower speeds exponentially increase the survivability of a crash. Though implementation of this form of enforcement is controversial among some communities, it can offer immediate safety improvement effects.

Implementation. Automated speed enforcement is commonly implemented along arterial roadways which have a history of speeding, especially roadways which are adjacent to parks, schools, and other major pedestrian generators. Implementation should be announced to the public ahead of time and signs indicating the presence of cameras should be placed upstream of each enforcement location. Additionally, publicity around the enforcement should clearly indicate that the primary reason for its use is safety improvement and not additional revenue generated from citations. Fines collected from violators feed back to the location, supporting safety improvements around the area. Based on the findings of the Existing Conditions Report and initial input from residents, a few possible candidate locations identified within the Village of Flossmoor include:

- Flossmoor Road between Kedzie Avenue and Western Avenue; excessive speeding has been noted by many residents along this roadway despite the high volumes of pedestrian traffic and surrounding schools and parks
- Vollmer Road west of Central Park Avenue; residents of the neighborhood on the northwest corner of the intersection of Vollmer Road and Governors Highway have expressed an interest in improving the safety of turning onto Vollmer Road from this neighborhood; due to the number of lanes crossed when making a left turn from Central Park Avenue at this intersection as well as poor visibility to the west due to a crest vertical curve, speeding in this area may be particularly impactful on these residents; this location may also be a good candidate for dynamic speed feedback signing
- Governors Highway near Homewood-Flossmoor High School; excessive speeding and reckless driving has been noted in this area by many residents; additionally, inexperienced drivers exiting the high school often

have difficulty turning onto Governors Highway from the parking lot due to high traffic volumes and speeding vehicles

- Holbrook Road east of Dixie Highway; residents have noted excessive speeding and drag racing along this roadway; dense trees and shrubs make it difficult for vehicles entering the roadway from neighborhood streets and driveways especially with speeding vehicles; narrow clear zones to the sides of the roadway also increase the probability that crashes may be severe

4.5.3 Driver safety training for citation recipients

Emphasis Area	Speed Management	**Target Partner**	Education, Enforcement
Complexity	Medium	**Priority**	Medium

Description. Safety issues related to driver behavior, such as speeding and aggressive driving, require a balanced approach which includes both enforcement as well as educational components. To supplement existing and proposed enforcement activities, additional driver education requirements can be prescribed. These programs involve offering drivers who receive a citation related to speeding or aggressive driving the opportunity to take a traffic safety course in place of higher fines.

Benefits. This approach helps to encourage drivers to adopt safer driving behaviors through positive reinforcement instead of or in addition to punitive actions. This balanced, education-forward approach limits the negative economic effects of citations on community members and focuses on the rehabilitation of speeding or aggressive drivers through active, lifelong educational methods instead of just punitive measures which have a limited effect on many drivers.

Implementation. This type of program requires coordination and collaboration between local law enforcement, courts, and educators to develop the framework for the program as well as the educational materials themselves. Implementation should start with identifying the stakeholders and champions required to develop the program as well as involvement of the public to ensure that concerns and expectations are well understood and addressed.

4.5.4 High Visibility Enforcement Campaigns

Emphasis Area	Various	**Target Partner**	Enforcement, Educators
Complexity	Medium	**Priority**	Medium

Description. High Visibility Enforcement (HVE) is a universal traffic strategy approach designed to create a deterrence and change unlawful traffic behaviors (source). HVE techniques and approaches can vary depending on the emphasis area that is being targeted, however the most common enforcement campaigns target impaired, distracted, and aggressive drivers. Though some common enforcement tactics are intentionally low visibility, the deliberate use of highly visible elements and publicity strategies to engage and educate the public has been shown to promote voluntary compliance with the law.

Benefits. HVE campaigns can produce a noticeable impact on driver behavior in a relatively short amount of time, reducing instances of dangerous driver behaviors in critical locations. The framework for this type of program can be evaluated from the early planning stages to eventually a quantitative analysis of citation, arrest, and crash data, as well as survey data from local communities. Social media can also contribute to promoting such programs to keep the public aware of what efforts are being made to ensure safe travel for all road users.

Implementation. HVE campaigns are most effectively implemented where existing patterns of speeding have been detected and where reducing speeding violations are most crucial to vulnerable road users such as near schools and parks. Based on feedback from the community, the following locations have been identified as strong candidates for HVE campaigns:

- Western Avenue, near Western Avenue Elementary School – excessive speeding near a school
- Governors Highway, north of Flossmoor Road – excessive speeding, drag racing
- Central Park Avenue – excessive speeding in residential area
- Park Drive – excessive speeding and non-compliance with pedestrian crossings

5. Current Safety Efforts

The Village of Flossmoor has many stakeholders and many agencies actively pursuing improved transportation safety for all road users. Among them are Village of Flossmoor staff, the Flossmoor Police Department, Fire Department, Cook County Department of Transportation and Highways, the Illinois Department of Transportation, CMAP, and more. With all these active and invested safety partners, there are many projects and efforts already ongoing that can supplement the goals of Flossmoor's LRSP process. A few of these are discussed in the following sections.

5.1 Flossmoor Police Department Safety Studies

Utilizing several years of crash data as well as with extensive institutional knowledge and community familiarity, the Flossmoor Police department has performed multiple safety studies in recent years, working to explore opportunities to improve safety performance and reduce crashes on Flossmoor's roads using a data-driven approach. Among recent studies completed by the department, some have resulted in recommendations for infrastructure improvements for specific sites within the village while others have identified sites which are performing safely and are not expected to require intervention at this time. Highlights of these studies are discussed below to further expand on the recommendations of this document.

5.1.1 Uncontrolled Standard Residential Intersections

In a memorandum submitted by the Flossmoor Police Department, a crash analysis of the intersection of 189th Street and Springfield Avenue (Figure 5-1) was conducted to study the relative safety performance of the uncontrolled intersection. The analysis found that a total of 12 crashes had occurred at the intersection over the past ten years, including five which involved personal injuries and seven property damage only. This crash frequency was notably higher than comparable uncontrolled intersections in the area. The document concluded with a recommendation that stop controls be considered for the intersection to mitigate motorists' failure to yield to conflicting traffic.

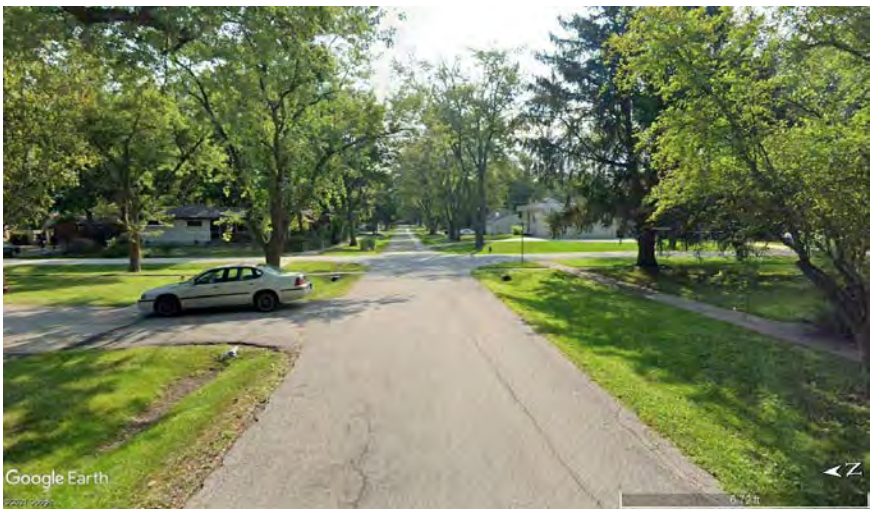

Figure 5-1 189th Street and Springfield Avenue Unsignalized Intersection Approach

Based on this analysis, it may be particularly valuable to further study other similar uncontrolled intersections within the Village of Flossmoor to identify locations which may benefit from the addition of stop controls. The east-west 189th Street notably intersects with the higher-volume Crawford Avenue to the west, while Springfield Avenue serves north-south traffic and intersects with other higher-volume roads. Additionally, motorist vision is

obstructed at some angles by trees, making it challenging to reliably identify when conflicting traffic is approaching the intersection. Additionally, the straight and uncontrolled nature of 189th Street may encourage aggressive driving or speeding. It may be expected that several uncontrolled intersections within Flossmoor could exhibit similar design and performance challenges that may be worth further investigation and diagnosis.

5.1.2 Uncontrolled Offset-T Residential Intersections

Additionally, the case of Vardon Lane and Travers Lane was studied, a residential intersection between two minor roads. The intersection features an offset-T configuration, where two through-streets intersect in a four-leg intersection, with the legs of one of the streets being offset from one another, requiring vehicles passing through to jog a short distance from one leg to the opposite leg. This configuration produces unique challenges to road users and can be confusing when no stop conditions are present. Because the intersection can be interpreted as two separate intersections, it is challenging for drivers to accurately determine right-of-way and yielding to conflicting traffic, risking a collision. Additionally, it can be especially challenging for pedestrians as drivers may be distracted and may not yield to them when they attempt to cross.

Based on analyses conducted by the Flossmoor Police Department, it was suggested that the intersection of Vardon Lane and Travers Lane should have stop signs installed to simplify its operation and improve safety. For intersections with this design, it is most common to install two-way stop control, with stop signs only on the legs that are offset, leaving the traffic on the other legs to free-flow. This effectively causes the offset intersection to operate as two separate T intersections, simplifying the traffic flow and avoiding the need for conflicting motorists to make assumptions about how the other will behave.

5.1.3 School Zone Signing and Intersections

The Flossmoor Police Department performed a study of the uncontrolled intersection of Scott Crescent and Lawrence Crescent near Heather Hill School of Flossmoor in 2017. The study found that inconsistent signage was being used to warn motorists about the presence of the school, including some deprecated designs, and the author recommended replacing these signs with consistent, modern high-visibility alternatives. Additionally, as the intersection regularly serves high volumes of pedestrian traffic, particularly children, during school hours, it was recommended that a stop sign be installed on Lawrence Crescent, the terminating route of the T intersection. This would allow for more gaps in traffic for pedestrians to use to cross the streets, especially for children who may otherwise become impatient and cross unsafely. It also simplifies the traffic patterns to allow crossing guards to manage crossing pedestrians more effectively.

Similar intersections near schools which serve high volumes of children or which require a crossing guard should be considered for similar safety improvements. Though such improvements may not be necessary at all geometrically similar intersections across the Village of Flossmoor, special care should be taken in managing traffic at intersections nearby schools. Be improving safety at these intersections, we can minimize the potential for crashes while also making walking to school a more attractive option for families, elevating healthy, sustainable, and community-building active transportation methods.

5.2 CCDOTH Planned Projects

The Cook County Department of Transportation and Highways (CCDOTH) is an important agency partner to the Village of Flossmoor, owning and operating over 6 miles of arterial roadways within the village, including Vollmer Road, Kedzie Avenue, and the majority of Flossmoor Road. For this reason, maintenance and improvement of these roads is managed by CCDOTH. The agency performs regular maintenance on these roadways as well as major rehabilitation projects and capital improvement projects. Some of these are discussed below.

5.2.1 Current Roadway Rehabilitation Plans

CCDOTH recently initiated a Countywide Pavement Rehabilitation Program with the goal of rehabilitating and extending the life of existing roadways across the county. This program includes 1.0 miles of Vollmer Road from Western Avenue to Dixie Highway, 1.4 miles of Holbrook Road from Dixie Highway to Halsted Street, and 3.9 miles of Flossmoor Road from Ridgeland Avenue to approximately 500 feet west of Kedzie Avenue. Program efforts will include patching and resurfacing of existing pavement, guardrail maintenance and upgrades, and ADA curb ramp replacements. Improvements are anticipated to be included in the Fiscal Year 2022 Program, subject to plan readiness and funding availability.

5.2.2 Phase I Study of Kedzie Avenue from Vollmer Road to 159th Street

Expected in early 2022, CCDOTH will perform a Phase I study of Kedzie Avenue, from Vollmer Road to 159th Street to the north of the Village of Flossmoor, including two miles of the roadway within the village. The project will include various reconstruction and rehabilitation projects along the corridor, addressing existing design and asset condition deficiencies, improving safety performance, and preparing the roadway for projected 2050 travel demands. The agency plans to offer robust public outreach and stakeholder involvement ahead of and throughout the project. Federal Surface Transportation Program grant funds will be used for the project.

5.2.3 Vollmer Road Viaduct Clearance Signage

Based on discussions with the Village of Olympia Fields, CCDOTH has studied the low-clearance railroad viaduct on Vollmer Road between Kedzie Avenue and Western Avenue. The location has experienced a high number of trucks striking viaduct structures or getting trapped within the underpass recently. Due to the complexity involved in expanding the clearance of structures such as this viaduct, the agency created a plan to improve signage for the location. The plan includes replacements to existing signs to improve visibility as well as installation of new signs on the approaches to the viaduct and the surrounding area. These improvements are expected to be installed by mid-October 2021.

Appendix E - Prioritization Table for Segments

Appendix E: Table E-1

Overall Rank	Priority Rank by Jur.	Inventory	Jurisdiction	Length	AADT	KABCO Crash Frequency and Weights (2015-2019)					Number of Public Comments	Performance Measure Score Sum	Normalized Performance Measure Score
						K - 217.248	A - 23.757	B - 6.546	C - 3.036	PDO - 1.0			
1	1	016 92820 000000	State	0.24	10,400	1	0	2	1	5	0	238.39	978.6
2	1	016 91629 000000	County	0.42	13,500	1	1	9	2	20	1	327.04	787.5
3	2	016 93778 000000	State	0.39	11,000	1	0	0	0	6	0	223.25	579.2
4	1	016 91625 000000	Municipality	0.51	6,250	1	0	2	0	0	7	237.35	467.1
5	2	016 91629 000000	County	0.56	20,600	0	2	8	5	66	2	183.12	329.4
6	3	016 92843 000000	State	0.23	13,300	0	0	4	2	12	1	45.28	199.4
7	4	016 92820 000000	State	0.18	10,400	0	0	0	2	7	19	32.08	176.5
8	3	016 92831 000000	County	0.34	13,700	0	2	0	0	6	2	55.52	163.5
10	6	016 92845 000000	State	0.31	14,400	0	1	1	0	2	13	45.31	144.8
11	4	016 93754 000000	County	0.38	8,300	0	0	2	2	7	18	44.18	117.4
12	5	016 91629 000000	County	0.45	20,600	0	0	2	2	26	4	49.18	109.8
13	7	016 93778 000000	State	0.25	13,800	0	0	2	4	2	0	27.26	107.7
15	7	016 91629 000000	County	0.51	13,500	0	0	2	6	14	3	48.34	95.4
16	8	016 93778 000000	State	0.30	11,000	0	0	3	0	4	4	27.65	90.9
19	2	016 03026 001985	Municipality	0.08	0	0	0	0	0	1	6	7	82.7
20	9	016 92845 000000	State	0.19	14,400	0	0	1	0	1	8	15.55	82.2
21	3	016 01052 001985	Municipality	0.05	0	0	0	1	0	1	5	12.55	81.3
22	3	016 01052 001985	Municipality	0.23	0	0	0	0	0	1	9	10	81.3
23	9	016 93754 000000	County	0.40	8,300	0	0	1	0	3	19	28.55	71.8
24	10	016 91629 000000	County	0.50	19,100	0	0	2	3	13	0	35.22	70.1
25	10	016 92843 000000	State	0.25	10,050	0	0	1	0	3	7	16.55	67.4
26	11	016 92845 000000	State	0.22	14,400	0	0	1	0	1	6	13.55	61.7
27	12	016 92845 000000	State	0.25	14,400	0	0	0	0	2	12	14	55.6
31	11	016 93754 000000	County	0.69	7,700	0	1	1	0	4	3	37.31	54.1
32	14	016 92845 000000	State	0.36	14,400	0	0	2	0	3	3	19.1	53.1
36	7	016 01052 001985	Municipality	0.40	0	0	0	1	0	0	12	18.55	46.7
37	15	016 93778 000000	State	0.31	11,000	0	0	1	1	5	0	14.59	46.5
46	15	016 03010 001985	Municipality	0.15	0	0	0	0	0	2	4	6	38.9
51	13	016 92831 000000	County	0.46	9,000	0	0	1	1	3	4	16.59	36.4
63	27	016 03026 001985	Municipality	0.20	0	0	0	0	0	2	4	6	29.6
71	34	016 03085A001985	Municipality	0.22	0	0	0	0	0	6	0	6	26.7
86	46	016 03071 001985	Municipality	0.50	0	0	0	0	0	3	8	11	21.8
89	49	016 02330 001055	Municipality	0.39	0	0	0	0	0	8	0	8	20.5
119	74	016 01051 001985	Municipality	0.64	0	0	0	0	0	0	8	8	12.5

Appendix F - Prioritization Table for Intersections

Appendix F: Table F-1

Overall Rank	Priority Rank by Jur.	Jurisdiction	IRIS Inventory + Beginning Station	Total Entering Vehicles	KABCO Crash Frequency and Weights (2015-2019)					Number of Public Comments	Performance Measure Score Sum	Normalized Performance Measure Score * 1,000,000
					K - 217.248	A - 23.757	B - 6.546	C - 3.036	PDO - 1.0			
1	1	State	016 92845 000000_3.32	27,900	0	2	15	23	127	14	356.53	12,778.92
2	2	State	016 91629 000000_3.98	33,150	0	4	13	17	80	0	311.74	9,403.86
3	1	County	016 92831 000000_31.19	21,400	0	3	9	8	20	6	180.47	8,433.32
4	2	County	016 93754 000000_6.05	8,300	0	1	0	0	0	34	57.76	6,958.67
5	3	State	016 91629 000000_4.71	29,650	0	2	13	7	42	0	195.86	6,605.87
6	3	County	016 01052 001985_0.68	8,300	0	0	1	3	9	25	49.65	5,982.41
7	4	State	016 92820 000000_2.13	18,400	0	1	3	6	18	26	105.61	5,739.73
8	5	State	016 91629 000000_6.77	21,525	0	0	5	10	59	0	122.09	5,672.01
9	6	State	016 92820 000000_2.63	19,400	0	1	6	4	22	11	108.18	5,576.13
10	7	State	016 93754 000000_4.14	19,475	0	1	6	3	21	1	94.14	4,833.94
11	8	State	016 92845 000000_2.3	21,675	0	1	3	2	9	40	98.47	4,542.88
12	4	County	016 91629 000000_4.99	27,650	0	0	8	6	48	0	118.58	4,288.75
13	9	State	016 92820 000000_2.42	10,400	0	1	1	2	2	5	43.38	4,170.67
14	10	State	016 92820 000000_1.82	10,400	0	0	1	2	4	20	36.62	3,520.96
15	5	County	016 01049 001985_0	8,300	0	0	0	0	1	28	29.00	3,493.98
16	11	State	016 92820 000000_1.42	10,400	0	0	2	1	9	10	35.13	3,377.69
17	12	State	016 92820 000000_1.64	10,400	0	0	1	2	5	16	33.62	3,232.50
18	13	State	016 92820 000000_1.93	10,400	0	1	0	0	0	7	30.76	2,957.40
19	15	State	016 92843 000000_4.13	16,425	0	1	0	2	7	4	40.83	2,485.78
20	16	State	016 92845 000000_1.81	14,400	0	0	0	1	2	29	34.04	2,363.61
21	6	County	016 91629 000000_5.6	20,600	0	1	2	1	5	3	47.89	2,324.51
22	7	County	016 01000 001985_0.18	8,300	0	0	0	0	4	15	19.00	2,289.16
23	17	State	016 92845 000000_2.1	14,400	0	0	0	1	0	26	29.04	2,016.39
24	8	County	0162871101 000000_0	7,705	0	0	0	2	6	1	13.07	1,696.56
25	9	County	016 93754 000000_5.43	8,300	0	0	0	0	6	8	14.00	1,686.75
26	18	State	016 91628 000000_0	11,775	0	0	1	2	7	0	19.62	1,666.07
27	19	State	016 93778 000000_12	13,800	0	0	2	2	2	0	21.16	1,533.62
28	10	County	016 02010 001985_0	8,300	0	0	0	0	0	11	11.00	1,325.30
29	11	County	016 92831 000000_30.95	13,700	0	0	1	0	10	0	16.55	1,207.74
30	20	State	016 03025 001985_0	13,800	0	0	1	1	5	0	14.58	1,056.67
31	13	County	016 92831 000000_32.12	9,000	0	0	0	1	1	5	9.04	1,004.00
32	21	State	016 92843 000000_4.69	10,050	0	0	0	0	0	10	10.00	995.02
33	23	State	016 92843 000000_4.85	10,050	0	0	0	0	0	9	9.00	895.52
34	24	State	016 92843 000000_4.37	10,050	0	0	0	0	0	9	9.00	895.52
35	25	State	016 03055 001985_0	13,800	0	0	1	0	5	0	11.55	836.67
36	16	County	016 91629 000000_4.2	19,400	0	0	0	2	8	0	14.07	725.36
37	27	State	016 92845 000000_3.1	14,512	0	0	0	1	1	6	10.04	691.57
38	18	County	016 92831 000000_31.3	13,700	0	0	0	1	1	5	9.04	659.56
39	29	State	016 92845 000000_2.17	14,400	0	0	0	0	0	9	9.00	625.00