VILLAGE OF KIRYAS JOEL

SAFETY ACTION PLAN

MAY 2025

PREPARED FOR

VILLAGE OF KIRYAS JOEL
INCORPORATED 1977
ORANGE COUNTY, N.Y.

PREPARED BY

Creighton Manning
a GAI Company

transpogroup
WHAT TRANSPORTATION CAN BE.

VERSION 1

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EXECUTIVE SUMMARY

In the past few years, the Village of Kiryas Joel has experienced several vehicle-related fatalities and injuries. Motivated by these losses, the Village has taken action to reduce these crashes to zero by 2045. Progress toward this goal will require focused effort and meaningful guidance provided by this document, a Safety Action Plan.

The purpose of Safe Streets and Roads for All (SS4A) grants is to improve roadway safety by significantly reducing or eliminating roadway fatalities and serious injuries through the development of a Safety Action Plan focused on all users including pedestrians, bicyclists, public transportation users, motorists, personal conveyance and micromobility users, and commercial vehicle operators. The goal of a Safety Action Plan is to develop a holistic, well-defined strategy to prevent roadway fatalities and serious injuries in a locality, Tribal area, or region. The grant requires a successful SAP to include the following components[1]:

- An official public commitment by a high-ranking public official and/or governing body (e.g. Mayor, City Council, Village Board of Trustees, etc.) to eliminate or reduce fatal and serious injury crashes within a specific period
- A committee, task force, or group responsible for oversight of SAP development, implementation, and monitoring
- Analysis of existing conditions and trends that provide baseline crash data and inform development of projects and strategies to reduce fatal and serious injury crashes
- Robust engagement and collaboration with the public and stakeholders that allows for community representation and feedback
- Equity considerations which ensure an inclusive and representative process that identifies under-served populations through demographic information
- An assessment of current policies, plans, guidelines, etc. to identify ways to further prioritize transportation safety
- A comprehensive set of projects and strategies that will address safety problems, as well as time ranges for implementation
- A method to measure progress over time with regular, publicly accessible updates on progress toward safety goals

Awarded SS4A funding for fiscal year 2023, Kiryas Joel has developed this Safety Action Plan (SAP) to identify strategies and projects intended to reduce fatal and serious injury crashes. Using robust public outreach, this plan considers the unique characteristics and needs of the community to guide policy and education recommendations.

1 USDOT, https://www.transportation.gov/grants/ss4a/comprehensive-safety-action-plans

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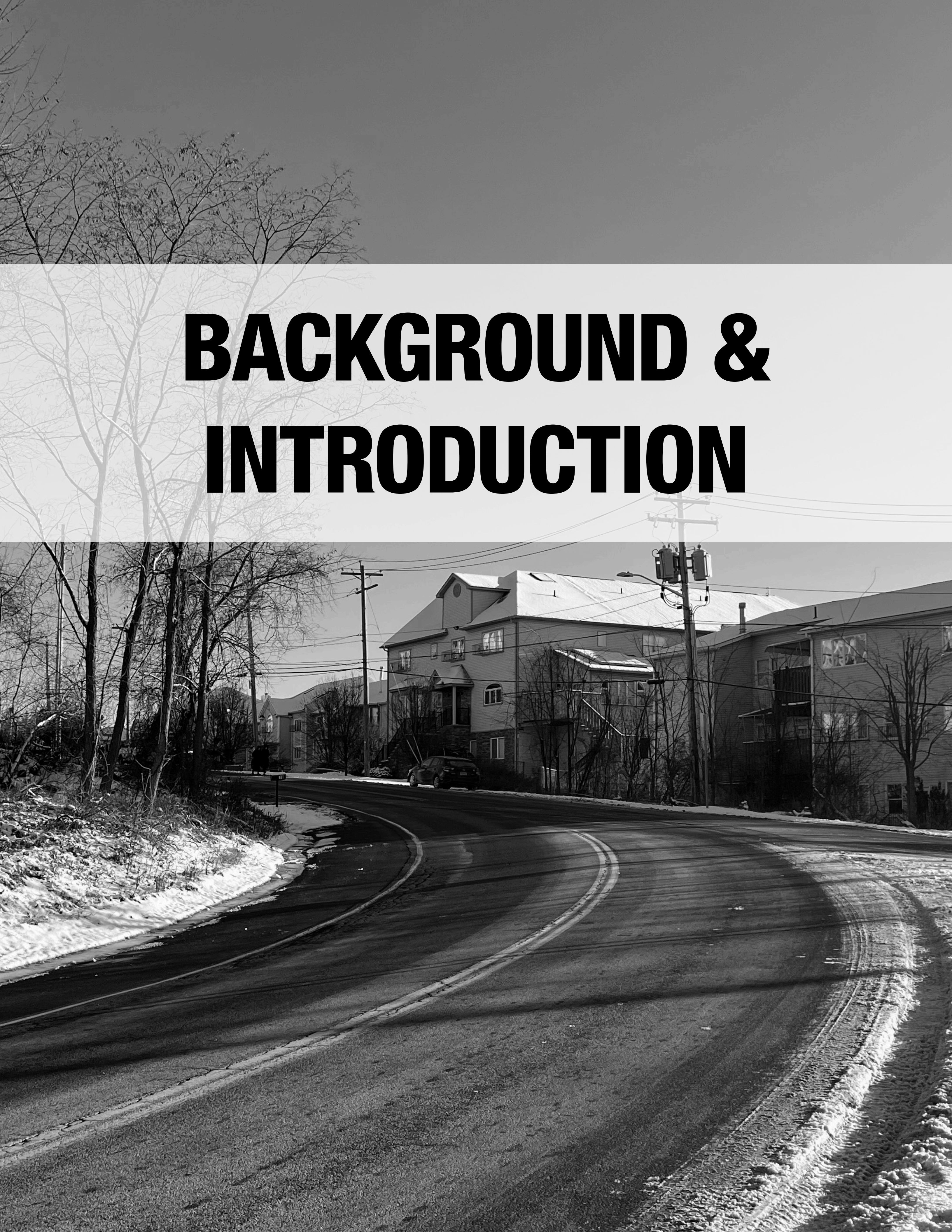
BACKGROUND & INTRODUCTION



BACKGROUND & INTRODUCTION

The Village of Kiryas Joel (KJ) is an incorporated village within the Town of Palm Tree located in eastern-central Orange County, New York, approximately 58 miles northwest of New York City (see Figure 1). Kiryas Joel is both the most populous and fastest growing municipality in Orange County with a population of 35,508[2] and an annual growth rate of 4%, which is five times that of the County overall. Additionally, with a population density of 22,571 persons/mi^2, as compared to the County's density of 494 persons/mi^2, the Village is almost fifty times more densely populated than its surrounding county. Kiryas Joel has unique transportation and mobility habits compared to other municipalities in the region. 39% of village households do not have access to a car, which is a rate four times greater than Orange County[3]. Additionally, although pedestrians were only involved in 4% of all crashes, they were involved in 50% of fatal/serious injury crashes. This statistic demonstrates the impact of serious crashes on the large pedestrian population of Kiryas Joel, and the Safety Action Plan must therefore prioritize projects and strategies that decrease create or protect pedestrian accommodations.

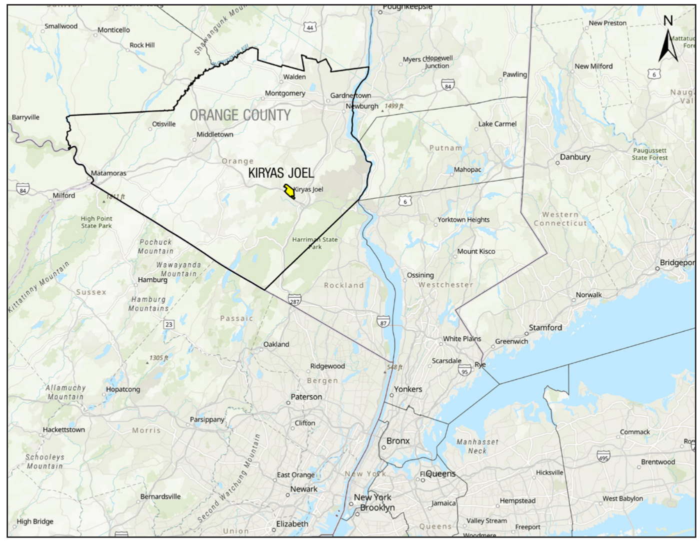


Figure 1. Map of Kiryas Joel in the context of the Tri-State Area

The Village population's activity patterns are characterized by high levels of walking and relatively low reliance on single-occupant motorized vehicle trips. Based on commuting patterns of persons aged 16+ employed and taking transport to work in the Village, 64% walked, used public transit, carpooled, worked from home, or used other means, such as a bicycle or taxi. Culturally, Kiryas Joel is an ultra-orthodox Satmar Jewish community; regular attendance at religious services, uniformly dark clothing, frequent hitchhiking, and observance of the Jewish Sabbath prohibiting automobile use creates unique transportation needs and vulnerabilities.

Leadership Commitment and Goal Setting

As the recipient of a Federal Safe Streets for All grant, it is required that the Village of Kiryas Joel (KJ) make a leadership commitment, adopted through local legislative resolution, that sets a target date to reach zero roadway fatal and serious injuries.

In a review of existing Vision Zero plans that are part of the Vision Zero Network[4], as well as preliminary plans written by other Safe Streets for All grantees, KJ found that member communities typically used a baseline date of **2050** to achieve zero fatal and serious injuries. Smaller communities occasionally shortened the time frame to about 20 years after their plan adoption.

The current number of fatalities and serious injuries in the Village, as well as the relatively small size and jurisdictional uniformity set the Village up well for a goal of zero by 2045. A commitment by leadership shows that KJ plans to take the projects and policies proposed in the plan seriously. The following legislative resolution has been drafted and passed by the Village board.

2 American Community Survey, 2022
3 Ibid.
4 Vision Zero Network, Vision Zero Communities: https://visionzeronetwork.org/resources/vision-zero-communities/

Resolution

In December 2024, the Kiryas Joel Village Board adopted a resolution committing to zero fatalities or serious injuries by 2045. Please see the appendix for full text of the resolution.

Planning Structure

Safety Action Plans are required by the terms of the Safe Streets for All grant to establish a planning structure; “a committee, task force, implementation group, or similar body charged with oversight of the Action Plan development, implementation, and monitoring”[5]. For the Village of Kiryas Joel Safety Action Plan, the project team assembled a Stakeholder Advisory Group (SAG) composed of leaders and experts in the community.

STAKEHOLDER ADVISORY GROUP

The Stakeholder Advisory Group (SAG) includes representation from many sectors including municipal leadership, housing, healthcare, workforce development, education, non-profit sector, public safety, infrastructure, transit, and agency partners in overlapping government jurisdictions. Table 1 shows names and titles of all SAG members invited to participate.

Availble members of the SAG met during the development of this Safety Action Plan to contribute their expertise to each phase of the project. As the SAP is adopted into Village legislation, the SAG will move forward with efforts to implement proposed projects and strategies, as well as update the public with periodic crash data updates.

- **SAG Meeting #1** – November 14, 2024, 3.00 PM, Project Kickoff
- **SAG Meeting #2** – February 7, 2024, 3.30 PM, Outreach Preparation
- **SAG Meeting #3** – April 10, 2024, 3.30 PM, Existing Conditions Summary
- **SAG Meeting #4** – September 24, 2024, 3.00 PM, Projects and Strategies Update

Table 1. Stakeholder Advisory Group Members

NAME	TITLE	ORGANIZATION
Gedalye Szegedin	Village Administrator	Village of Kiryas Joel
Moishe Gruber	Deputy Village Clerk	Village of Kiryas Joel
Aron Schreiber	Secretary	Village of Kiryas Joel
Chana Klein	Administrator	Village of Kiryas Joel
Joel Mertz	Planner	Village of Kiryas Joel
Elyah Farkas	Planner	Village of Kiryas Joel
Moses Neuman	Executive Director	KJ Public Housing Authority
Joel Mittelman	Executive Director	Aizer Health Inc
Moses Wertheimer	Director	Hamaspik of Orange County
Jacob Gluck	Treasurer	Workforce Development Agency
Shloma Zalmen Weiss	Administrator	United Talmudical Academy
Joel Petlin	Superintendent	KJ Union Free School District
Jay Greenfield	Program Director	Head Start
David Itzkowitz	Coordinator	Chaverim/Hatzula
Moses Witriol	Director	KJ Public Safety
Joseph Blumenthal	Director	KJ Fire
Elozer Gruber	Director	KJ EMS
Israel Knoblock	Liaison	KJ EMS
Yitzchok Shlome Polatzek	Liaison	KJ EMS
Zalmen Stern	Director	KJ DPW
Joel Cohen	Director	KJ Transit
Zev Farkas	Manager	KJ Transit
Tzudik Spitzer	Coordinator	KJ School Transportation
Joel Witriol	Director	Darkei Yosher inc
Joel Polatchek	Director	Focus in Chinuch
Kuni Laks	Operator	EMES Transportation
Shimon Liberman	Owner	Lieberman's Car Service
Mordche Goldberger	Owner	Motty's Car Service
Eli Gelb	Operator	Excellent Bus Service
Alan Sorenson	Commissioner	Orange County Transportation Council
Rob Parrington	Senior Planner	Transit Orange
Ed Denega	Commissioner	Orange County DPW
Sandra Jobson	Regional Planning and Program Manager	NYSDOT Region 8

5 FHWA, https://www.transportation.gov/grants/ss4a/comprehensive-safety-action-plans

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CRASH ANALYSIS

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CRASH ANALYSIS

Crash analysis is central to a Safety Action Plan, showing valuable information about the locations and causes of the village's most dangerous crashes. This section will include an evaluation of statewide crash trends and five-year crash trends in the study area. It will also compare the incidence of contributing factors or specific conditions between all crashes and fatal/serious injury crashes. This analysis is based on all crashes within the study area from January 1, 2018, through December 31, 2022 downloaded from New York State Department of Transportation's Crash Location and Engineering Analysis Repository (CLEAR) software[6] and identifies trends over this five-year analysis period.

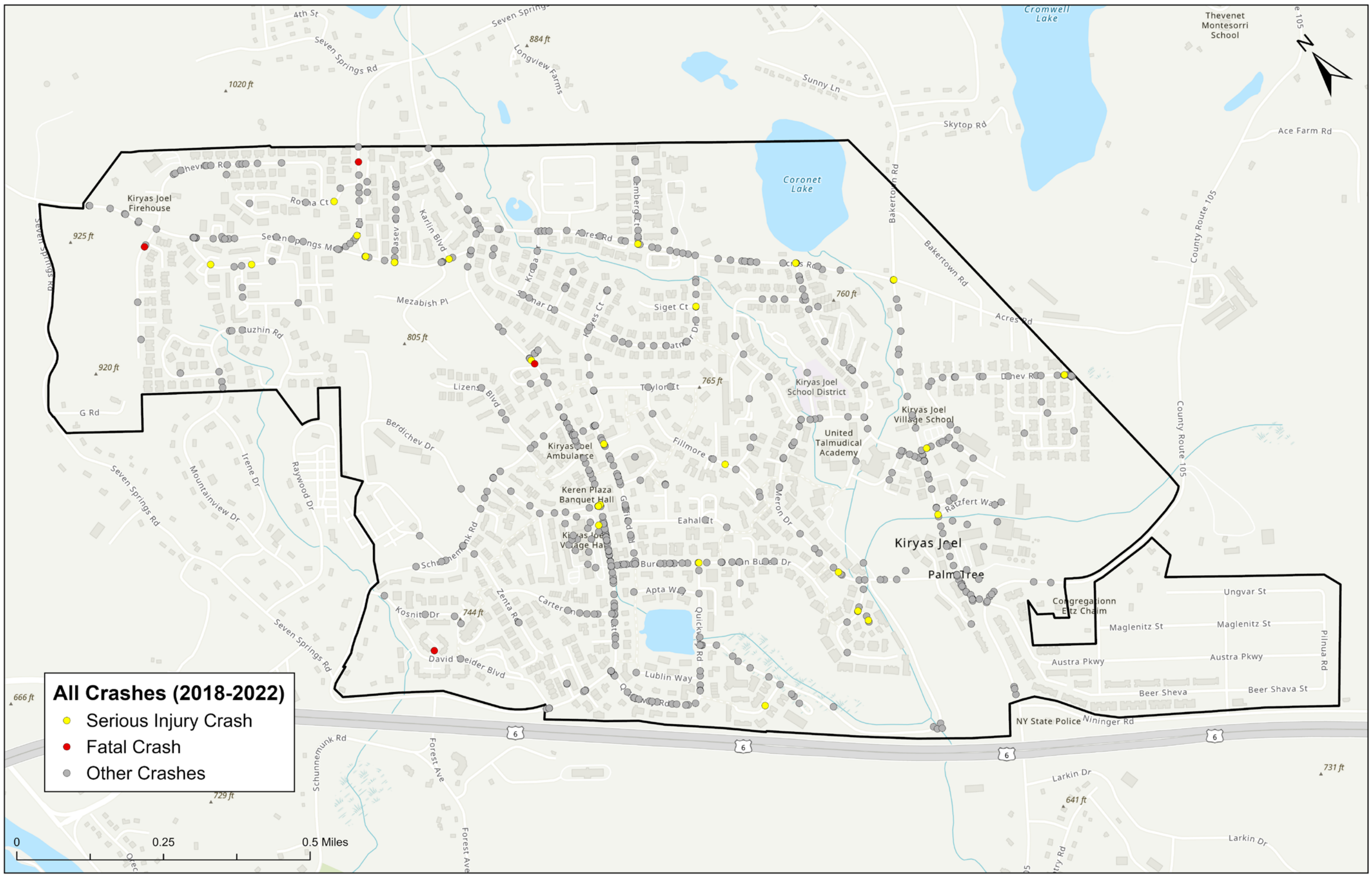

Figure 2. Map of all crashes in KJ, 2018–2022

Village Crash Numbers

Table 2 shows the total number of crashes, as well as the number of those in which a fatality or serious injury occurred, between the years 2013 and 2022.

Table 2. All crashes, 2013–2022

YEAR	ALL CRASHES	FATAL / SERIOUS INJURY CRASHES
2013	64	1
2014	68	2
2015	110	1
2016	102	5
2017	112	5
2018	150	7
2019	136	4
2020	138	5
2021	143	8
2022	151	6

6 CLEAR website

10 years of data provides useful context, but the SAP's analysis will be based on the most recent full five years of data available (2018-2022). Figure 3, below, shows both all crashes and fatal and serious injury crashes for the SAP's five-year analysis period as a bar graph. This representation shows more acutely the share of fatal and serious injuries compared to crashes with only lesser injuries or property damage.

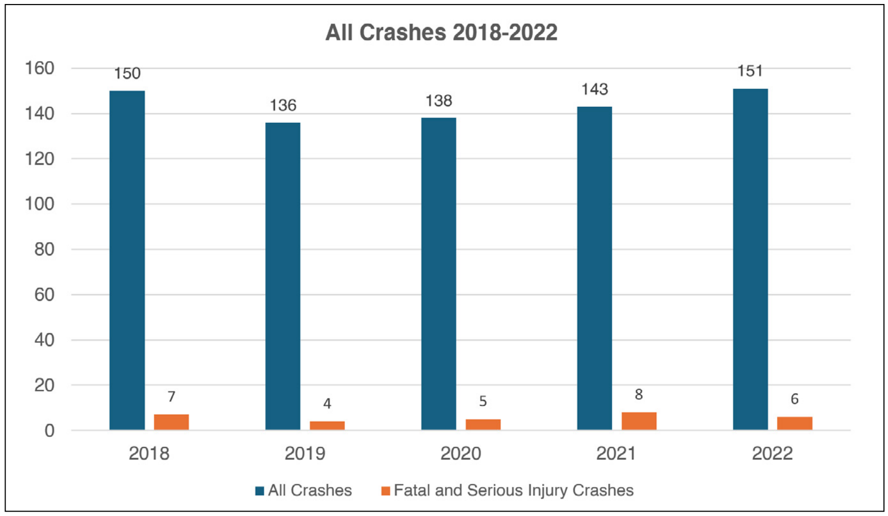

Figure 3. All crashes vs. fatal/serious crashes, 2018–2022

Crash Rates in Comparison

According to data from ITSMR[7], Kiryas Joel has a lower rate of fatal and serious injures than both New York State and Orange County. Figure 4 compares these rates by population.

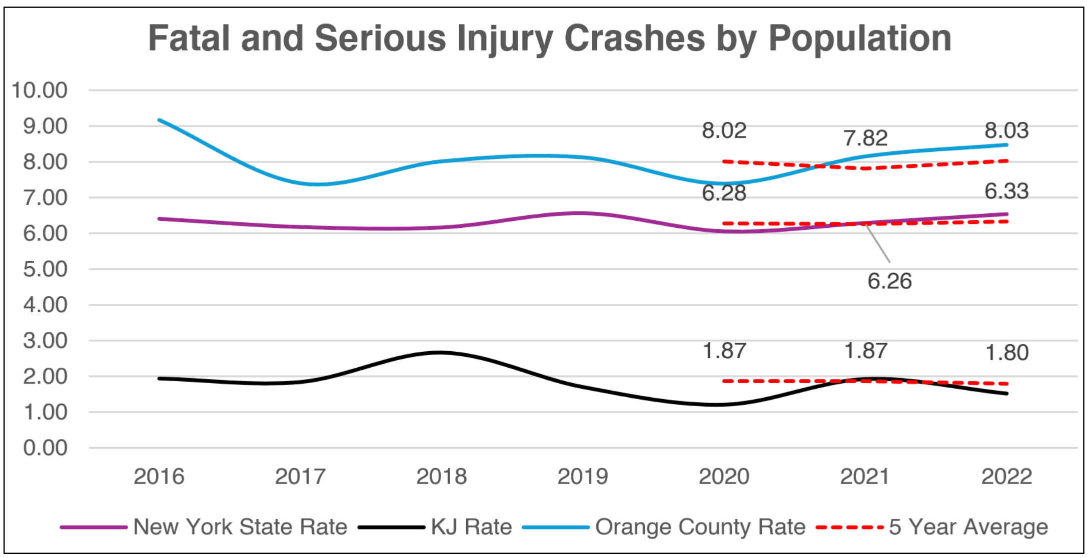

Figure 4. Fatal and Serious Injury Crash Rates by Village, County, and State

Crash Mode Analysis

Although pedestrians were only involved in 4% of all crashes, they were involved in 14 out of 28 fatal/serious injury crashes (50%, see Figure 6). This statistic demonstrates the impact of serious crashes on the large pedestrian population of Kiryas Joel. The SAP must therefore prioritize projects and strategies that decrease create or protect pedestrian accommodations.

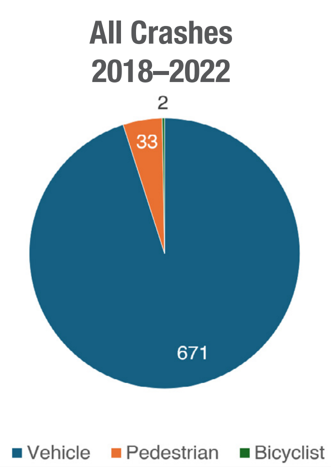

Figure 5. Pie chart of crash mode involving pedestrians and bicyclists

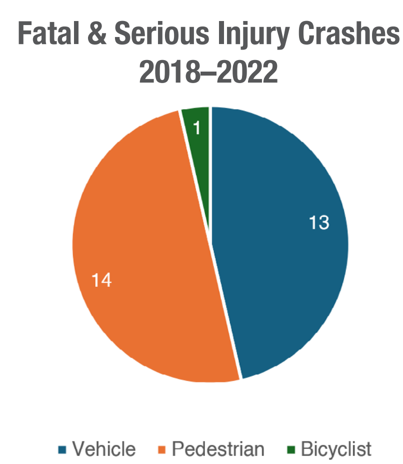

Figure 6. Pie chart of crash mode involved in fatal and serious injury crashes

7 Institute for Traffic Safety Management & Research, https://www.itsmr.org/traffic-safety-statistical-repository/

Collision Type Analysis

In the crash data pulled from CLEAR for all crashes 2018-2022, the three most common collision types were rear end, overtaking, and right angle. As shown in Figure 7, 162 crashes involved rear end collisions, 134 involved overtaking, and 110 crashes were right angle collisions.

When analyzing collision type for only fatal and serious injury crashes, the most common crash types change significantly. Figure 8 shows that 18 out of 28 fatal and serious injury crashes, 64%, were categorized as “other”, a category which includes pedestrian and bicycle crashes. The next most common collision type was head on, making up only 4 out of 28, or 14%. This statistic reinforces the importance of prioritizing pedestrian safety in projects, programs, and strategies developed as part of the Safety Action Plan.

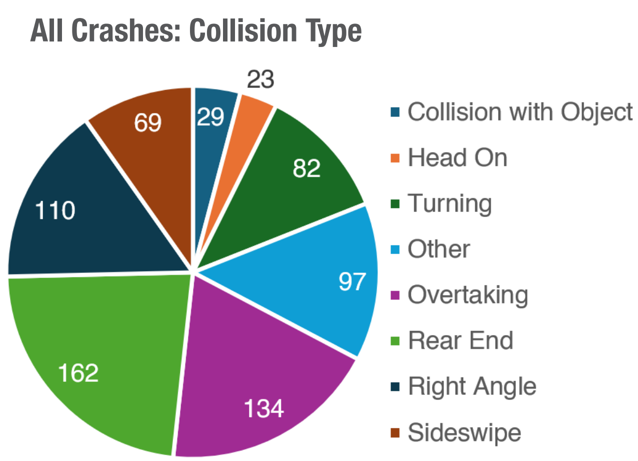

Figure 7. All crashes by collision type

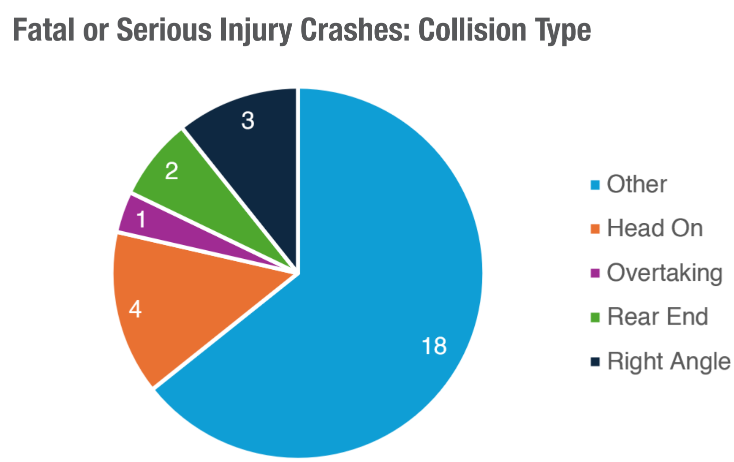

Figure 8. All crashes by collision type, for fatal and serious injury crashes

Contributing Factor Analysis

In their recording of crash data, NYSDOT’s CLEAR system identifies one or more contributing factors that can be used to explain the cause of a crash. This section will analyze the proportion of crashes caused by unsafe speed, unsafe passing, and failure to yield. Each factor’s presence will be analyzed as a proportion of all crashes compared to its proportion in only fatal and serious injury crashes.

As shown in Figure 9, 53 of all 706 crashes, approximately 7%, involved unsafe speed. In comparison, Figure 10 shows that 5 out of 28 fatal and serious injury crashes, 17%, involved unsafe speed. Similarly, Figure 11 shows that 124 out of 706 crashes, approximately 17%, involved the contributing factor of unsafe passing. In Figure 12, 7 out of 28 fatal and serious injury crashes, or ~v25%, involved unsafe passing, making this contributing factor slightly overrepresented in more severe crashes. As shown in Figure 13, 144 crashes out of 706, 20%, involved a vehicle failing to yield to a pedestrian, bicyclist, or other vehicle, and, as Figure 14 shows, a failure to yield was reported in 8 out of 28 instances, or 29% of the time. An analysis of common contributing crash factors show whether certain factors cause disproportionately severe impacts. Each contributing factor analyzed in this report caused more fatal/serious injury crashes proportionally when compared to all crash types. When priority locations are identified, analysis of their specific contributing factors may influence the mitigation strategies recommended.

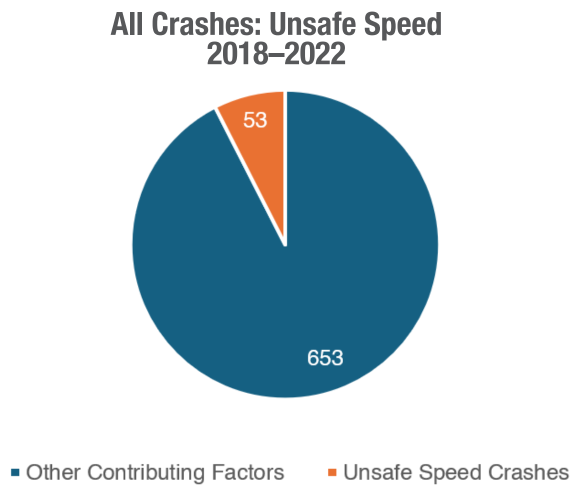

Figure 9. Unsafe speed crashes

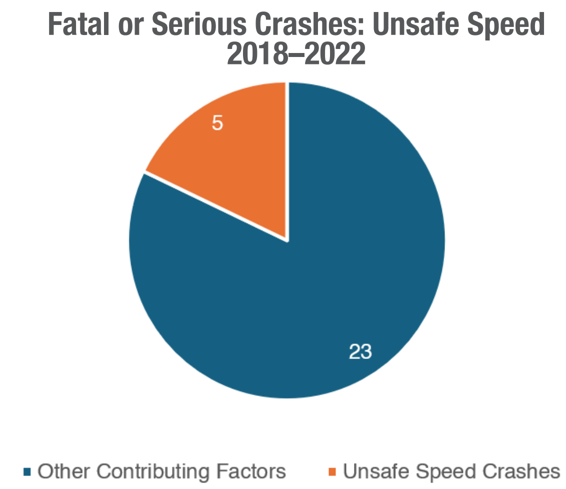

Figure 10. Fatal or serious injury crashes involving unsafe speed

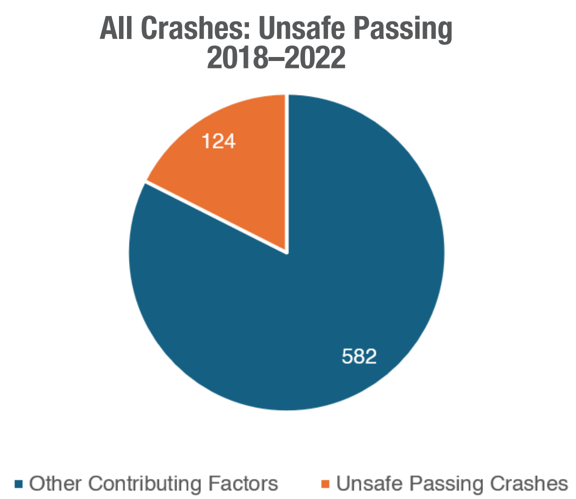

Figure 11. Unsafe passing crashes

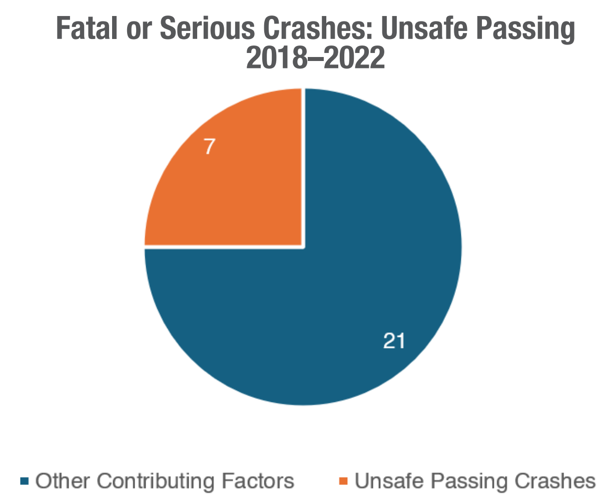

Figure 12. Fatal or serious injury crashes involving unsafe passing

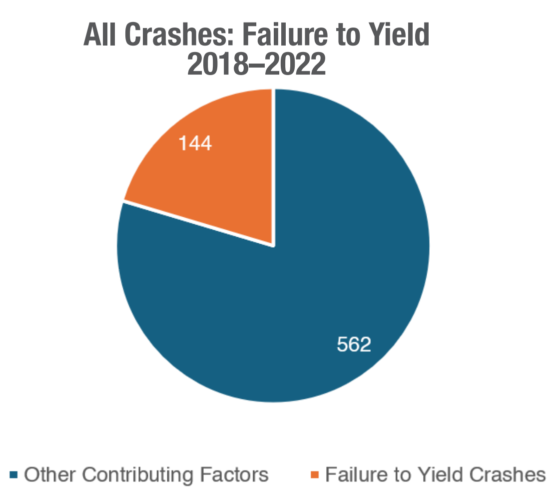

Figure 13. Failure to yield crashes

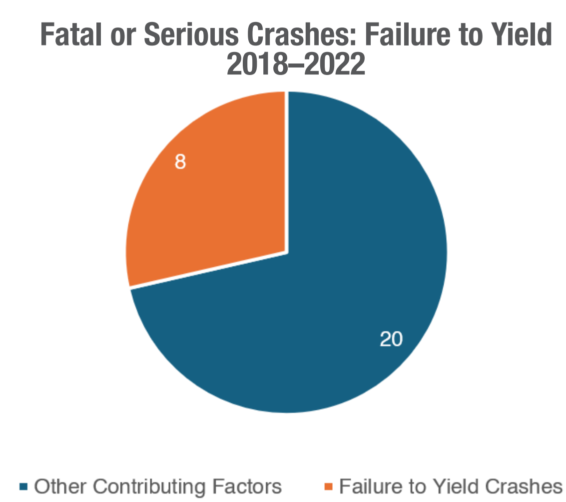

Figure 14. Fatal or serious injury crashes involving failure to yield

Crash Condition Analysis

In addition to contributing factors, CLEAR provides data on some roadway conditions that may give insight into potential safety solutions. Figure 15, for instance, shows that 267 crashes occurred at locations with no traffic control. 263 crashes occurred in a no passing zone. 117 occurred at stop-controlled intersections. 32 crashes occurred at signalized intersections.

When considering only fatal and serious injury crashes (Figure 16) 12 had no traffic control, 10 were in a no passing zone, three were at stop-controlled intersections, and two were at signalized intersections. The proportions are roughly equivalent in Figure 15 and Figure 16, suggesting that traffic control in crashes does not differ widely based on the crash severity.

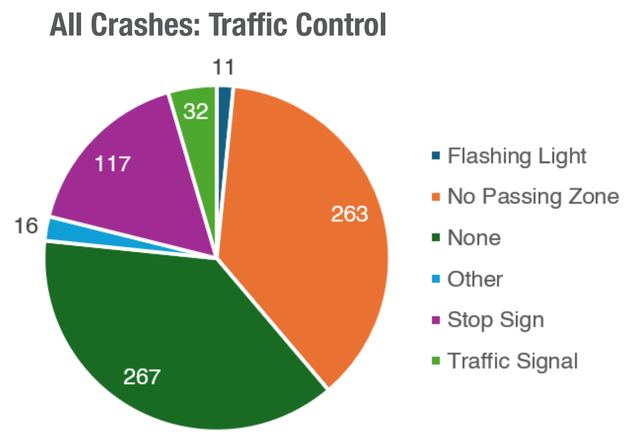

Figure 15. All crashes by traffic control

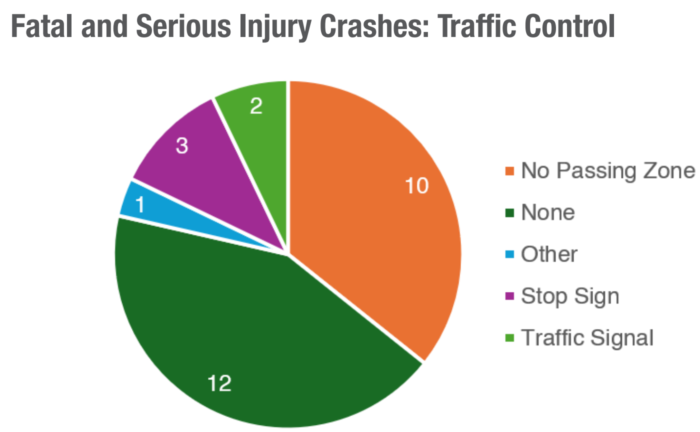

Figure 16. Fatal or serious injury crashes by traffic control

Crash Analysis Summary

In summary, unsafe speed, unsafe passing, and failure to yield were present as contributing factors in a greater proportion of fatal and serious injury crashes than in crashes of all severity. This piece of analysis will guide strategy and project development in the SAP toward including projects and strategies focused on reducing the instances of these contributing crash factors.

The analysis also showed there was not a disproportionate amount of fatal and serious injury crashes in any one traffic control condition when compared with all crashes. Therefore, while the traffic control condition can be considered when developing strategies and projects, it did not seem to be a major indicator of crash severity in the Village.

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III. EXISTING CONDITIONS

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EXISTING CONDITIONS PHOTOS

Despite the high number of pedestrians in Kiryas Joel, many of the Village's busiest intersections have substandard design provisions for pedestrian crossing, incomplete or faded crosswalks, or are missing sidewalks altogether.

Figure 17. Forest Rd & Mordche Sher Blvd

The busy intersection of Forest Road and Mordche Sher Boulevard has a pedestrian signal but lacks a high-visibility crosswalk and other pedestrian accommodations.

Interactions between cars and pedestrians are common throughout the Village, even in marked crosswalks.

Figure 18. Satmar Dr & Acres Rd

Figure 19. Meron Dr, north of Prag Blvd

Pedestrians often cross outside of crosswalks, as shown here on Meron Drive north of Prag Boulevard. This is particularly dangerous in low-light conditions.

Many locations lack sidewalks or other pedestrian facilties, including this residntial section of Seven Springs Mountain Road. The absence of sidewalks is especially problematic along residential and commercial roads with high levels of pedestrian activity.

Figure 20. Seven Springs Mountain Rd

While this crossing along Seven Springs Mountain Road has both a high-visibility crosswalk and signage, the overall quality and condition of the crossing can be improved. The crossing signs are placed in broken asphalt along the side of the road, and the crosswalk is fading. A new high-visibilty crosswalk and better placed signage or a flashing reflective beacon could increase the safety of this crossing.

Figure 21., Seven Springs Mountain Road, south of Nicklesburg Road

This intersection at Forest Rd & Schunnemunk Rd is uncontrolled, meaning vehicles from all directions lack stop signs or traffic signals. This type of intersection is dangerous for both pedestrians and drivers. Pedestrian accomodations, like sidewalks and crosswalks, and traffic control devices could make this intersection safer.

Figure 22. Forest Rd & Schunnemunk Rd

Figure 23. Daj Blvd

Frequently used by students walking to and from the nearby school, this crossing on Daj Boulevard is uncontrolled. This crossing could be improved with installation of a traffic control device, a high-visibility crosswalk, a reflective flashing beacon, or a raised pedestrian crossing.

Congestion, double parking, and idling can decrease the safety of roadways and pose risks to all road users. This issue can be alleviated by implementing strategies such as consistent parking regulations, parking enforcement, and optimized signalized interesctions.

Figure 24. Garfield Rd

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PUBLIC OUTREACH

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ENGAGEMENT & COLLABORATION

Public engagement is a vital portion of this project, and documenting the grievances and areas of concern from Village residents has helped build an evaluation of what needs to be fixed for achieving pedestrian safety. Using results from two public open house information sessions and one survey, this Safety Action Plan will show specific concerns from residents as the experience of those living in the village for many years provides a layer of information which data cannot show. Public outreach and engagement are extremely important for getting the larger picture about safety on the roads. Feedback has been taken on traffic safety hotspots, expectations, and suggestions.

The first section of engagement involved a public information session serving as an introduction to the study. This involved the presentation of initial crash trends, study goals, and distribution of the first survey. This meeting was held in person, allowing participants to better understand and connect with the goals of this project. Finally, public engagement concluded with the presentation of recommendations.

Public Meeting #1

The project's first public meeting was held February 22, 2024 at 7.30 PM in the Town of Palm Tree Justice Court at 46 Bakertown Road in Kiryas Joel. A presentation was given to provide background on the project, its funding, and the development process of a Safety Action Plan. Graphics, tables, and maps showed the Village's crash history by location. The following comments encompass general notes, concerns, and suggestions from the attendees, listed by topic.

PUBLIC MEETING #1 COMMENTS SUMMARY

PEDESTRIAN IMPROVEMENTS

- Support for Leading Pedestrian Interval treatments at signalized pedestrian crossings
- Pedestrian bridges were suggested to alleviate conflicts between pedestrians and cars. It was noted that some are being planned and designed
- Pedestrian fences were proposed to limit people from crossing the street; probably not many places in the village where this would be warranted
- Mid-block crossings were mentioned multiple times
- Pedestrians often walk into the street in between parked cars, and it is hard to recognize them. Pedestrian islands at intersections would shorten crossing distances and make pedestrians easier to see
- Many pedestrian crossings are long and could benefit from refuge islands
- Fencing was mentioned to stop people from crossing mid-block

PUBLIC MEETING #1 AT A GLANCE

25 ATTENDEES

FEBRUARY 22, 20224

PUBLIC MEETING #1 COMMENTS SUMMARY

TRAFFIC CALMING

- Channelization or daylighting at no parking areas could increase compliance and then help with pedestrian visibility
- Daylighting and visibility at corners – explained you can use striping or flexible delineators; member of the community pointed out the use of bump outs
- RRFBs could be useful at uncontrolled crossings
- Physical curb extensions could also help but would involve a trade-off with parking space availability
- Some private streets should be considered such as the back entrance to the shopping center
- Medians – lots of interest in these, especially in the areas where it is wide enough
- Roundabouts – people discussed these, there has been a proposal for them, space concerns, DEP didn't like the idea because of wetlands
- Community members asked if parking could be removed on narrow streets
- Some community members mentioned that the turning lanes are not big enough

PUBLIC MEETING #1 COMMENTS SUMMARY

ENFORCEMENT

- Residents have seen some police enforcement at uncontrolled crossings when cars don't adequately stop
- More enforcement is needed, especially with parking, drivers park too close to intersections
- More speed enforcement is needed

PUBLIC MEETING #1 COMMENTS SUMMARY

ROADWAY MAINTENANCE

- Pavement markings are poor, very faded, hard to see
- Roadway surface is poor, potholes
- Regular roadway maintenance is needed, but it was noted that it is very difficult to keep up with the impacts from the construction vehicles which are in the village for all the housing development
- Street signs are not clear or are sometimes turned so that you can't see the name of the road until it is too late

PUBLIC MEETING #1 COMMENTS SUMMARY

PUBLIC TRANSIT / SCHOOL BUSES

- Some in attendance suggest that expanding public transit would create a safer environment with less driving
- School buses are everywhere and some of them are full after 3 stops, so they drop off and then head back out
- The village is getting a Bus Patrol contract (cameras on the buses); one of the first municipalities in Orange County
- Transit ridership is up, which is good because it takes cars off the road, though some have heard from taxi drivers that their business is hurting
- Cars park in the bus stops; it is difficult for bus drivers to pick-up/drop-off, they never use the same space as a bus stop two days in a row

Public Survey #1

As part of the engagement, the Village wanted to survey the community to identify specific locations of concern and issues of greatest importance. Due to the limited Internet access among KJ residents, a hard copy paper survey was mailed to every household via the water bill and was also distributed at key locations in the community such as supermarkets and the Village Hall. Additionally, the survey was written in English and Yiddish, to provide language access to Kiryas Joel's large Yiddish-speaking community. The survey was comprised of a map of the Village and contained two parts. The first asked respondents to circle two strategies out of five total that they believe would be effective in making the streets of the Village safer for all users. The first four options included:

PUBLIC SURVEY #1 AT A GLANCE

472 responses

Open from Feb 15 – Mar 15, 2024

Mailed to over 8,000 households

- Increased enforcement of traffic laws
- Public information campaigns to promote safer behavior
- More pedestrian infrastructure
- Improved bus transportation

The final option allowed respondents to provide their own suggestion. The second portion of the survey asked respondents to mark an 'X' on three locations on the map where they believe it is unsafe to walk or drive. Respondents could also write the location in the space provided. Surveys were mailed in early February 2024 to all, approximately 8,000 households. Surveys were also distributed at Village Hall, on Village buses, and at Public Meeting #1. Completed surveys could be mailed to or dropped off at Village Hall, returned to drop off boxes on Village buses, or handed in at Public Meeting #1. All in all, 472 surveys were completed.

Each survey was numbered and added to a database. The database of tabulated surveys was used to produce visualizations that display the trends of survey responses. Responses that were written in Yiddish were translated by Village leadership. Many of the survey responses included issues and concerns that were raised at Public Meeting #1.

Figure 25 shows an example of a completed survey. These surveys were distributed to residents in advance of the project's public meeting. This survey was open from approximately 2/15/2024 until 3/15/2024.

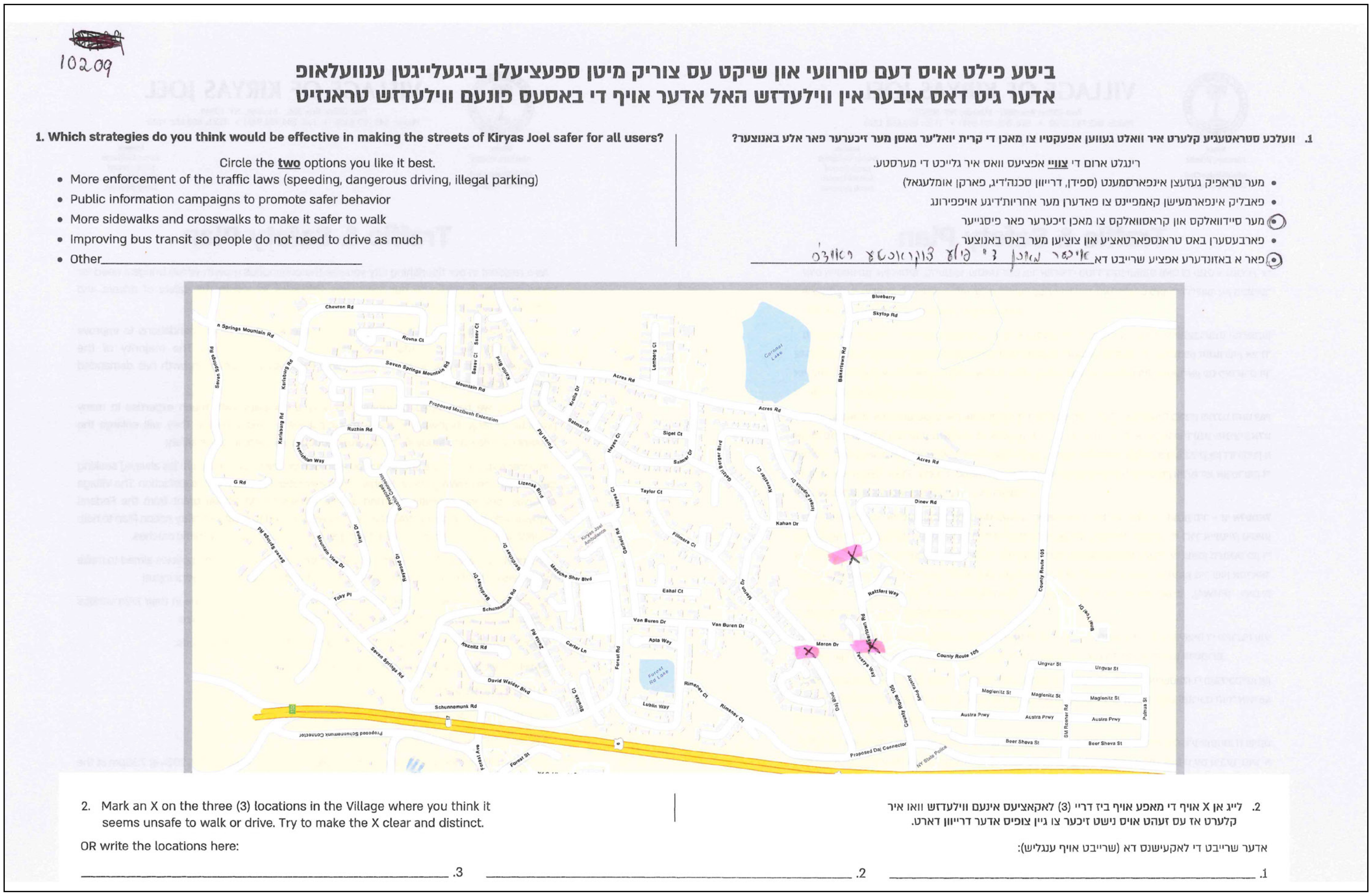

Figure 25. An example of a completed survey that was distributed to Kiryas Joel residents.

STRATEGIES SELECTED

Out of the four strategies presented in the second part of Public Survey #1, the largest number of respondents (231) chose "more sidewalks and crosswalks" as the strategy most likely to prevent fatal and serious injury crashes in their opinion. The second most popular strategy (222) was traffic and parking enforcement. Figure 26 shows all responses. This information will be used to develop strategies for use in the Safety Action Plan.

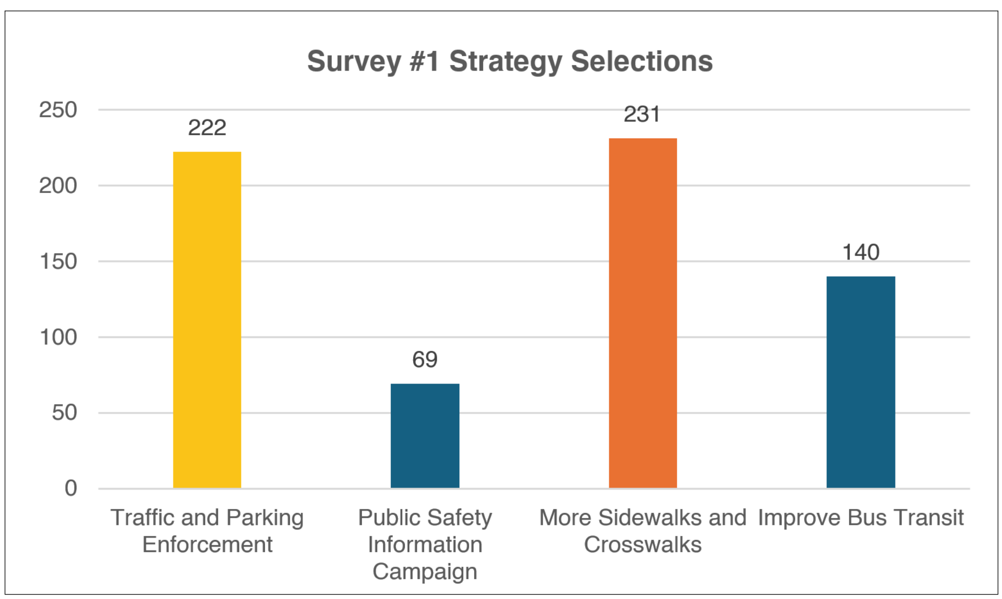

Figure 26. Bar graph of strategies selected by survey respondents

LOCATIONS OF CONCERN

The results of the second portion of the survey showed that many of the areas of concern correlate with the identified priority segments in the Village. The heatmap in Figure 27 below shows that the locations of concern within the Village are concentrated in highly dense commercial areas, such as in the central portion of the Village near the Forest Rd shopping center, areas of new development towards the east, as well as in areas where multiple flows of traffic merge such as the intersection of Israel Zupnick Drive and Acres Road and the intersection of Meron Drive, Prag Boulevard, Daj Boulevard, and Druhbich Way.

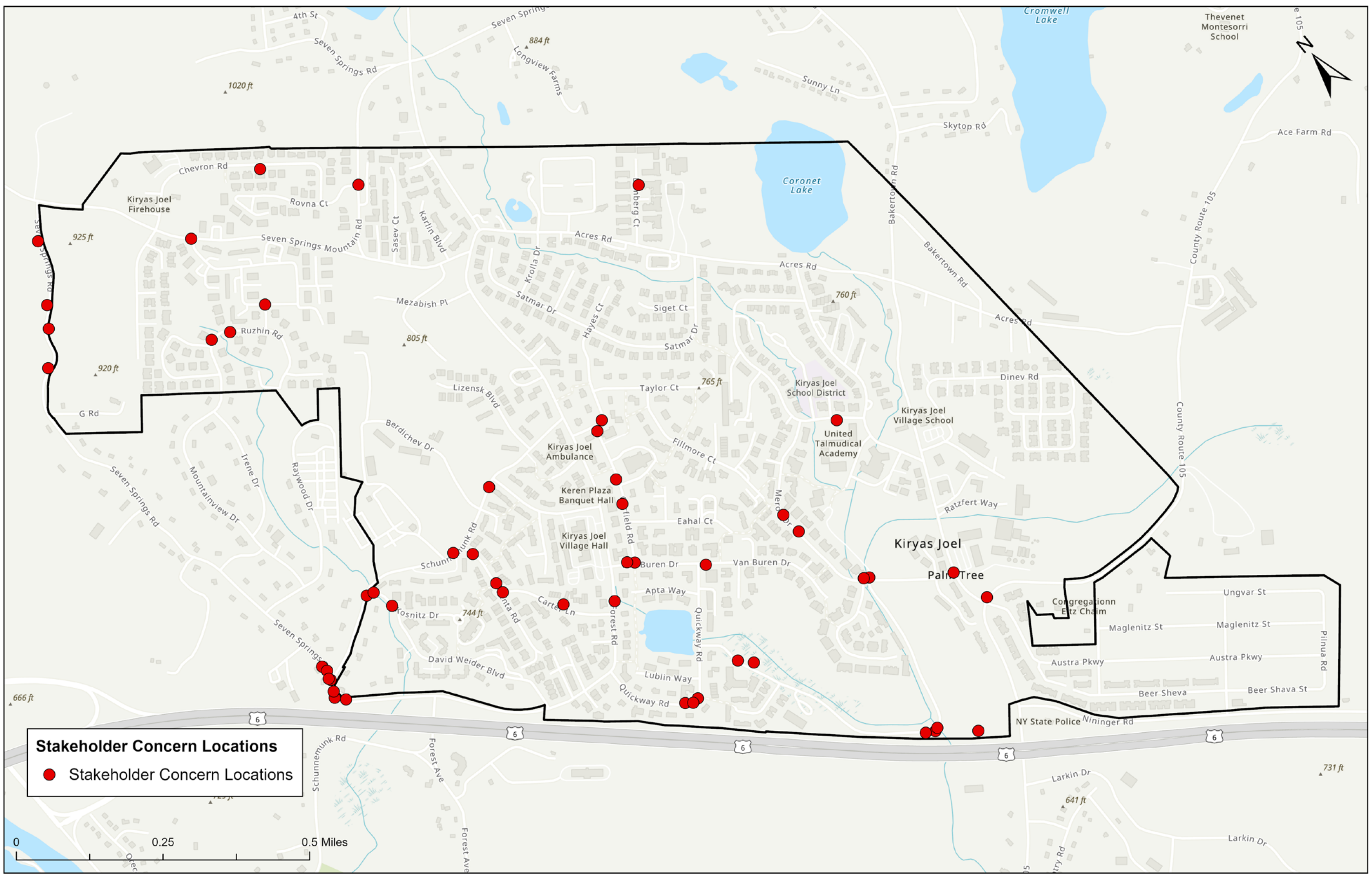

Figure 27. Heat map of locations of concern from Public Survey #1

LOCATIONS OF CONCERN WITH ALL CRASHES

Figure 28 shows that locations of concern selected by respondents as part of Public Survey #1 roughly correspond with all crashes reported 2018-2022.

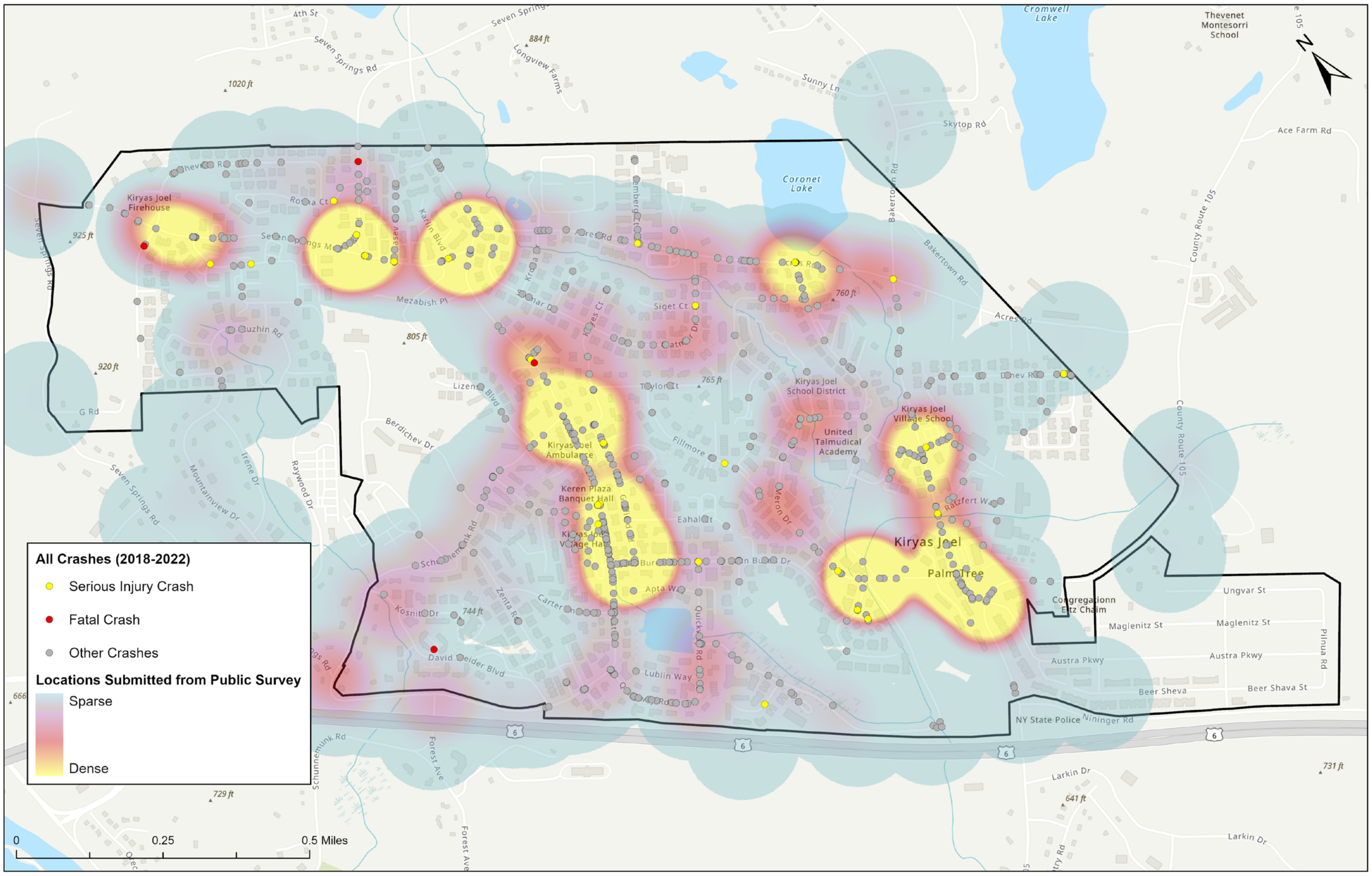

Figure 28. Heatmap of all crashes from Survey #1

LOCATIONS OF CONCERN FOR STAKEHOLDERS

Working with the Village of Kiryas Joel, the same survey was distributed to specific stakeholders who may not live within the village but are still contributors to transportation. Those who operate public, private, and school buses were given the opportunity to contribute to the survey results. Village employees were also included in the field resulting in 17 Stakeholder survey responses.

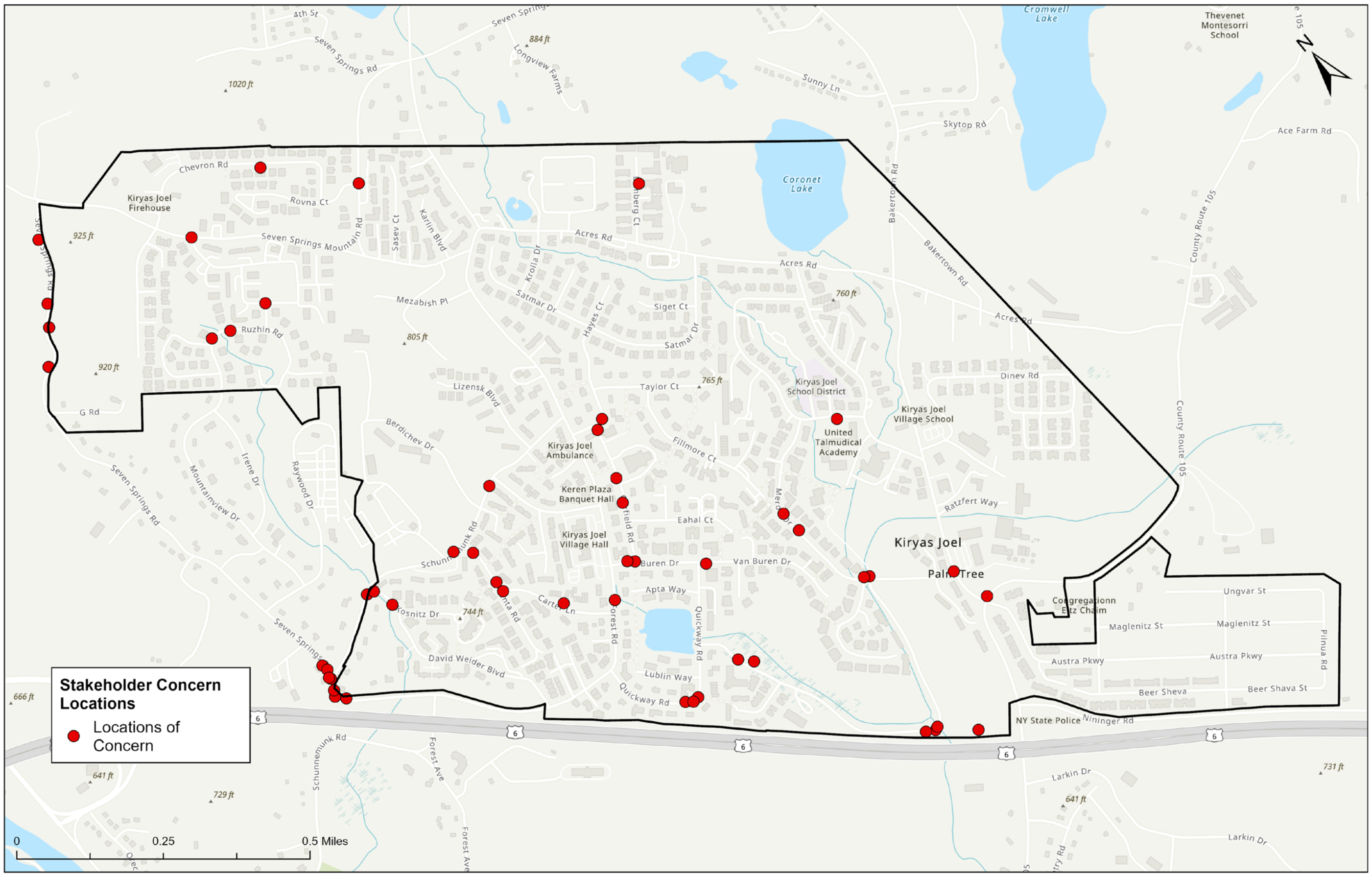

Figure 29. Stakeholder survey locations of concern

The locations in Figure 29 compare closely with the routes of Transit Orange local bus service which many of the stakeholders operate. The intersections of Schunnemunk Road and Seven Springs Rd is a major cause for concern with all three public bus routes travelling through this challenging area. The stakeholder points also display many commonalities with tight turns such as on Daj Blvd and Quickway Rd.

OTHER RECOMMENDATIONS

A final category in Public Survey #1's strategy poll allowed respondents to write in their own recommendation. Many of the write-ins reflected specific information under the umbrella of one of the selectable strategies. Several respondents, for instance, recommended formalizing street parking on one side of busy Village streets to regulate lane widths and make more predictable, enforceable streets.

Public Meeting #2

A second public meeting for the KJ Safety Action Plan in development from Safe Streets for All grant funding was held in the Village of Kiryas Joel on November 21st, 2024, with around 25 attendees from the Village. The second public meeting granted residents the opportunity to receive a thorough update on the plan's progress, providing attendees with information about project details and given strategies for the Safety Action Plan. The meeting was led as an open house with printed posters that featured key project components such as the figures of survey results and proposed roadway treatments (see "Public Meeting Boards"). Members of the public were encouraged to learn that many of their concerns were being reflected in the plan and added some more suggestions to further inform the project. The comments below were provided by members of the public and should be considered as the Safety Action Plan progresses.

PUBLIC MEETING #2 COMMENTS: TREATMENT RECOMMENDATIONS

Village residents who attended the second public meeting proposed several treatments for the Safety Action Plan to consider. Some treatment recommendations are specific to location, while others are more generalized. Attendees overall noted the need for upgrades to traffic signalization and roadway configuration, improved traffic, increased visibility and safety, and enhanced pedestrian facilities. Other suggestions included the formalization of parallel parking on one side of narrow streets, or for angled, back-in parking to be considered.

Attendees also noted suggested improvements to signage and visibility for the Safety Action Plan to consider implementing. One comment noted the need for safety signage to be printed in both English and local Yiddish to enhance accessibility for residents. Accessibility for the vision-impaired was also highlighted in suggestions, as one suggestion specifically noted for the volume to be increased on accessible/talking pedestrian signals. Another comment suggested the sale of reflective clothing worn by some attendees to promote widespread use. Speed limit signs were also suggested to be added throughout the Village, alongside improved street lighting. Another comment called for increased turning arrow signals, upgraded No turn on Red signage, and for exclusive pedestrian phases to be implemented with leading pedestrian intervals on traffic lights. Suggestions further revealed a need for increased pedestrian facilities throughout the Village. For instance, comments called for more crosswalks to be implemented, and for existing pedestrian crossings to be enhanced. Residents generally expressed support for expanding law enforcement to further discourage unsafe parking and speeding.

Many comments specifically expressed a need for school bus safety and traffic safety for children. One attendee noted that cars are passing buses while stopped on multi-lane roads, which is a new problem caused by the widening of roads in the Village.

PUBLIC MEETING #2 POSTERS

To facilitate discussion, Public Meeting #2 was organized around several large posters. One poster noted the background of the Safety Action Plan, while another highlighted responses from the public survey earlier. Other posters depicted various treatment options that the Safety Action Plan will address in notable areas. Treatment options will include upgraded pedestrian facilities, policy strategies aimed towards safe street design, and enhanced speed management. Figure 30 shows an example, recommended pedestrian facilities. All other posters will be presented in the appendix.

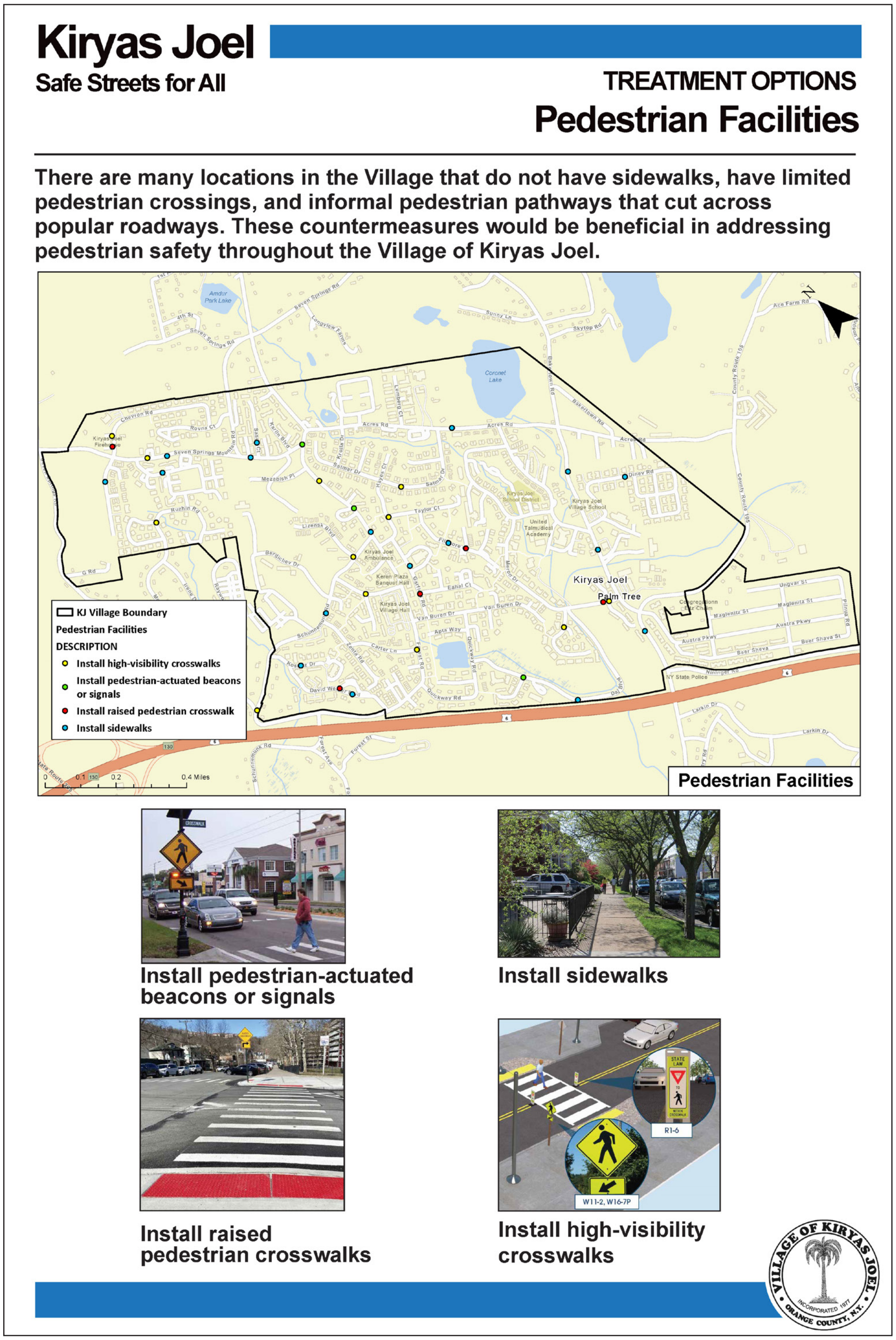

Figure 30. Pedestrian facilities poster from Public Meeting #2

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V. PLAN & POLICY REVIEW

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Plan Review

Several towns and villages with similar population densities and sizes have drafted traffic safety plans for the protection of their residents oriented toward pedestrian facilities. These include Teaneck, NJ[8]; Buffalo Grove, IL[9]; and Newtown, MA[10]. Some common themes from these plans include:

- Prioritization of crosswalk and sidewalk reconstruction at major intersections. (Teaneck, Newtown, Buffalo Grove)
- Planning, discussion and creation of overpasses and underpasses for a safer pedestrian experience. (Teaneck, Buffalo Grove)
- Placement of planters and other decorative bollards in places with high pedestrian risk to mitigate damage. (Buffalo Grove)
- Generating public support for increased safety initiatives. (Buffalo Grove)
- Implementation of crossing countdown signals and crossing warning lights at intersections regardless of their vehicle signalized status. (Teaneck)
- Establishment of trail systems away from vehicle areas for recreational and travel with bikes and pedestrians. (Newtown, Buffalo Grove)
- Evaluation of pedestrian crash locations and hotspots for further mitigation. (Teaneck, Newtown)
- Encourage speed reductions along corridors with high levels of crashes. (Newtown)

Many of these strategies in demographically similar places have worked to accomplish the goal of increasing pedestrian safety. In the road towards vision zero of no fatalities or serious injuries on the road, the Village should look towards these initiatives as models for success. Vehicle danger reduction using bollards, crosswalk rebuilding, sidewalk expansion, and crosswalk lights could be vital for the safety of residents. These easily adoptable initiatives would provide safety and improve well-being based on data collected in this report.

Review of Previous Comprehensive Plan

A major planning document recognized by the Village of Kiryas Joel is their Comprehensive Plan from 2018. This document was created to consider comprehensive planning goals as endorsed by the Town of Monroe's 2017 comprehensive plan, as well as county-wide planning goals.

TRANSPORTATION GOALS

- "Provide a **fully walkable, pedestrian-oriented community** with **transportation access** to regional centers." (Kiryas Joel Goal, 2018)
- "**Emphasize diversity** in housing, land uses, **transportation options**, and employment/ business opportunities." (Orange County Goal, 2010)
- "**Better manage development, accounting for available transportation** and water supplies." (Orange County Goal, 2010)

8 Teaneck Complete Streets Policy, https://njbikeped.org/wp-content/uploads/Teaneck-CS-Policy-2024.pdf
9 Chicago Metropolitan Area Agency for Planning, https://engage.cmap.illinois.gov/hub-page/safetravelforall
10 Newton's Bicycle and Pedestrian Network Plan, https://storymaps.arcgis.com/stories/32f0c5bb96b74b14b0361ffd9c8a672b

TRANSPORTATION RECOMMENDATIONS

- "Include a **narrower width at intersections** to create shorter and safer pedestrian crossings." (Goals related to Transportation & Infrastructure, 2018)
- "Provide for **safe bus circulation and bus stop areas** of sufficient size." (Goals related to Transportation & Infrastructure, 2018)
- "Complete a **Village-wide traffic impact study** including determining a Kiryas Joel-specific trip generation rate." (Goals related to Transportation & Infrastructure, 2018)
- "Complete a **pedestrian/sidewalk study** to identify problem areas and possible solutions." (Goals related to Transportation & Infrastructure, 2018)

2020 Kiryas Joel Comprehensive Transportation Study

In 2020, Creighton Manning Engineering (CM) was retained by Kiryas Joel to create a comprehensive traffic study and provide recommendations to improve mobility and traffic flow. As part of this effort, CM collected volumes, calculated intersection crash rates, and selected intersections with rates higher than the New York State average for additional review. Table 3 shows these intersections, their crashes between 3/1/2016 and 2/28/2019, and their crash rates compared with NYSDOT average for their volume.

Many of these intersections were re-identified through updated crash analysis and will be evaluated as part of the priority locations list at the end of this document.

Table 3. 2020 locations for further study

LOCATION	NUMBER OF CRASHES	CRASH RATE	NYSDOT AVERAGE
Forest Rd & Schunnemunk Rd	9	0.58	0.18
Seven Springs Mountain Rd & Chevron Rd	6	0.49	0.29
Acres Rd & Bakertown Rd	5	0.45	0.29
Mountain Rd & Forest Rd	8	0.42	0.18
Schunnemunk Rd & Seven Springs Rd	3	0.38	0.18
Bakertown Rd & Larkin Dr	12	0.37	0.32
Meron Dr & Kahan Dr	2	0.27	0.18
Acres Rd & Israel Zupnick Dr	4	0.24	0.18
Mountain Rd & Seven Springs Mountain Rd	3	0.19	0.18

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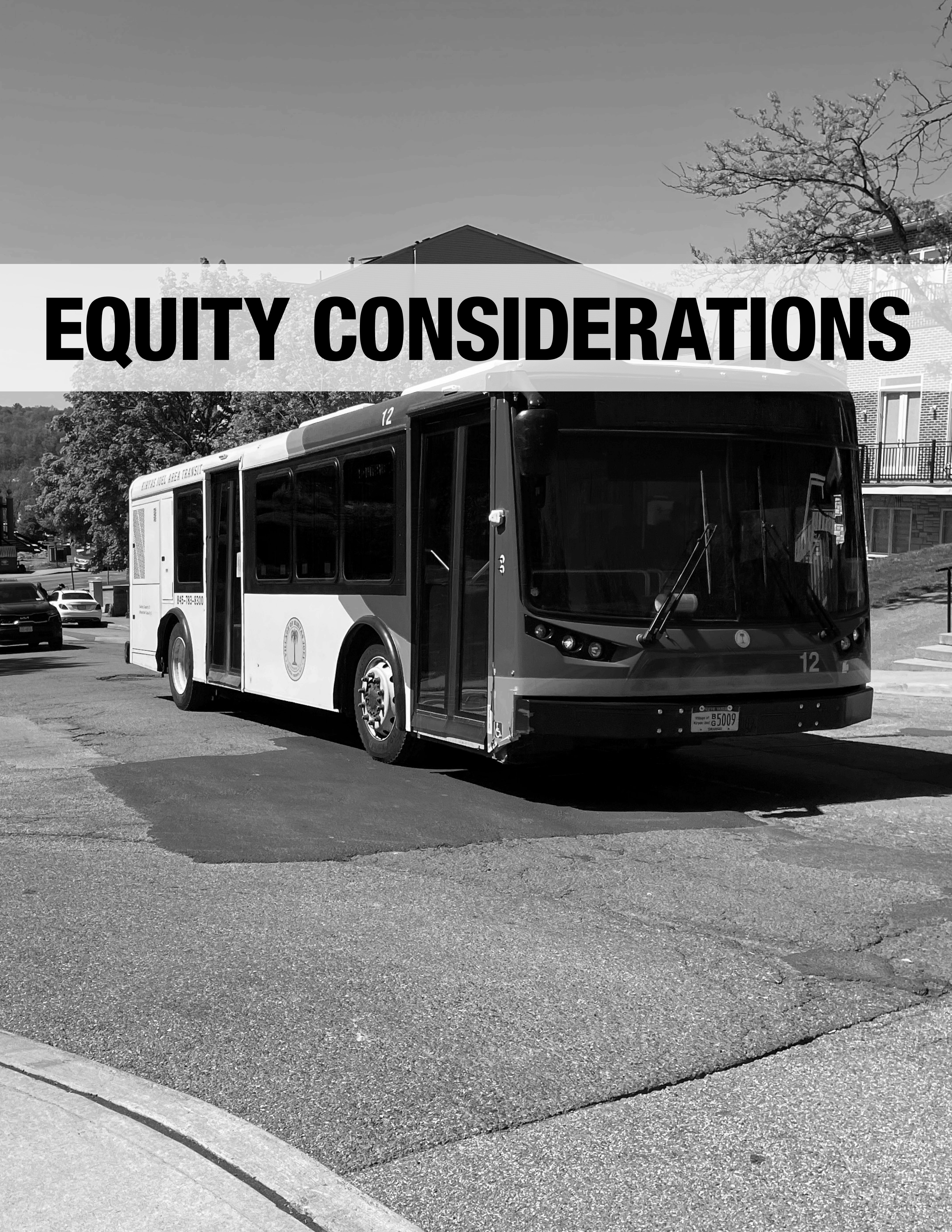
EQUITY CONSIDERATIONS



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EQUITY CONSIDERATIONS

Proper representation of disadvantaged and under-served demographics is important to the progression of this project. Kiryas Joel falls within many initiatives which aim to help generate an equitable living environment for all residents.

Justice40

The Justice40 Initiative, established to address disadvantage in underprivileged communities, provides opportunities to fix issues with transportation, infrastructure, and environmental hazards. Section 223 of Federal Executive Order 14008 established the Initiative, which directs 40% of the overall benefits of certain federal funds to flow to disadvantaged communities (DACs[11] . This works to improve access to affordable transportation and quality of life resources through active public engagement on potential projects. The Department of Transportation uses key performance indicators based on active funding to determine what percentage of benefits should be flowing to disadvantaged communities. All census tracts within the Village of Kiryas Joel are considered disadvantaged communities by the Justice40 initiative (see Figure 31).

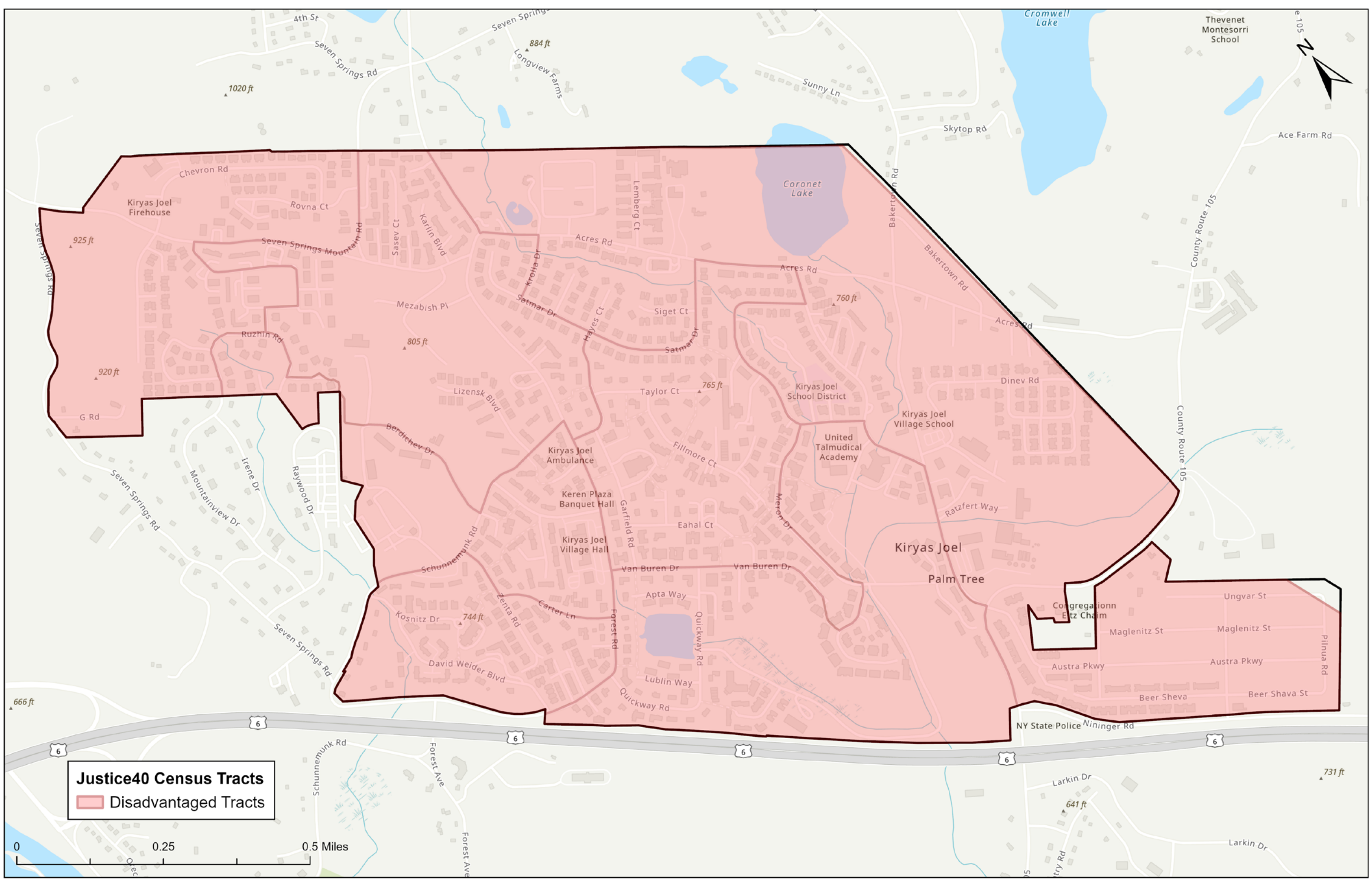

Figure 31. Extent of Justice40 designation around Kiryas Joel

11 Justice40 Initiative, https://www.whitehouse.gov/environmentaljustice/justice40/

Equitable Transportation Community Explorer

The US Department of Transportation's tool to explore disadvantage provides strong indicators for transportation disadvantage in the village. Using data from multiple census tracts, the explorer evaluates disadvantages grouped by categories estimating climate disaster, environmental burden, health vulnerability, social vulnerability, and transportation vulnerability. As shown in Figure 32, KJ has social vulnerability as its highest disadvantage in the 99.6th percentile, with poverty, lack of internet access, young population, and limited English as the biggest contributors. Among the remaining categories, Transportation is also considered disadvantaged in the village in the 68th percentile. Of the total project area, KJ has 17% of census tracts considered disadvantaged.

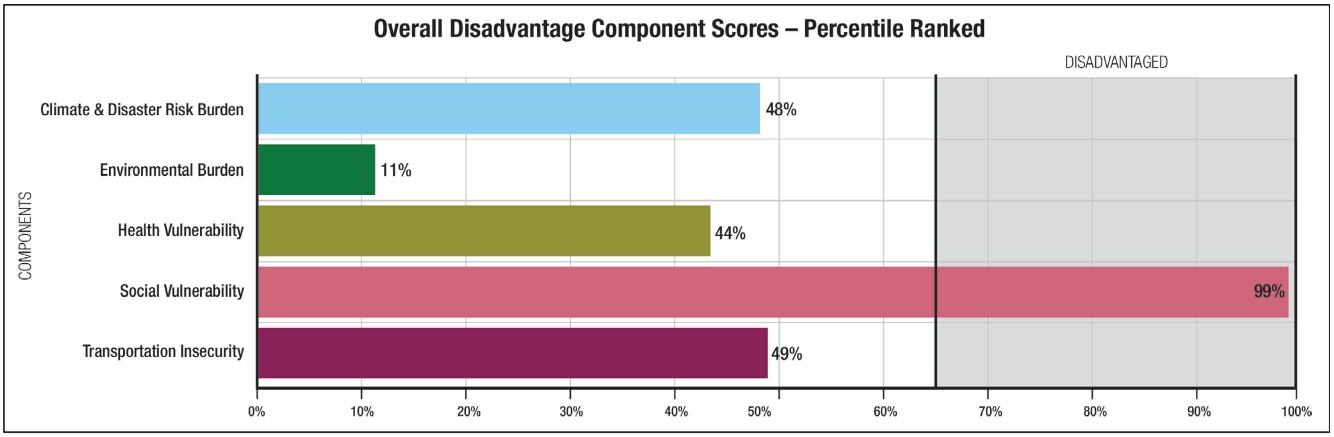

Figure 32. Disadvantage scores for KJ

Vehicle Access

Among the 6 census tracts within the Village, each has similar vehicle access. The eastern central tract has the highest percentage without a vehicle at 52%, while the eastern area only has 35% without a vehicle. The remaining tracts as show in Vehicle are near the village average of 40% without access to a vehicle. The west leads for traffic fatalities, with an average of 7.1 per 100,000 people annually, and the highest annual cost of transportation at $10,010. The village population spends an average of 22% of their household income on transportation, higher than the 16% spent nationally. Those in the south have the longest travel time to vital resources such as education, grocery, medical, and parks, but overall, the drive to food and medicine is fairly short at an average of 2 minutes, with green spaces only 1 minute longer.

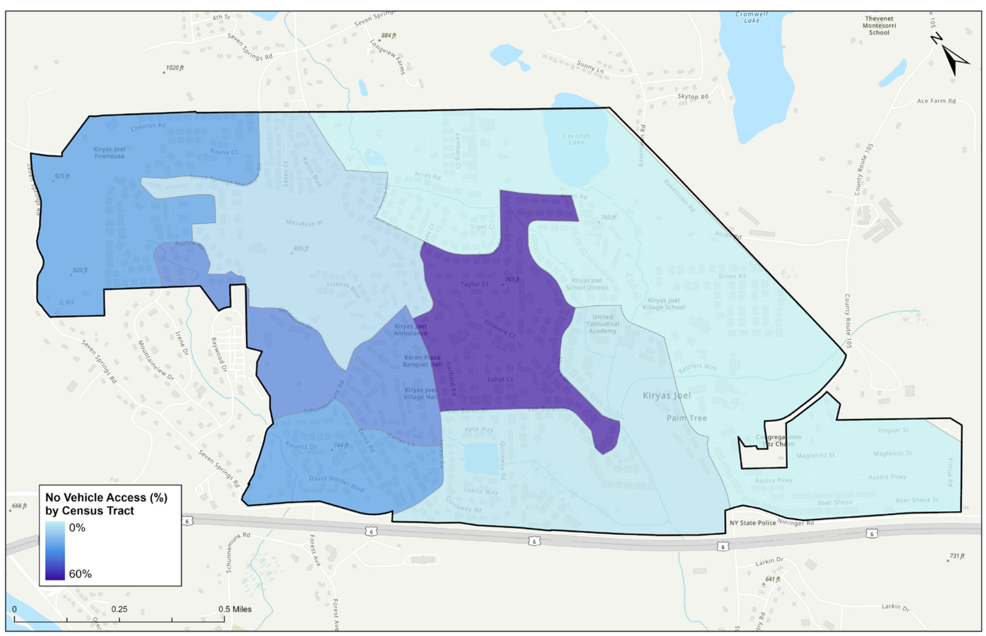

Figure 33. Vehicle access by census tract

Cities with access to fewer vehicles should work to encourage safe pedestrian accessibility in their place. With many restrictions on mobility from a vehicle dominant society, pedestrians are faced with many challenges regarding safety and ease of access. As some areas of Kiryas Joel have less than half of the residents with car ownership, the village should focus its mobility initiatives on improving pedestrian quality of life on the same scale as vehicle. Many challenges regarding safety and ease of access. As some areas of Kiryas Joel have less than half of the residents with car ownership, the village should focus its mobility initiatives on improving pedestrian quality of life on the same scale as vehicle.

Conclusion

Kiryas Joel is a relatively small, dense, economically consistent Village without sharp differences in median household income, exposure to environmental hazards, or other variables that often generate inequality in communities. Since the entire study area is designated as disadvantaged through the Justice40 initiative, safety improvement efforts should be focused according to existing traffic crash problems. When selecting locations for pedestrian improvements, it may be prudent to focus on areas with lower vehicle availability.

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PRIORITY METHODOLOGY

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PRIORITY METHODOLOGY

To prioritize locations within the Village of Kiryas Joel for project development as part of the Safety Action Plan, several factors will be assigned a weighting to generate a total score. The factors and weighing methodology are described below

FACTORS

Total Fatal Crashes (K) – The number of fatal crashes at each intersection and segment from 2018-2022.

Total Serious Injury Crashes (A) – The number of serious injuries, also known as "A" level injuries, at each intersection and segment from 2018-2022.

Total Other Crashes (O) – The number of possible injury or property damage crashes, also known as "B", "C", or "D" crashes, at each intersection and segment from 2018-2022.

Total Public Comments (P) – The number of times that intersection or segment was recorded as a location of concern on Public Survey #1. These were spatially joined in ArcGIS Pro and counted.

Total Stakeholder / Village Staff Comments (S) – The number of times that intersection or segment was recorded as a location of concern on Stakeholder/Village Staff Survey #1. This is a separate round of the same survey meant to get the benefit of expertise from Village staff and members of the Stakeholder Advisory Group. These will be weighed slightly heavier than public comments.

WEIGHTING

To assign proper importance to each factor, **modifiers** were developed, and a **formula** was established.

Priority Intersection Formula

$$\mathbf{K}(100) + \mathbf{A}(50) + \mathbf{O}(5) + (\mathbf{P} + \mathbf{S}(1.5))$$

Priority Segment Formula

$$\mathbf{K}(100) + \mathbf{A}(50) + \mathbf{O} + (\mathbf{P} + \mathbf{S}(1.5))$$

PLANNED PROJECT

This criterion will be subjective but will help remove locations from the priority list where projects are already being designed or constructed based on prior planning. The scope of those projects includes road widening, traffic signal installations or upgrades, or other changes primarily intended to address community concerns around traffic congestion or traffic safety. While the work of the SAP may include providing comments on how to modify those planned projects to provide even greater safety benefits, by acknowledging that work is already planned (designed) for a location means that this SAP can focus on other locations. This report includes projects planned by Creighton Manning Engineering, as well as corridor road widening projects managed by Stantec Engineering.

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PRIORITY LOCATIONS

PRIORITY LOCATION LIST

Using the above scoring methodology, Table 4 shows the list of preliminary priority intersections. Locations with an asterisk (*) next to their score are sites of a proposed or planned project and may be demoted in priority if the proposed projects will already address existing safety issues. Additionally, the Village expects to formalize feedback from their staff about locations with safety problems observed in their daily experience on Village streets. Stakeholder Survey #1 results have not yet been accounted for and may affect priority ranking.

Table 4. Preliminary priority intersections

SCORE	STREET 1	STREET 2
228.5*	Mountain Rd	Seven Springs Mountain Rd
150.5*	Acres Rd	Israel Zupnick Dr
119.5*	Forest Rd	Mordche Sher Blvd
119.5*	Forest Rd	Mountain Rd
112.5*	Meron Rd	Prag Blvd / Daj Blvd
102.5*	Bakertown Rd	Dinev Rd
96.5*	Forest Rd	Schunnemunk Rd
91.5*	Mountain Rd	Karlsburg Rd
80.5	Bakertown Rd	Acres Rd
77.5*	Acres Rd	Lemberg Ct
66.5	Van Buren Dr	Quickway Rd
63.5*	Mountain Rd	Sasev Ct
53.5*	Forest Rd	Van Buren Dr
51.5	Yoel Klein Ct	Prag Blvd
50.5	Seven Springs Mountain Rd	Mickelsburg Rd
46.5*	Forest Rd	Hayes Ct
37.5*	Bakertown Rd	Hamaspik Way
31.5*	Forest Rd	Gorlitz Ct
25.5*	Forest Rd	Acres Rd
19.5*	Acres Rd	Satmar Dr
19.5	Meron Rd	Kahan Dr
14.5*	Forest Rd	Carter Ln
13.5*	Seven Springs Mountain Rd	Rovna Ct
13.5*	Seven Springs Mountain Rd	Taitch Ct
12.5	Acres Rd	Krolla Dr
11.5	Nickelsburg Rd	Tzfas Rd
8.5*	Mountain Rd	Karlin Blvd
8.5*	Mountain Rd	Volova Rd
6.5	Fillmore Ct	Kalev Way
6.5	Nickelsburg Rd	Paksh Pl
2.5	Satmar Dr	Siget Ct

Table 5 shows the preliminary priority segments based on the same evaluation methodology. Locations with an asterisk (*) next to their score are sites of a proposed or planned project and may be demoted in priority if the proposed projects will already address existing safety issues.

Table 5. Preliminary priority segments

SCORE	STREET	FROM	TO
177.5*	Forest Rd	Gorlitz Ct	Mordche Sher Blvd
158.5*	Garfield Rd	Hayes Ct	Van Buren Dr
136.5	Dinev Rd	Bakertown Rd	End
123.5	Meron Dr	Bakertown Rd	End
109.5	Karlsburg Rd	Mountain Rd	End
106.5	D A Weier Blvd	Forest Rd	Kosnitz Rd
105.5*	Seven Springs Mountain Rd	Mountain Rd	NY-44
104.5	Nickelsburg Rd	Seven Springs Mountain Rd	End
102.5*	Bakertown Rd	Dinev Rd	NY-105
77.5	Satmar Dr	Acres Rd	Hayes Ct
73.5	Van Buren Dr	Forest Rd	End
62.5	Lemberg Ct	Acres Rd	End
58.5	Fillmore Ct	Taylor Ct	End
54.5*	Rovna Ct	NY-44	End
53.5	Stropkov Ct	Rimnev Ct	End
52.5	Yoel Klein Blvd	Prag Blvd	End
51.5*	Bakertown Rd	Acres Rd	Dinev Rd
40.5*	Bakertown Rd	Austra Pkwy	NY-17
35.5	Acres Rd	Forest Rd	Bakertown Rd
29.5*	Forest Rd	Mordche Sher Blvd	Carter Ln
19.5	Mordche Sher Blvd	Schunnemunk Rd	Forest Rd
14.5*	Seven Springs Mountain Rd	Nickelsburg Rd	Seven Springs Rd
10.5*	Mountain Rd	Seven Springs Mountain Rd	Forest Rd
9.5*	Forest Rd	Acres Rd	Gorlitz Ct
9.5	Sasey Ct	Mountain Rd	End
9.5	Prag Blvd	Meron Rd	End
8.5	Lizensk Blvd	Schunnemunk Rd	End
3.5	Siget Ct	Satmar Dr	End
2.5	Karlin Blvd	Mountain Rd	End

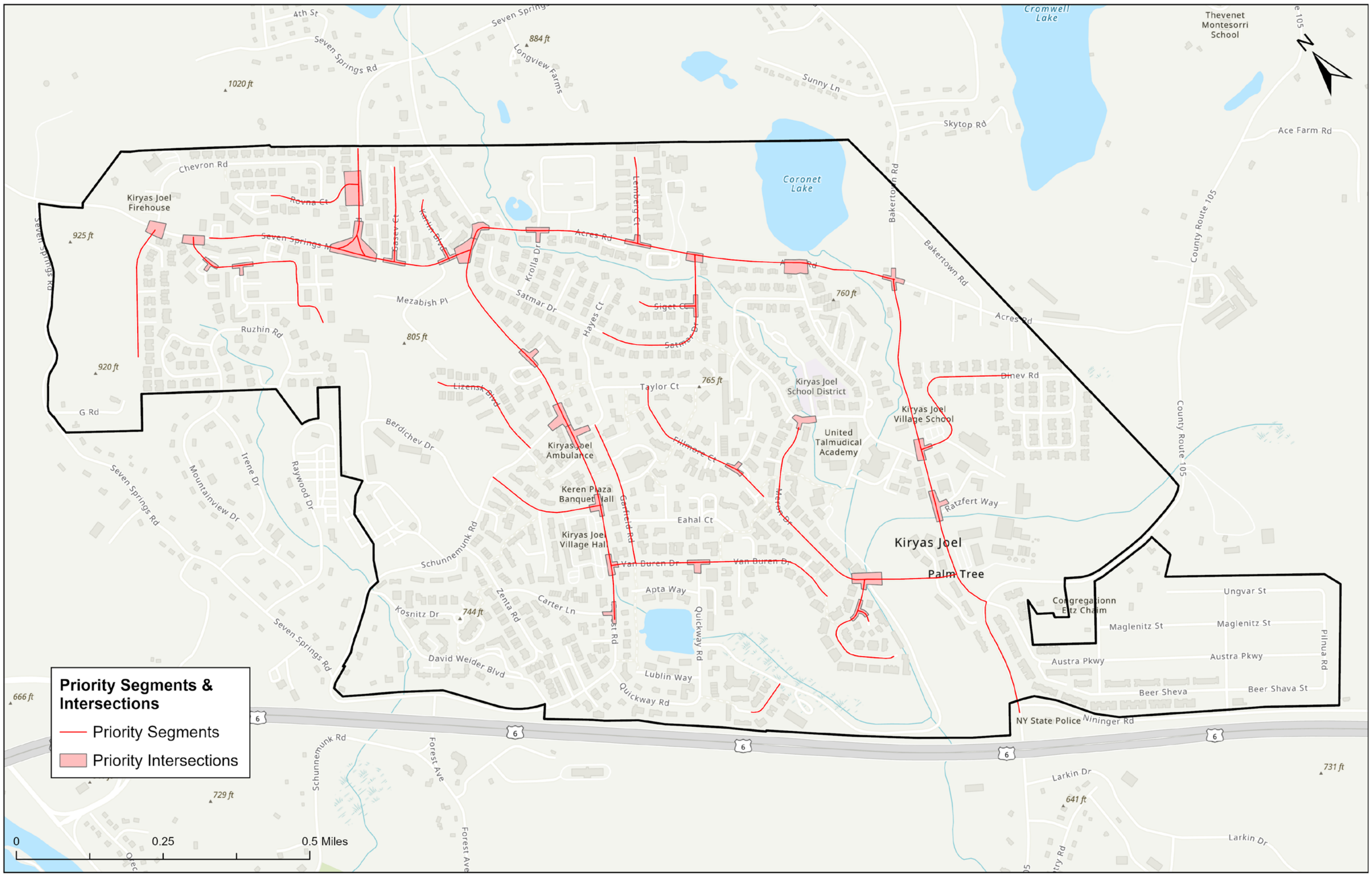

Figure 34. Map of priority segments and intersections

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PROJECTS & STRATEGIES

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PROJECTS & STRATEGIES

This Safety Action Plan identifies a set of priority intersections and roadway segments where collision trends and public sentiment indicate safety-related issues to be addressed. Based on these trends, the Plan provides a set of proven countermeasures, both design and policy-oriented, that would help address safety concerns at one or more priority intersections or roadway segments.

Selection of Countermeasures

The selection of countermeasures considers several factors including the following:

- The type, severity, and specific location of collisions based on a detailed review of MV-104A reports collected from NYSDOT's CLEAR Crash Report Viewer.
- Improvements currently proposed throughout the study area based on coordination with the Village and availability of conceptual and preliminary design plans.
- The existing infrastructure and environmental constraints at each intersection and roadway segment.
- Input from the public collected via survey, in-person engagement, and conversations with the stakeholder advisory group.

Proactive, Systemic, and Proven Safety Countermeasures

FHWA's Proven Safety Countermeasures initiative (PSCi) is a collection of 28 countermeasures and strategies effective in reducing roadway fatalities and serious injuries on our nation's highways. Transportation agencies are strongly encouraged to consider widespread implementation of PSCs to accelerate the achievement of local, State, and National safety goals. These strategies are designed for all road users and all kinds of roads—from rural to urban, from high-volume freeways to less traveled two-lane State and county roads, from signalized crossings to horizontal curves, and everything in between. Each countermeasure addresses at least one safety focus area – speed management, intersections, roadway departures, or pedestrians/bicyclists – while others are crosscutting strategies that address multiple safety focus areas. This plan incorporates many PSCs that are applicable to the type of crashes and local environment of the Village of Kiryas Joel. As appropriate, additional countermeasures were selected from FHWA's Crash Modification Factor (CMF) Clearinghouse website and other sources, as specified.

Crash Mitigation Strategies

Crash mitigation strategies may be reactive or proactive. Reactive strategies are typically based on location-specific crash data and target corridors (or sections of corridors) and specific intersections. Proactive strategies, while still based on data, typically rely on systemic crash data and trends to develop area-wide strategies such as signal equipment updates, pedestrian infrastructure enhancements, and curbside management.

There are several crash mitigation strategies that could be applied to one or more priority locations within Kiryas Joel. These crash mitigation strategies, their applicability, and anticipated crash reduction are outlined in this section. Crash mitigation strategies are categorized by intersection improvements, corridor improvements and policy/education improvements.

The crash mitigation strategies outlined below can be systematically applied to multiple locations throughout the study area and will improve safety and comfort for roadway users. Additionally, there are many intersections and roadway segments in which multiple improvements would be beneficial. The countermeasures outlined in this document are intended to provide a suite of recommendations that can be advanced by the Village based on additional considerations such as right-of-way availability, future development projects, funding availability, and other countermeasure-specific considerations as outlined in this report.

INTERSECTION IMPROVEMENTS

There are a number of potential intersection improvements that can be implemented to address the collision types and trends at the identified priority intersections. This section outlines the countermeasures recommended in the study area and the specific intersections in which these countermeasures would be beneficial. Included for each countermeasure is the identified CMF (or CMFs), high-level cost of the improvement/timeline, and overall application guidance.

Change in Intersection Control

Within the Village, the majority of intersections are stop-controlled and there are some intersections within the priority intersection network that are unsignalized. A small number of intersections are currently signalized. Many intersections could benefit from a change in intersection control from a safety standpoint. There are several potential intersection control countermeasures that could be applied throughout the Village including the following:

A.1. Install a Stop Sign with Stop Bar

Intersections with two-way stop control are a common, lower cost control, which require traffic on the minor roadway to stop and yield to mainline traffic before entering the major roadway. There are a number of intersections in the Village without any form of control. Installing stop signs at intersections with no controls could improve safety at those locations.

A.2. Convert a Two-Way Stop-Controlled Intersection to All-Way Stop-Controlled

Converting an intersection from two-way stop-controlled to all-way stop-controlled is a low-cost solution that can be implemented at lower-volume intersections to improve safety at intersections with a higher prevalence of angle crashes, high pedestrian activity, and intersections where the minor roadway has limited sight distance. However, a MUTCD all-way stop warrant should be performed when considering conversion to an all-way stop-control.

Figure 35. An example of an all-way stop -controlled intersection.

A.3. Install a Traffic Signal

Traffic signals serve to facilitate coordinated movement of traffic, including vehicles and pedestrians, through the intersection by dividing the overall cycle time into permitted movement phases for each leg, corridor, or mode. Signals can improve operations and safety by reducing delay (which can mitigate risk-taking behaviors) for all users and addressing specific collision types. However, a MUTCD signal warrant analysis should be performed when considering the installation of a traffic signal.

Figure 36. An example of a traffic signal with additional regulatory signage.

A.4. Install a Roundabout

Roundabouts have proven to be effective in reducing the frequency of fatal and injury related crashes by slowing vehicle speeds at intersections. Study findings have shown statistically significant reductions for both the total number of crashes and the number of injury crashes when roundabouts were implemented. Furthermore, results showed that injury producing crash types, such as the angle crash, were significantly reduced.

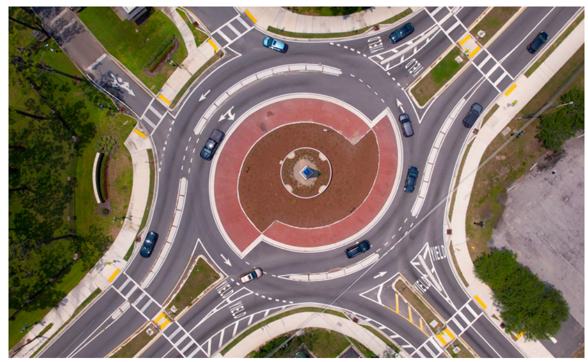

Figure 37. An example of a small roundabout that could potentially fit within the context of KJ.

Table 6 summarizes the applicable CMF or CMFs for the countermeasure including the type of crashes, and crash severity that the CMF would apply. This table also includes the high-level cost and implementation timeline for each countermeasure.

Table 6. Benefits and costs of intersection control countermeasures

COUNTERMEASURE	CMF		HIGH-LEVEL COST	TIMELINE
A.1. Install a Stop Sign and Stop Bar	**CMF**	**0.49**	LOW	SHORT-TERM
	Crash Type	All		
	Crash Severity	K, A, B, C		
	CMF ID	2716		
A.2. Convert a Two-Way Stop-Controlled Intersection to All-Way Stop-Controlled	**CMF**	**0.30**	LOW	SHORT-TERM
	Crash Type	All		
	Crash Severity	A, B, C		
	CMF ID	314		
	CMF	**0.25**		
	Crash Type	Angle		
	Crash Severity	All		
	CMF ID	310		
	CMF	**0.57**		
	Crash Type	Vehicle/Pedestrian		
	Crash Severity	All		
	CMF ID	313		
A.3. Install a Traffic Signal	**CMF**	**0.33**	HIGH	LONG-TERM
	Crash Type	Angle		
	Crash Severity	K, A, B, C		
	CMF ID	320		
	CMF	**0.77** ***(4-Leg Intersection)***		
	Crash Type	All		
	Crash Severity	K, A, B, C		
	CMF ID	319		
	CMF	**0.86** ***(3-Leg Intersection)***		
	Crash Type	All		
	Crash Severity	K, A, B, C		
	CMF ID	316		
A.4. Install a Roundabout	**CMF**	**0.51**	HIGH	LONG-TERM
	Crash Type	All		
	Crash Severity	K, A, B, C		
	CMF ID	10086		

At a high level, Table 7 outlines where and under what conditions the identified changes in traffic control countermeasures should be prioritized as well as the considerations for implementation.

Table 7. High-level considerations for intersection control countermeasures

COUNTERMEASURE	WHERE SHOULD IT BE CONSIDERED / PRIORITIZED?	CONSIDERATIONS FOR IMPLEMENTATION
A.1. Install a Stop Sign and Stop Bar	• Intersections that are currently uncontrolled	• If desired by the Village or other key stakeholders, an intersection may remain uncontrolled if adequate sight distance is available and both intersecting roadways have very low traffic volumes (less than 400 vehicles per day)
A.2. Convert a Two-Way Stop-Controlled Intersection to All-Way Stop-Controlled	• Intersection of two, two-lane roadways • Intersections where the minor street and major street have relatively similar volumes and AADT for both roadways is less than 7,500 vehicles • Intersections where there are difficult to address sight distance issues along the minor approach • Intersections near a bus stop, school, park, or other key pedestrian generator	• May not be appropriate in close proximity to a traffic signal depending on roadway volumes • Can cause excessive or unnecessary delay when not warranted and operations should be evaluated
A.3. Install a Traffic Signal	• Intersections with a high proportion of angle crashes • Intersections with a mix of heavy traffic and a high amount of pedestrian activity • Intersections near a key pedestrian activity generator	• Can increase rear-end collisions • Can cause excessive or unnecessary delay when not warranted
A.4. Install a Roundabout	• Intersections with a high proportion of angle, left-turn or head-on collisions • Intersections with high crash rates and/or a high proportion of severe crashes • Intersections that currently have a large footprint	• Roundabouts typically require a larger footprint that may not always be feasible

Within the high priority network and based on the countermeasure selection criteria outlined previously, Table 8 summarizes the recommended traffic control changes at the priority intersections.

Table 8. Recommended intersection control countermeasures at the priority intersections

INTERSECTION	PRIORITIZATION SCORE	EXISTING INTERSECTION CONTROL	COUNTERMEASURE			
			A.1	A.2	A.3	A.4
Mountain Rd & Seven Springs Mountain Rd	227*	SSSC (3-leg)			●	●
Acres Rd & Israel Zupnick Dr	149*	SSSC (3-leg)		●	●	
Meron Rd & Prag Blvd/Daj Blvd	114*	AWSC (5-leg)			●	●
Bakertown Rd & Dinev Rd	101*	AWSC (4-leg)			●	
Forest Rd & Schunnemunk Rd	95*	SSSC (3-leg)			●	
Mountain Rd & Karlsburg Rd	90*	SSSC (4-leg)		●	●	●
Bakertown Rd & Acres Rd	79	AWSC (4-leg)		●	●	
Acres Rd & Lemburg Ct	76*	AWSC (3-leg)			●	
Seven Springs Mountain Rd & Nickelsburg Rd	50.5	SSSC (3-leg)			●	
Yoel Klein Ct & Prag Blvd	50	Uncontrolled (3-leg)	●			
Bakertown Rd & Hamaspik Way	36*	AWSC (4-leg)			●	
Forest Rd & Gorlitz Ct	30*	Uncontrolled (3-leg)	●			
Acres Rd & Satmar Dr	18*	AWSC (3-leg)			●	
Meron Dr & Kahan Dr	18	SSSC (3-leg)		●		
Nickelsburg Rd & Tzfas Rd	11.5	SSSC (3-leg)		●		
Acres Rd & Krolla Dr	11	SSSC (4-leg)		●		
Filmore Ct & Kalev Way	5	Uncontrolled (3-leg)	●			
Nickelsburg Rd & Paksh Pl	5	Uncontrolled (3-leg)	●			
Satmar Dr & Siget Ct	1	SSSC (3-leg)		●		
Schunnemunk Rd & Seven Springs Rd	-	SSSC (3-leg)		●		
Koznitz Rd & Schunnemunk Rd	-	SSSC (3-leg)		●		
Zenta Rd & Carter Ln	-	SSSC (3-leg)		●		
Bakertown Rd & Meron Dr	-	AWSC (4-leg)			●	
Bakertown Rd & NY-105	-	SSSC (3-leg)			●	
Van Buren Dr & Garfield Rd	-	SSSC (3-leg)			●	
SSSC = side-street stop-controlled; AWSC = all-way stop-controlled						

There are some intersections within Table 8 that warrant additional discussion due to the existing conditions of those intersections, as outlined below:

Bakertown Road & Hamaspik Way

Signalization of this intersection may require reconfiguration of the intersection due to Hamaspik Way and Ratzfert Way being located parallel and adjacent to one another, as shown in the figure to the right. If reconfiguration is not possible, the traffic signal may need to operate as split phase for Hamaspik and Ratzfert Way and turn restrictions may be required. Split phased operations can often have negative impacts to level of service and delay. As such, a traffic signal at this location would warrant further study.

Figure 38. The intersection of Bakertown Road and Hamaspik Way.

Schunnemunk Road & Seven Springs Road

An all-way stop is proposed at this intersection due to the skewed angle of the intersection and sight line issues. Due to the horizontal curve of Schunnemunk Road leading up to the intersection, as shown in the figure to the right, advance warning signage should be considered along this approach to warn drivers of the impending stop sign.

Figure 39. The intersection of Schunnemunk Road and Seven Springs Road

Overall, any project that results in a change in traffic control should also incorporate improvements to pedestrian crossings (such as those outlined in the next section) and incorporate curb ramps that meet current ADA standards for accessibility to users of all ages and abilities. While not explicitly outlined in this plan, changes to intersection control could also include changes to lane configuration of approaches based on operational needs. However, it should be noted that additional lanes along an intersection approach often result in longer crossing distances for pedestrians. These trade-offs should be considered during the design phase of any improvements that incorporate changes to intersection control.

Crosswalk Visibility

Improvements to pedestrian crossing facilities at intersections within the Village can be implemented to address locations where pedestrian collisions at crossings are occurring or where insufficient pedestrian facilities are currently provided. Intersections are the primary location where different modes have potential conflicts (mid-block pedestrian crossings are addressed as part of the Corridor Improvements). Improvements to increase the visibility of crossings and users in and entering the crossing are a high priority to address a significant risk factor to vulnerable users. There are several potential countermeasures that could be applied throughout the Village that would address crosswalk visibility at intersections including the following:

B.1. High-Visibility Crosswalks

High-visibility crosswalks aim to increase visibility of pedestrians to drivers at crosswalks by using highly visible marking patterns to improve awareness of crossing locations and increased contrast between people using crossing facilities and the roadway. The current best practice includes the use of longitudinal white stripes constructed from thermoplastic material.

Figure 40. An example of a high-visibilty crosswalk and pedestrian crossing sign.

B.2. Install Raised Pedestrian Crosswalk

These crosswalks act as traffic-calming measures that allow the pedestrian to cross at grade with the sidewalk. Raised crosswalks improve the visibility of pedestrians, especially children, and help to slow traffic at crossing locations.

Figure 41. An example of a raised crosswalk.

B.3. Provide Intersection Illumination

Intersection lighting makes it easier for a driver to visually identify a pedestrian. This is of particular importance in the Village due to the prevalence of dark-colored clothing typically worn by residents. While most intersections include some form of roadway lighting at intersections, pedestrian lighting, which is often lower to the ground, with poles that are 10 to 25 feet tall, is not provided in the Village.

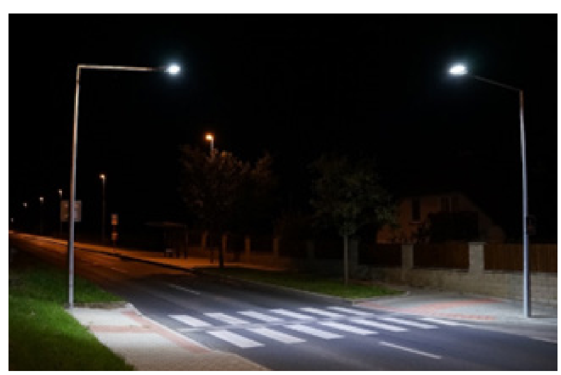

Figure 42. An example of a well-lit pedestrian crossing.

Table 9 summarizes the applicable CMF or CMFs for the countermeasure including the type of crashes, and crash severity that the CMF would apply. This table also includes the high-level cost and implementation timeline for each countermeasure.

Table 9. Benefits and costs of crosswalk visibility countermeasures

COUNTERMEASURE	CMF		HIGH-LEVEL COST	TIMELINE
B.1. Install High Visibility Crosswalk	**CMF**	**0.60**	LOW	SHORT-TERM
	Crash Type	Vehicle/Pedestrian		
	Crash Severity	All		
	CMF ID	5123		
	CMF	**0.81**		
	Crash Type	All		
	Crash Severity	All		
	CMF ID	4124		
B.2. Install Raised Pedestrian Crosswalk	**CMF**	**0.64**	MEDIUM	SHORT-TERM
	Crash Type	All		
	Crash Severity	A, B, C		
	CMF ID	135		
	CMF	**0.55**		
	Crash Type	Vehicle/Pedestrian		
	Crash Severity	ABC		
	CMF ID	136		
B.3. Provide Intersection Illumination	**CMF**	**0.58**	MEDIUM	MEDIUM-TERM
	Crash Type	Nighttime, Vehicle/Pedestrian		
	Crash Severity	A, B, C		
	CMF ID	436		
	CMF	**0.41**		
	Crash Type	Vehicle/Pedestrian		
	Crash Severity	A, B, C		
	CMF ID	441		

At a high level, Table 10 outlines where and under what conditions the identified crosswalk visibility countermeasures should be prioritized as well as the considerations for implementation.

Table 10. High-level considerations for crosswalk visibility countermeasures

COUNTERMEASURE	WHERE SHOULD IT BE CONSIDERED / PRIORITIZED?	CONSIDERATIONS FOR IMPLEMENTATION
B.1. Install High Visibility Crosswalk	• Intersections with existing crosswalks that do not meet current best practices (i.e. paint rather than thermoplastic materials) • Intersections where pedestrian collisions are prevalent • Along higher volume roadways • Near bus stops, schools, parks and other high volume pedestrian generators	• Thermoplastic markings typically require less frequent maintenance, but have more specific requirements for installation
B.2. Install Raised Pedestrian Crosswalk	• At intersections where traffic calming measures are desirable (i.e. local/neighborhood roadways) • Intersections where pedestrian collisions are prevalent and/or vehicular volumes are relatively low • Near schools, parks and other high volume pedestrian generators	• Raised crosswalks are prone to drainage issues • May not be appropriate for designated freight routes, transit routes, or emergency response routes
B.3. Provide Intersection Illumination	• Intersections where pedestrian collisions are prevalent • Intersections where nighttime collisions are prevalent • Along higher volume roadways • Near bus stops, schools, parks and other high volume pedestrian generators	• Luminaries must be carefully placed to avoid silhouette effect of pedestrians

Within the high priority network and based on the countermeasure selection criteria outlined previously, Table 11 summarizes the recommended crosswalk visibility enhancements at the priority intersections.

High-visibility crosswalks are prioritized at intersections where pedestrian collisions have been observed in the past five years. However, high-visibility crosswalks could be considered for implementation at all priority intersections, particularly in tandem with other intersection improvements at a given intersection. Overall, any project that incorporates a high-visibility crosswalk could also incorporate curb ramps that meet current ADA standards for accessibility to users of all ages and abilities.

For intersection lighting improvements, pedestrian-scale lighting (indicated by “P”) is prioritized at intersections where pedestrian collisions have been recorded at night or during dusk/dawn. Upgraded street lighting more generally (indicated by “S”) is prioritized at intersections that observed at least three low light (night, dusk, down) collisions in the past five years. However, any project that includes significant reconstruction of an intersection could consider improvements to lighting conditions. Additionally, the Village could consider an overall lighting study to asses the full inventory and function of lights and propose more where needed.

Overall, crosswalk standards and lighting standards could be formalized within the Village such that future intersection and roadway improvements include crosswalks and lighting that meet modern safety standards. In advance of official changes to design standards, planned improvements could incorporate high-visibility crosswalks and enhanced intersection lighting, as feasible.

Table 11. Recommended crosswalk visibility countermeasures at the priority intersections

INTERSECTION	PRIORITIZATION SCORE	EXISTING INTERSECTION CONTROL	COUNTER-MEASURE		
			B.1	B.2	B.3
Mountain Rd & Seven Springs Mountain Rd	227*	SSSC (3-leg)	●		S, P
Forest Rd & Mordche Sher Blvd	118*	Signalized (3-leg)	●		P
Forest Rd & Mountain Rd	118*	Signalized (3-leg)	●		P
Meron Rd & Prag Blvd/Daj Blvd	114*	AWSC (5-leg)	●	●	S
Bakertown Rd & Dinev Rd	101*	AWSC (4-leg)	●		S
Forest Rd & Schunnemunk Rd	95*	SSSC (3-leg)	●		S, P
Mountain Rd & Karlsburg Rd	90*	SSSC (4-leg)	●		S
Bakertown Rd & Acres Rd	79	AWSC (4-leg)	●		S
Acres Rd & Lemburg Ct	76*	AWSC (3-leg)	●		
Van Buren Dr & Quickway Rd	66.5	AWSC (3-leg)	●		
Mountain Rd & Sasev Ct	62	SSSC (3-leg)	●		
Yoel Klein Ct & Prag Blvd	50	Uncontrolled (3-leg)	●	●	
Forest Rd & Hayes Ct	45*	Signalized (3-leg)	●		S, P
Forest Rd & Acres Rd	24*	Signalized (3-leg)	●		P
Mountain Rd & Karlin Blvd	7	SSSC (3-leg)	●		
Mountain Rd & Volova Rd	7	SSSC (3-leg)	●		
Bakertown Rd & Meron Dr	-	AWSC (4-leg)	●		S
SSSC = side-street stop-controlled; AWSC = all-way stop-controlled					

Low-Cost Countermeasures

Low-cost, easily implementable countermeasures are key to addressing safety concerns in the short-term at stop-controlled intersections which may not warrant changes to traffic control or have other environmental or geographic constraints. There are a series of low-cost countermeasures that could be beneficial at intersections throughout the Village of Kiryas Joel, including the following:

C.1. Implement systemic signing and marking improvements at stop-controlled intersections:

A basic set of low-cost countermeasures at existing stop-controlled intersections may vary depending on the specific roadway conditions. Given the conditions within the Village of Kiryas Joel, it is recommended that systemic improvements at stop-controlled intersections include the following:

- Standard advance intersection ahead warning signs, advance “Stop Ahead” warning signs and stop signs
- Properly spaced stop bar and double-yellow centerline
- Double-arrow warning signs at T-intersections
- Yellow retro-reflective strip at the stop sign post
- Red retro-reflective strip on the stop sign post
- Where rear end crashes are a concern, “Watch for Turning Vehicles” advance warning sign along the approaches not controlled by a stop sign

C.2 Removal of vegetation, parking, or obstructions that limit sight distance:

Insufficient sight lines and limited visibility can result in conditions where the minimum stopping sight distance is not met and drivers do not have sufficient time to react to other roadway users (including pedestrians and cyclists) and obstructions. Where adequate sight distance is not met due to a physical obstruction at the intersection or along the roadway, this obstruction should be removed.

Table 12 summarizes the applicable CMF or CMFs for the countermeasure including the type of crashes, and crash severity that the CMF would apply. This table also includes the high-level cost and implementation timeline for each countermeasure.

Table 12. Benefits and costs of low-cost stop-controlled intersection countermeasures

COUNTERMEASURE	CMF		HIGH-LEVEL COST	TIMELINE
C.1–3. Implement systemic signing and marking improvements at stop-controlled intersections	**CMF**	**0.81**	LOW	MEDIUM-TERM
	Crash Type	All		
	Crash Severity	K, A, B, C		
	CMF ID	8893		
	CMF	**0.85**		
	Crash Type	Nighttime		
	Crash Severity	All		
	CMF ID	8870		
C.4. Removal of vegetation, parking, or obstructions that limit sight distance	**CMF**	**0.64 – 0.75**[12]	LOW	SHORT-TERM

Table 13. High-level considerations for low-cost stop-controlled intersection countermeasures

COUNTERMEASURE	WHERE SHOULD IT BE CONSIDERED / PRIORITIZED?	CONSIDERATIONS FOR IMPLEMENTATION
C.1–3. Implement systemic signing and marking improvements at stop-controlled intersections	• Existing stop-controlled intersections that have been identified as priority intersections as part of this study	• May not be needed at low-volume intersections (i.e. intersection between two residential streets) where minimal collisions were identified
C.2. Removal of vegetation, parking, or obstructions that limit sight distance	• Intersections with a high proportion of angle collisions • Intersections that do not currently meet sight distance standards • Intersections with non-perpendicular approaches	• Sight distance should be evaluated in the field to determine to what extent existing obstructions need to be removed • Sight distance may not always be sufficiently improved through these means and could require supplemental improvements

12 https://toolkit.irap.org/safer-road-treatments/sight-distance-obstruction-removal/

As noted in the table above, Implementation of systemic signing and marking improvements could be applied at all priority stop-controlled intersections or even Village-wide. It is understood that traffic control of existing stop-controlled intersections may change in the future and depending on the timing of future changes to intersection control, the low-cost countermeasures may be implemented as a short-term solution. The Village may also find that short-term countermeasures sufficiently address safety-related issues at these intersections prior to more expensive countermeasures such as installing traffic signals or constructing roundabouts.

Within the high priority network and based on the countermeasure selection criteria outlined previously, Table 14 summarizes the intersections in which implementation of countermeasure C.2. is recommended. This includes intersections where detailed collision analyses indicate a high proportion of angle collisions and where evaluation of existing geometric conditions indicate that sight lines may be obstructed. Beyond individual intersections, it should be noted that throughout the Village, there are many instances of large trash receptacles or other sight line barriers being located near driveways and minor intersections. In addition to the intersections outlined in Table 14, it would be beneficial for the City to perform a Village-wide review of sight distance at these locations, consider relocating trash receptacles or other barriers, and update development and public space standards to ensure that sight distance is not impeded as part of future developments and projects.

Table 14. Recommended low-cost stop-controlled intersection countermeasures

INTERSECTION	PRIORITIZATION SCORE	EXISTING INTERSECTION CONTROL	COUNTERMEASURE
			C.2
Mountain Rd & Seven Springs Mountain Rd	227*	SSSC (3-leg)	•
Acres Rd & Israel Zupnick Dr	149*	SSSC (3-leg)	•
Forest Rd & Schunnemunk Rd	95*	SSSC (3-leg)	•
Mountain Rd & Karlsburg Rd	90*	SSSC (4-leg)	•
Mountain Rd & Sasev Ct	62	SSSC (3-leg)	•
Forest Rd & Carter Ln	14.5*	SSSC (3-leg)	•
Seven Springs Rd & Rovna Ct	13.5*	SSSC (3-leg)	•
Seven Springs Mountain Rd & Taitch Ct	12*	SSSC (3-leg)	•
Schunnemunk Rd & Seven Springs Rd	-	SSSC (3-leg)	•
SSSC = side-street stop-controlled			

Signalized Intersection Improvements

As noted in the table above, Implementation of systemic signing and marking improvements should be applied at all priority stop-controlled intersections or even Village-wide. It is understood that traffic control of existing stop-controlled intersections may change in the future and depending on the timing of future changes to intersection control, the low-cost countermeasures may be implemented as a short-term solution. The Village may also find that short-term countermeasures sufficiently address safety-related issues at these intersections prior to more expensive countermeasures such as installing traffic signals or constructing roundabouts.

Within the high priority network and based on the countermeasure selection criteria outlined previously, Table 14 summarizes the intersections in which implementation of countermeasure C.2. is recommended. This includes intersections where detailed collision analyses indicate a high proportion of angle collisions and where evaluation of existing geometric conditions indicate that sight lines may be obstructed. Beyond individual intersections, it should be noted that throughout the Village, there are many instances of large trash receptacles or other sight line barriers being located near driveways and minor intersections. In addition to the intersections outlined in Table 14, it would be beneficial for the City to perform a Village-wide review of sight distance at these locations, consider relocating trash receptacles or other barriers, and update development and public space standards to ensure that sight distance is not impeded as part of future developments and projects.

D.1. Restrict right-turn-on-red

Restricting right turns at red lights at all times, during certain times of day or when activated to pedestrian crossing signals is a simple, low-cost way to improve pedestrian safety and decrease crash rates with vulnerable road users at intersections. When implemented in conjunction with a leading pedestrian interval, the signal changes can benefit pedestrians with minimal impacts on traffic. Right turn on red restrictions are most helpful in locations with substantial pedestrian volumes, at places where children are expected to cross, and at locations with sight line issues.

Figure 43. An example of a no-turn-on-red sign.

D.2. Improve signal visibility

Adding controlled-contrast backgrounds to the backplates of traffic signal heads improves the visibility of the illuminated face of the signal and addresses visibility, conspicuity, and orientation issues for both older and color vision deficient drivers. Improved signal heads can be made even more conspicuous by framing the backplate with a 1- to 3-inch yellow retro-reflective border. Signal heads that have backplates equipped with retro-reflective borders are more visible and conspicuous in both daytime and nighttime conditions. This countermeasure is also advantageous during periods of power outages when the signals would otherwise be dark, providing a visual cue for motorists to stop at the intersection ahead.

D.3. Install Pedestrian Countdown Timer

All existing signals within the Village currently include pedestrian signal heads, but not all include pedestrian countdown timers. Pedestrian interval countdown displays can improve pedestrian safety by informing pedestrians of the number of seconds remaining in the walk phase. Pedestrian countdown timers should incorporate accessibility features for blind pedestrians or for those with low vision (Figure 44). Audible (speed or tone) and vibrotactile indications of the Walk interval are required per MUTCD guidance, but additional features such as audible beaconing may be considered on a case-by-case basis. Audible beaconing requires special actuation and should only be provided when a specific set of conditions are achieved, as this feature can cause more confusion if implemented along every crosswalk of a single intersection. Audible beaconing should only be considered for crosswalks longer than 70 feet, skewed intersections, intersections with five of more approaches, and upon special request.

D.4. Convert from span-wire mounted traffic signal to mast arm-mounted traffic signal:

Span-wire mounted traffic signals can accommodate wide intersections while providing flexibility in signal head placement. While span-wire signal mounted traffic signals are less costly initially than mast arm mounted signals, they generally have higher maintenance costs in the long-term. Signal visibility at span-wire mounted traffic signals may be inferior, a safety issue that is often exacerbated by wind and ice.

D.5. Leading pedestrian interval

A leading pedestrian interval occurs when the “Walk” signal precedes the green light for vehicular traffic by a few seconds. This allows pedestrians crossing an intersection to enter the intersection prior to vehicular maneuvers occurring, making pedestrians more visible to drivers making turning maneuvers.

Figure 44. An example of a pedestrian signal countdown timer.

Table 15 summarizes the applicable CMF or CMFs for the countermeasure including the type of crashes, and crash severity that the CMF would apply. This table also includes the high-level cost and implementation timeline for each countermeasure.

Table 15. Benefits and costs of signalized intersection countermeasures

COUNTERMEASURE	CMF		HIGH-LEVEL COST	TIMELINE
D.1. Restrict right-turn-on-red	**CMF**	**F(X) 0.92 – 0.98** *Depending on number of approaches in which countermeasure is applied*	LOW	SHORT-TERM
	Crash Type	All		
	Crash Severity	All		
	CMF ID	5194		
D.2. Improve signal visibility	**CMF**	**0.71**	MEDIUM	MEDIUM-TERM
	Crash Type	All		
	Crash Severity	K, A, B, C		
	CMF ID	3941		
D.3. Install pedestrian countdown timer	**CMF**	**0.91**	MEDIUM	MEDIUM-TERM
	Crash Type	All		
	Crash Severity	All		
	CMF ID	8790		
	CMF	**0.91**		
	Crash Type	Vehicle/Pedestrian		
	Crash Severity	All		
	CMF ID	10119		
D.4. Convert from span-wire mounted traffic signal to mast arm-mounted traffic signal	**CMF**	**0.97**	MEDIUM	MEDIUM-TERM
	Crash Type	Angle		
	Crash Severity	K, A, B, C		
	CMF ID	9406		
D.5. Implement a leading pedestrian interval	**CMF**	**0.90**	--	--
	Crash Type	All		
	Crash Severity	All		
	CMF ID	9901		

At a high level, Table 16 outlines where and under what conditions the identified signalized intersection countermeasures should be prioritized as well as the considerations for implementation.

Table 16. High-level considerations for signalized intersection countermeasures

COUNTERMEASURE	WHERE SHOULD IT BE CONSIDERED / PRIORITIZED?	CONSIDERATIONS FOR IMPLEMENTATION
D.1. Restrict right-turn-on-red	• Intersections where pedestrian crashes are prevalent • Intersections where right turn-related crashes are prevalent • Intersections with sight line issues • Intersections near bus stops, schools, parks or other high volume pedestrian generators	• "No Turn On Red" signage should be clearly visible to right-turning motorists stopped in the curb lane • Impacts to vehicle operations should be studied prior to installation
D.2. Improve signal visibility	• Should be considered at all signalized intersections	• There may be structural limitations due to added wind load
D.3. Install pedestrian countdown timer	• Intersections where pedestrian crashes are prevalent • Should be considered at all signalized intersections where not currently provided	• Can be powered using solar panels, as needed • Appropriate accessibility features should be evaluated and align with best practices[13]
D.4. Convert from span-wire mounted traffic signal to mast arm-mounted traffic signal	• Intersections where span-wire mounted traffic signals are currently employed	• Conversion of the signal can be disruptive and requires careful traffic management
D.5. Implement a leading pedestrian interval	• Intersections where pedestrian crashes are prevalent • Intersections near bus stops, schools, parks or other high volume pedestrian generators with high conflicting turning vehicle volumes • Skewed intersections or intersections with a large right-turning radius/slip lane	• Can be paired with "No Turn On Red" restrictions • Implementation of Leading Pedestrian Intervals will reduce vehicular green time

13 http://www.apsguide.org/chapter_overview.cfm

Within the high priority network and based on the countermeasure selection criteria outlined previously, Table 17 summarizes the recommended signalized intersection enhancements at the priority intersections.

Table 17. Recommended signalized intersection countermeasures at the priority intersections

INTERSECTION	PRIORITIZATION SCORE	EXISTING INTERSECTION CONTROL	COUNTERMEASURE				
			D.1	D.2	D.3	D.4	D.5
Forest Rd & Mordche Sher Blvd	118*	Signalized (3-leg)	●	●	●		●
Forest Rd & Mountain Rd	118*	Signalized (3-leg)		●		●	●
Forest Rd & Van Buren Dr	52*	Signalized (4-leg)		●	●		●
Forest Rd & Hayes Ct	45*	Signalized (3-leg)		●	●	●	●
Forest Rd & Acres Rd	24*	Signalized (3-leg)		●		●	

The following intersection within Table 17 warrants additional discussion due to the existing conditions of the intersection, as outlined below:

Forest Road & Mordche Sher Boulevard

At this intersection, it is recommended that “No Right Turn on Red” restrictions be applied to the eastbound approach of Mordche Sher Boulevard due to possible sight line issues. However, additional evaluation would be necessary to determine if adequate sight distance is met along this approach and understand the operational impacts of such a change. While one right angle collision occurred at this intersection (of a total of four collisions recorded), this does not indicate a significant trend.

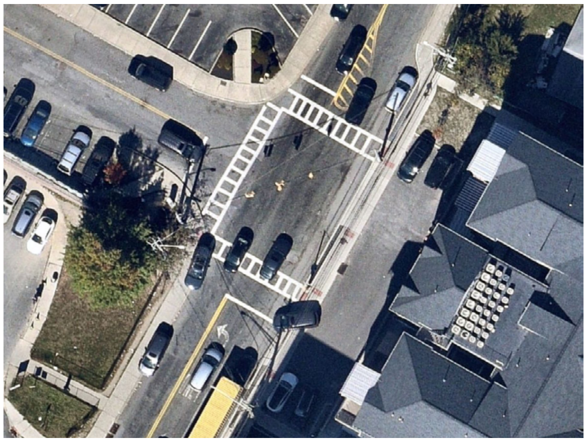

Figure 45. The intersection of Forest Road and Mordche Sher Boulevard.

Overall, any new traffic signal considered in the Village, including those identified in this plan should consider the immediate implementation of the identified signalized intersection countermeasures including improved signal visibility, pedestrian countdown timers, and mast-arm mounted signal heads. No Turn on Red restrictions should be considered on a case-by-case basis and evaluated based on the adequacy of sight lines at each approach and impacts to intersection operations.

CORRIDOR IMPROVEMENTS

There are a number of potential corridor improvements that can be implemented to address the collision types and trends at the priority roadway segments identified in Section XX. This section outlines the countermeasures recommended in the study area and the specific roadway segments in which these countermeasures would be beneficial. Included for each countermeasure is the identified CMF (or CMFs), high-level cost of the improvement/timeline, and overall application guidance.

Speed Management

Speed affects not only the risk for crashes occurring, but also the severity and outcomes of the crash. Speed was reported to be a contributing factor in approximately 7 percent of crashes in the Village and 17 percent of fatal and serious injury crashes. There are a series of countermeasures that would be beneficial in addressing speeding throughout the Village of Kiryas Joel, including the following:

A.1. Speed enforcement cameras

Speed enforcement cameras have been shown to be effective at reducing speeds and crashes associated with speeding. Agencies can use speed enforcement cameras to detect speeding and capture photographic or video evidence of vehicles that are violating a set speed threshold. These cameras can be deployed at fixed points, along multiple points (to capture average speed over a certain distance), or as mobile units. They are an effective and reliable technology to supplement more traditional forms of enforcement, engineering measures, and education to alter social norms through penalization.

Figure 46. An example of a speed enforcement camera warning sign.

A.2. Dynamic speed feedback signs

Dynamic speed feedback signs consist of a speed measuring device and a message sign that displays information such as the speed of vehicles exceeding the predetermined threshold or a message saying to slow down. Speed feedback systems can also activate additional warning devices such as flashing beacons or the illuminated elements of an enhanced curve warning sign. Speed feedback signs can be especially effective near schools. They are designed to encourage drivers to slow down without direct penalization. Under existing conditions there is a dynamic speed feedback sign located along Forest Road south of Mountain Road. These have also been used in other locations

Figure 47. An example of a dynamic speed feedback sign.

A.3. Install speed humps

Generally located on residential streets or other low-speed roads, these raised pavement structures force motorists to slow down to a safe speed. Studies show speed humps can be effective at reducing speeds by nearly 10 mph.

Figure 48. An example of a low-speed residential speed hump.

A.4. Enhanced Curve Delineation

Improving striping or signing along horizontal curbs can make drivers more aware of the road's curvature and encourage drivers to slow down. Within the Village, it is recommended that enhanced curve delineation be provided as chevron signage, thermoplastic reflective pavement markings, and/or flexible delineators.

Figure 49. An example of a well-delineated curve.

Table 18. Benefits and costs of speed management countermeasures

COUNTERMEASURE	CMF		HIGH-LEVEL COST	TIMELINE
A.1. Speed Enforcement Cameras	**CMF** Crash Type Crash Severity CMF ID	**0.46** All All 2915	LOW	MEDIUM-TERM
	CMF Crash Type Crash Severity CMF ID	**0.52** All A, B, C 2921		
A.2. Dynamic Speed Feedback Signs	**CMF** Crash Type Crash Severity CMF ID	**0.95** All All 6885	LOW	MEDIUM-TERM
A.3. Install Speed Humps	**CMF** Crash Type Crash Severity CMF ID	**0.60** All A, B, C 132	MEDIUM	MEDIUM-TERM
A.4. Enhance Curve Delineation	**CMF** Crash Type Crash Severity CMF ID	**0.82** Non-intersection K, A, B, C 10612	LOW	MEDIUM-TERM
	CMF Crash Type Crash Severity CMF ID	**0.73** Non-intersection All 10613		

At a high level, Table 19 outlines where and under what conditions the identified speed management countermeasures should be prioritized as well as the considerations for implementation.

Table 19. High-level considerations for speed management countermeasures

COUNTERMEASURE	WHERE SHOULD IT BE CONSIDERED / PRIORITIZED?	CONSIDERATIONS FOR IMPLEMENTATION
A.1. Speed Enforcement Cameras	• Where speeding is an established issue and location-specific • Within school zones	• Public trust is essential for any type of enforcement and therefore should be planned with community input and equity impacts in mind • Agencies should conduct a legal and policy review to determine if speed cameras are authorized and how traffic laws may impact the use of speed enforcement cameras
A.2. Dynamic Speed Feedback Signs	• Where speeding is an established issue and location-specific • Where speed limits or land uses change • Roadways with steep downhill grades • Along corridors where drivers can perceive the need to slow (school zones, curves, etc.)	• Most effective if dynamic feedback sign is installed with a speed limit sign • May be used with an LED flash that is activated if the motorist is traveling above a threshold speed or a message such as “Slow Down”
A.3. Install Speed Humps	• Low-volume, low-speed residential roadways	• May not be appropriate for transit routes or emergency response routes • Should not be placed in front of driveways or other access areas • Other countermeasures, such as raised crosswalks and the conversion of intersections to all-way stop-control may provide sufficient traffic calming under some scenarios and therefore speed humps are typically employed if those elements are not applicable along a given roadway segment
A.4. Enhance Curve Delineation	• Curves with a small radius, large deflection angle, and limited sight distance • Where there is a demonstrated or emerging crash problem	• Chevron signs should be oriented at 90-degree angles to approaching vehicles Roundabouts typically require a larger footprint that may not always be feasible

Within the high priority network and based on the countermeasure selection criteria outlined previously, Table 20 summarizes the recommended speed management countermeasures along the priority corridors. The recommendations included in this table are based on an evaluation of crash data; however, additional speed studies along these corridors may be desired prior to implementing countermeasures. Specifically for speed enforcement cameras, public outreach and policy reviews must be performed prior to implementation.

Within the high priority network and based on the countermeasure selection criteria outlined previously, Table 20 summarizes the recommended speed management countermeasures along the priority corridors. The recommendations included in this table are based on an evaluation of crash data; however, additional speed studies along these corridors may be desired prior to implementing countermeasures. Specifically for speed enforcement cameras, public outreach and policy reviews must be performed prior to implementation.

Table 20. Recommendations for speed management countermeasures

ROADWAY	FROM	TO	PRIORITIZATION SCORE	COUNTERMEASURE			
				A.1	A.2	A.3	A.4
Forest Road	Gorlitz Ct	Mordche Sher Blvd	176*		●		
Dinev Rd	Bakertown Rd	End	135				●
Karlsburg Rd	Mountain Rd	End	108				●
Seven Springs Mountain Rd	Mountain Rd	End	104*		●		
Bakertown Rd	Dinev Rd	NY-105	101*		●		
Satmar Drive	Acres Rd	Hayes Ct	76			●	
Van Buren Dr	Forest Rd	End	73.5		●		
Rovna Ct	NY-44	End	53*			●	●
Seven Springs Mountain Rd	Nickelsburg Rd	Seven Springs Rd	13*	●	●		
Mountain Rd	Seven Springs Mountain Rd	Forest Rd	9*		●		
Seven Springs Rd	Seven Springs Mountain Rd	Schunnemunk Rd	-	●	●		
Chevron Rd	Seven Springs Mountain Rd	End	-			●	
Daj Blvd	Quickway Rd	Meron Dr	-		●		
Quickway Rd	Van Buren Dr	Forest Rd	-				●
Schunnemunk Rd	Koznitz Rd	Forest Rd	-		●		

Pedestrian Facilities

There are many locations in the Village that do not currently have any sidewalks, do not have continuous sidewalks, or only have sidewalks on one side of the road, and many corridors that have limited pedestrian crossings for significant distances. Along these corridors there are many pedestrian generators that can result in pedestrians crossing at unmarked and uncontrolled locations. Additionally, there are many formal or informal pedestrian pathways that cut across roadways at mid-block locations without any kind of formal crossing treatments. There are a series of countermeasures that would be beneficial in addressing non-intersection pedestrian safety throughout the Village of Kiryas Joel, including the following:

B.1. Install sidewalks

Many roadways in the Village lack sidewalks on one or both sides of the road. Installing sidewalks in locations where pedestrians are expected to walk increases the visibility of pedestrians to drivers and reduces the risk of pedestrian crashes. Pedestrians should have a fully connected network of sidewalks or other walking routes without gaps or abrupt changes throughout the network.

B.2. High-Visibility Crosswalks

Pedestrian safety is a serious concern, especially at mid-block locations. Crossing streets at uncontrolled mid-block locations can pose a serious risk to pedestrians. High-visibility mid-block crosswalks encourage pedestrians to cross at designated locations, offering a safer, more visible, and more direct route for pedestrians to cross while signaling to drivers that they should be aware of pedestrians crossing the road. Mid-block crosswalks should be partnered with signage to clearly indicate to drivers that pedestrians may be crossing their path of travel.

B.3. Install Raised Pedestrian Crosswalk

These crosswalks act as traffic-calming measures that allow the pedestrian to cross at grade with the sidewalk. Raised crosswalks improve the visibility of pedestrians, especially children, and help to slow traffic at crossing locations. Mid-block crosswalks should be partnered with signage to clearly indicate to drivers that pedestrians may be crossing.

Table 21 summarizes the applicable CMF or CMFs for the countermeasure including the type of crashes, and crash severity that the CMF would apply. This table also includes the high-level cost and implementation timeline for each countermeasure.

Table 21. Benefits and costs of pedestrian facility countermeasures

COUNTERMEASURE	CMF		HIGH-LEVEL COST	TIMELINE
A.1. Speed Enforcement Cameras	**CMF**	**0.60**	HIGH	LONG-TERM
	Crash Type	Vehicle/Pedestrian		
	Crash Severity	All		
	CMF ID	11246		
A.2. Dynamic Speed Feedback Signs	**CMF**	**0.60**	LOW	SHORT-TERM
	Crash Type	Vehicle/Pedestrian		
	Crash Severity	All		
	CMF ID	4123		
	CMF	**0.81**		
	Crash Type	All		
	Crash Severity	All		
	CMF ID	4124		
A.3. Install Speed Humps	**CMF**	**0.64**	MEDIUM	SHORT-TERM
	Crash Type	All		
	Crash Severity	A, B, C		
	CMF ID	135		
	CMF	**0.55**		
	Crash Type	Vehicle/Pedestrian		
	Crash Severity	A, B, C		
	CMF ID	136		
A.4. Enhance Curve Delineation	**CMF**	**0.53**	MEDIUM	SHORT-TERM
	Crash Type	Vehicle/Pedestrian		
	Crash Severity	All		
	CMF ID	9024		

At a high level, Table 22 outlines where and under what conditions the identified pedestrian facility countermeasures should be prioritized as well as the considerations for implementation.

Table 22. High-level considerations for pedestrian facility countermeasures

COUNTERMEASURE	WHERE SHOULD IT BE CONSIDERED / PRIORITIZED?	CONSIDERATIONS FOR IMPLEMENTATION
B.1. Install Sidewalks	• Roadways that do not currently have sidewalks • Roadways with non-continuous sidewalks • Surrounding high volume pedestrian generators	• Right-of-way implications • In locations where installing a sidewalk is not feasible, a paved and striped shoulder may be appropriate
B.2. High-Visibility Crosswalk	• Where pedestrian pathways intersect with a roadway mid-block • Roadways where pedestrian collisions are prevalent • Near bus stops, schools, parks and other high volume pedestrian generators	• Thermoplastic markings typically require less frequent maintenance, but have more specific requirements for installation • Where on-street parking is allowed, curb extensions should be considered in conjunction with crosswalks
B.3. Raised Crosswalk	• Along roadways where traffic calming measures are desirable (i.e. local/ neighborhood roadways) • Where pedestrian pathways intersect with a roadway mid-block • Roadways where pedestrian collisions are prevalent and/or vehicular volumes are relatively low • Near schools, parks and other high volume pedestrian generators	• Raised crosswalks are prone to drainage issues • May not be appropriate for designated freight routes, transit routes, or emergency response routes
B.4. Install enhanced RRFB pedestrian crossings at mid-block crossing	• Along multi-lane crossings with speed limits less than 40 mph • Where pedestrian pathways cross a roadway mid-block • Roadways where pedestrian collisions are prevalent • Near schools, parks, trails and other high volume pedestrian generators	• Most effective when the RRFB is installed in a center median rather than the edges of the roadway • Overuse of RRFBs may diminish their effectiveness • Where on-street parking is allowed, curb extensions should be considered in conjunction with crosswalks

Table 21 summarizes the applicable CMF or CMFs for the countermeasure including the type of crashes, and crash severity that the CMF would apply. This table also includes the high-level cost and implementation timeline for each countermeasure.

Table 23. Recommended pedestrian facility countermeasures

ROADWAY	FROM	TO	PRIORITIZATION SCORE	COUNTERMEASURE			
				B.1	B.2	B.3	B.4
Forest Road	Gorlitz Ct	Mordche Sher Blvd	176*				●
Garfield Road	Hayes Ct	Van Buren Dr	161.5*	●		●	
Dinev Rd	Bakertown Rd	End	135				
Meron Dr	Bakertown Rd	End	125		●	●	
Karlsburg Rd	Mountain Rd	End	108	●			
D A Weider Blvd	Forest Rd	Kosnitz Rd	105	●		●	
Seven Springs Mountain Rd	Mountain Rd	End	104*	●			
Nickelsburg Road	Seven Springs Mountain Rd	End	103	●			
Bakertown Rd	Dinev Rd	NY-105	101*	●			
Satmar Drive	Acres Rd	Hayes Ct	76		●		
Fillmore Ct	Taylor Ct	End	57	●		●	
Bakertown Rd	Acres Rd	Dinev Rd	50*	●			
Bakertown Rd	Austra Pkwy	NY-17	39*	●			
Acres Rd	Forest Rd	Bakertown Rd	34	●			
Mordche Sher Blvd	Schunnemunk Rd	Forest Rd	18		●		
Seven Springs Mountain Rd	Nickelsburg Rd	Seven Springs Rd	13*	●	●		●
Mountain Rd	Seven Springs Mountain Rd	Forest Rd	9*	●			
Forest Rd	Acres Rd	Gorlitz Ct	8*				●
Sasev Ct	Mountain Rd	End	8	●			
Prag Blvd	Meron Dr	End	8		●		
Lizensk Blvd	Schunnemunk Rd	End	7		●		
Seven Springs Rd	Seven Springs Mountain Rd	Schunnemunk Rd	-	●			
Rhuzin Rd	Anipoli Dr	End	-	●		●	
Chevron Rd	Seven Springs Mountain Rd	End	-	●		●	
Daj Blvd	Quickway Rd	Meron Dr	-	●			●
Carter Ln	Zenta Rd	Forest Rd	-		●		
Schunnemunk Rd	Koznitz Rd	Forest Rd	-	●			
Koznitz Rd	Schunnemunk Rd	End	-	●			
Hayes Ct	Garfield Rd	Taylor Ct	-		●		

The following corridors outlined in Table 23 warrant additional discussion due to the existing conditions or future development potential, as outlined below:

Bakertown Road & Hamaspik Way

Along Forest Road south of Gorlitz Court, two pedestrian collisions occurred which resulted in a fatality or serious injury. An RRFB is proposed along Forest Road, however the exact location and ultimate necessity should be evaluated in conjunction with proposed development along Forest Road and future corridor projects. For example, if future traffic signals are proposed to provide access to future developments, an RRFB may not be necessary as sufficient pedestrian crossings may be provided along the corridor. However, if there are key pedestrian pathways that intersect with Forest Road where no pedestrian crossing is located, an RRFB could be considered. As such, the table above does not indicate that two RRFBs should be provided along Forest Road, but rather one RRFB should be provided with the specific location to be further evaluated.

Schunnemunk Road & Seven Springs Road

Along Daj Road, an RRFB should be located at the location where an existing mid-block crosswalk is provided that provides connectivity of a key pedestrian pathway leading to a school.

Figure 50. The intersection of Bakertown Road and Hamaspik Way

Corridor Design & Curbside Management

There are many locations in the Village where changes to corridor design and improved curbside management could be implemented to address existing safety-related issues. There are a series of countermeasures that would be beneficial in enhancing corridor design throughout the Village of Kiryas Joel, including the following:

C.1. Re-evaluate parking design

Angled (or perpendicular) parking can be more dangerous than parallel parking due to more limited visibility of oncoming vehicles or pedestrians. There are several roadways throughout the Village in which angled parking is provided where parallel parking may be a safer option. Many of these are located at the end of cul-de-sacs and may be more challenging to modify, but these are also locations where pedestrian collisions have been observed.

Figure 51. An example of angled parking spots in front of a business.

C.2. Formalize parking on one side of a residential street

Specific to the Village or Kiryas Joel, some narrow residential roadways allow parking on both sides of the street or have unclear restrictions as it relates to on-street parking. Along these streets, when vehicles are parked on both sides of the street, the travel lanes are effectively narrowed to approximately 7 feet. Furthermore, when vehicles are not parked along the roadway, the travel lane is effectively 15-feet wide. While narrow lane widths are typically associated with traffic calming, 7-foot travel lanes are widely considered too narrow, with 9- to 10-foot lanes being preferred. The prevalence of narrow travel lanes along residential streets has led to a high prevalence of sideswipe and head-on collisions (sometimes categorized as overtaking crashes in collision reports). In conjunction with speed management techniques and pedestrian facilities discussed previously, certain residential roadways in the Village with higher sideswipe and head-on crash rates could benefit from a striped parking lane on one side of the street with 9- to 10-foot lanes in either direction.

C.3. Install Two-Way Left-Turn Lane

A two-way left-turn lane can be added to two- or four-lane and is provided to remove left-turning vehicles from the through lanes and store those vehicles in the median area until an acceptable gap in opposing traffic is available. Removing left-turns from through lanes can lead to fewer rear-end and sideswipe collisions. Additionally, left-turning vehicles may be more comfortable waiting for a sufficient gap when turning from a dedicated lane rather than the through lane.

Figure 52. An example of a two-way left-turn lane.

Table 24 summarizes the applicable CMF or CMFs for the countermeasure including the type of crashes, and crash severity that the CMF would apply. This table also includes the high-level cost and implementation timeline for each countermeasure. As noted below, there is no applicable CMF for Countermeasure C.2. due to the existing conditions of the residential roadways in the Village. For example, there are no countermeasures for which lane widths narrower than 9 feet would apply and the conditions around parking-related countermeasures likely do not consider the narrow lane widths that exist in the Village. However, the crash data indicates a high number of sideswipe and head-on collisions that may be mitigated by giving vehicles more clearance to pass each other where vehicles are parked.

Table 24. Benefits and costs of corridor design/curbside management countermeasures

COUNTERMEASURE	CMF		HIGH-LEVEL COST	TIMELINE
C.1. Convert angled parking to parallel parking	**CMF**	**0.65**	MEDIUM	MEDIUM-TERM
	Crash Type	All		
	Crash Severity	All		
	CMF ID	163		
C.2. Formalize parking on one side of a residential street	**N/A**		MEDIUM	MEDIUM-TERM
C.3. Install two-way left-turn lane	**CMF**	**0.78**	MEDIUM	MEDIUM-TERM
	Crash Type	All		
	Crash Severity	All		
	CMF ID	2337		
	CMF	**0.41**		
	Crash Type	All		
	Crash Severity	K, A, B, C		
	CMF ID	2342		

At a high level, Table 25 outlines where and under what conditions the identified corridor design and curbside management countermeasures should be prioritized as well as the considerations for implementation.

Table 25. High-level considerations for corridor design/curbside management countermeasures

COUNTERMEASURE	WHERE SHOULD IT BE CONSIDERED / PRIORITIZED?	CONSIDERATIONS FOR IMPLEMENTATION
C.1. Convert angled parking to parallel parking	• Where angled or perpendicular parking currently exists along a public roadway	• In some instances, conversion to parallel parking may require additional design changes along the corridor or roadway segment • This countermeasure may not be feasible if existing angled parking is located on private property or necessary to satisfy parking requirements for residential buildings
C.2. Formalize parking on one side of a residential street	• Residential street with parking on both sides and a total curb to curb width of 30 feet or less • Roadways with a high prevalence of sideswipe, head-on, or overtaking collisions in which narrow lane widths are a contributing factor	• May not be necessary along very low volume roadways if a prevailing collision history does not indicate an issue
C.3. Install two-way left-turn lane	• Along corridors where rear end or sideswipe collisions are prevalent in which left turns onto roadways or driveways are a contributing factor • Along corridors with a significant number of minor roadways or driveways that are not signal-controlled	• Left-turn lanes would need to be incorporated at intersections along the corridor if they are not currently provided • Where access to minor streets or driveways is not needed, a raised center median should be considered in lieu of a continuous two-way left-turn lane • At intersections, where a left-turn does not exist, a raised pedestrian median should be considered in lieu of a striped median

Within the high priority network and based on the countermeasure selection criteria outlined previously, Table 26 summarizes the recommended corridor design and curbside management countermeasures along the priority corridors.

Table 26. Recommended corridor design/curbside management countermeasures along the priority corridors

ROADWAY	FROM	TO	PRIORITIZATION SCORE	COUNTERMEASURE		
				B.1	B.2	B.3
Forest Road	Gorlitz Ct	Mordche Sher Blvd	176*			●
Dinev Rd	Bakertown Rd	End	135		●	
Meron Dr	Bakertown Rd	End	125		●	
Karlsburg Rd	Mountain Rd	End	108	●		
Yoel Klein Blvd	Prag Blvd	End	51	●		
Forest Rd	Mordche Sher Blvd	Carter Ln	28*	●		●
Mordche Sher Blvd	Schunnemunk Rd	Forest Rd	18	●		
Forest Rd	Acres Rd	Gorlitz Ct	8*			●
Sasev Ct	Mountain Rd	End	8	●		
Prag Blvd	Meron Dr	End	8	●		
Karlin Blvd	Mountain Rd	End	1	●		
Chevron Rd	Seven Springs Mountain Rd	End	-	●		
Koznitz Rd	Schunnemunk Rd	End	-	●		

High Friction Surface Treatment Program

High friction surface treatments (HFST) are a method of applying higher quality aggregate and binder to an existing roadway to improve vehicle grip in wet conditions as well as dry. HSFT is a relatively inexpensive method of reducing crash rates, especially in the vicinity of horizontal curves and high-volume intersection approaches. HSFT does not involve the overlay of corridors but is a spot treatment applied in critical areas.

Table 27 summarizes the applicable CMF or CMFs for the countermeasure including the type of crashes, and crash severity that the CMF would apply. This table also includes the high-level cost and implementation timeline for each countermeasure.

Table 27. Benefits and costs of HSFT countermeasures

COUNTERMEASURE	CMF		HIGH-LEVEL COST	TIMELINE
D.1. High friction surface treatment	**CMF**	**0.78** (at curves)	LOW	SHORT-TERM
	Crash Type	All		
	Crash Severity	K, A, B, C		
	CMF ID	10333		
	CMF	**0.81**		
	Crash Type	All		
	Crash Severity	All		
	CMF ID	2259		

At a high level, Table 28 outlines where and under what conditions the identified corridor design and curbside management countermeasures should be prioritized as well as the considerations for implementation.

Table 28. High-level considerations for HSFT countermeasures

COUNTERMEASURE	WHERE SHOULD IT BE CONSIDERED / PRIORITIZED?	CONSIDERATIONS FOR IMPLEMENTATION
D.1. High friction surface treatment	• Sections of pavement with a high proportion of wet road crashes • Roadways with horizontal curves	• Requires more long-term maintenance than a traditional asphalt roadway • Should include a field assessment of existing pavement conditions

Within the high priority network and based on the countermeasure selection criteria outlined previously, Table 29 summarizes the recommended HSFT countermeasures along the priority corridors.

Table 29. Recommended HSFT countermeasures along the priority corridors

ROADWAY	FROM	TO	PRIORITIZATION SCORE	COUNTERMEASURE
				D.1
Dinev Rd	Bakertown Rd	End	135	●
Seven Springs Mountain Rd	Mountain Rd	End	104*	●
Seven Springs Mountain Rd	Nickelsburg Rd	Seven Springs Rd	13*	●
Mountain Rd	Seven Springs Mountain Rd	Forest Rd	9*	●
Forest Rd	Acres Rd	Gorlitz Ct	8*	●
Seven Springs Rd	Seven Springs Mountain Rd	Schunnemunk Rd	-	●
Quickway Rd	Van Buren Dr	Forest Rd	-	●

CORRIDOR IMPROVEMENTS

In addition to the intersection and corridor improvements outlined previously, there are several policy and education-related countermeasures that could be implemented Village-wide, including the following:

Implement Safe Routes to School Program

The purpose of Safe Routes to School (SRTS) programs is to improve safety for children walking and biking to school through means of infrastructure improvements, education on choosing safe routes and safe behaviors, campaigns to educate and promote safe walking and biking, and enforcement to support safe walking and biking.

Table 30 summarizes the applicable CMF or CMFs for the countermeasure including the type of crashes, and crash severity that the CMF would apply. Of note, no CMF is available related to reducing the illegal passing of school buses.

Table 30. Benefits and costs of policy and education improvement countermeasures

COUNTERMEASURE	CMF		HIGH-LEVEL COST	TIMELINE
Implement Safe Routes to School Program	**CMF**	**0.87**	LOW	SHORT-TERM
	Crash Type	Vehicle/Pedestrian; Vehicle/Bicycle		
	Crash Severity	All		
	CMF ID	2200		

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POLICY STRATEGIES

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POLICY STRATEGIES

In addition to street design changes, this Safety Action Plan has assembled several potential changes in policy that may help reduce fatal and serious injury crashes. These suggestions have been collected from observations, public input, and crash analysis.

Complete Streets

Comments from the public outreach process noted inconsistencies and poor connectivity within existing street infrastructure. As municipalities nationwide are recognizing the importance of infrastructure to mobility and safety, many have adopted policies promoting "Complete Streets". Complete Streets is not a singular design, but an approach to overall street design that promotes safe access for all users. Policy may require that new developments consider sidewalks, bike lanes, bus lanes, median islands, roundabouts, and more. Numerous municipalities across New York State[14], including KJ's home county of Orange, have adopted Complete Streets policies. For the Village to have a robust Complete Streets policy, new and updated public and private projects must be designed in a way that is comfortable and convenient for travel for all users. A complete streets plan should have achievable objectives and goals. These goals should promote safety on all roads encourage collaborations between all municipal agencies and improve connectivity. In summary, complete streets should integrate transportation and land use, improve safety, and ensure the community has a livable urban realm. The New York State Department of Transportation recommends these best practices[15].

- **Planning and Scoping** - Development of project scopes and plans that identify challenges and solutions.
- **Design** - Incorporation of designs that accommodate all transportation modes, or enhance usability for pedestrians, cyclists and transit users.
- **Coordination and Community Involvement** - Identification of stakeholders from the community and consideration of their input on projects.
- **Outreach, Education and Training** - Demonstration of exemplary outreach and education components, including robust interaction with community residents, businesses, elected officials, and others. to convey the benefits of Complete Streets principles and projects.

Because KJ is experiencing rapid residential and commercial development, an ordinance requiring new construction to consider safety improvements in their designs could be an effective way to prioritize crash reduction.

Curb Management

During the outreach efforts in the Village and review of the survey comments, KJ recognized a lack of formalized parking regulations. Respondents mentioned erratic parking habits, unsafe vehicle storage, and poor access to the curb. Parking regulations and policies could be implemented along commercial corridors in the Village. While they do not need to require payment or fees, this could be a good way to generate revenue for the Village. The regulations should encourage curbside turnover and provide space for all users. ADA-compliant spaces should be provided as should specific truck-loading zones. These spaces should be easily identifiable and will reduce the need for delivery vehicles to park in

14 NYSDOT, Municipalities with Complete Street Resolutions, https://www.dot.ny.gov/programs/completestreets/Counties%20and%20Municipalities%20with%20Resolutions
15 NYSDOT, Complete Streets Best Practices, https://www.dot.ny.gov/programs/completestreets/best-practices

unsafe areas. ADA-compliant spaces will provide room for those who need extra space when entering or exiting their vehicle. Areas around schools could also have marked loading spaces for school buses. Spaces along commercial corridors can be marked with road striping and curbside parking regulations could be marked with paint on the curb.

Figure 53 shows commonly used parallel parking markings that delineate parking spaces at the curb. Figure 54 shows a more detailed system that designates certain curb management practices with visibly colored curbs.

Figure 53. Parallel parking road markings

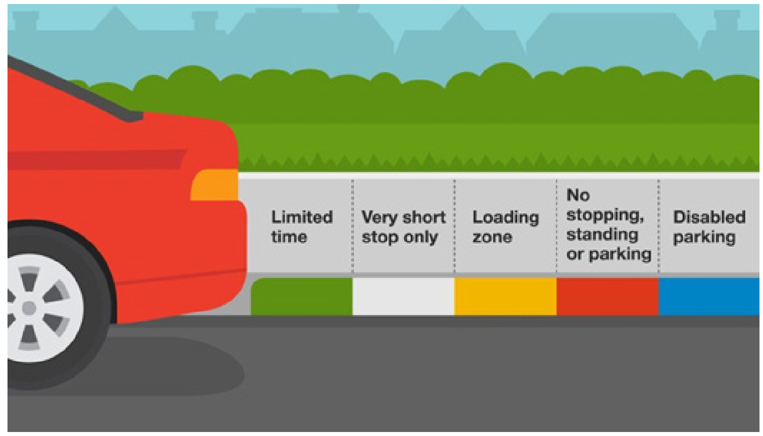


Figure 54. Curb color recommendations

There are no posted or visible parking regulations within the Village, and observations have revealed vehicles parked on the sidewalk and within bus stops, as well as other places that could endanger pedestrians. Enforcement of traffic laws is conducted by New York State Police, as well as Village Public Safety officers, a part time law-enforcement. The only traffic enforcement penalty listed in the official Village code relates to violations of school bus photo monitoring systems. For this violation, any driver charged is fined $250 for the first violation, $275 for a second violation committed within 18 months of the first, and $300 for a third violation committed within 18 months of the previous violation[16]. In discussions with Village residents and Public Safety officials at public outreach events, enforcement levels were described to be very low.

Review of the public survey responses shows that residents have a desire for increased enforcement. As of 2024, Kiryas Joel now has its own courthouse which may expand capabilities of local law enforcement beyond the current, part-time Public Safety department.

In 2025, the Village has initiated a study to assess current parking conditions through data collection and recommend practices for curb management and parking enforcement based on best practices. As part of the evaluation, the Village should consider re-purposing some curbside space for pedestrian safety treatments.

Figure 55. Parking overflow on Garfield Road

16 Kiryas Joel Village Code, Article IIA, § 140-12.3

Informal Pedestrian Pathways

Kiryas Joel contains numerous informal pedestrian pathways used by residents. Some of these pathways traverse through uninhabited portions of the Village and others provide shortcuts for pedestrians. Some of these pathways could be formalized to provide safer and more accessible pedestrian routes. Policy could be proposed that would allow the Village to review the existing informal pedestrian pathways and decide whether to formalize these routes with sidewalks. Three locations below show examples of pathways that could be formalized to create a more complete pedestrian network.

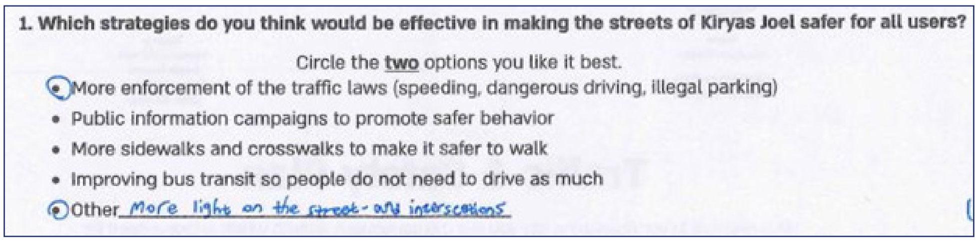
Figure 56. Informal pedestrian pathways near Schunnemunk Road/Berdichev Drive/ Lizensk Boulevard

Figure 57. Informal pedestrian pathways near Zenta Road/Carter Lane

Figure 58. Informal pedestrian pathways near Mezabish Road/Lizensk Boulevard

Lighting

Many comments during the survey process and at the public meetings revealed concern over a perceived lack of street lighting on streets and at intersections. Street lighting helps increase safety at dawn, dusk, and overnight by enhancing visibility. The Village could identify heavily trafficked areas that would benefit from increased lighting. The Village could also require new development to install streetlights. Policy that promotes additional street lighting would provide visual enhancements that would increase safety for pedestrians. FHWA research provides lighting thresholds that should be maintained at intersections to make them safe for pedestrians.[17]



1. Which strategies do you think would be effective in making the streets of Kiryas Joel safer for all users?

Circle the **two** options you like it best.

- More enforcement of the traffic laws (speeding, dangerous driving, illegal parking)
- Public information campaigns to promote safer behavior
- More sidewalks and crosswalks to make it safer to walk
- Improving bus transit so people do not need to drive as much
- Other More light on the street - and intersections

Figure 59. Survey results suggesting increased street lighting

Education Campaigns

In addition to legislation, policy, and street safety improvement projects, education campaigns can be helpful resources to reduce crashes. Whether they're directed at pedestrians, drivers, or bicyclists, education campaigns can work to reduce fatal and serious injury crashes by spreading awareness and encouraging safe behavior. Members of the Stakeholder Advisory Group have expressed interest in using their local expertise to develop campaigns around speeding, school bus safety, and pedestrian visibility. Additionally, several currently operating programs in the region can

In New York City, the Department of Transportation runs an annual "Dusk and Darkness" campaign ahead of Daylight Savings Time in the fall to remind drivers that an earlier sunset limits visibility[18]. This is also a useful opportunity to distribute general information about the relationship between speed and potential pedestrian injury as well as remind drivers about potential enforcement presence.

Figure 60. KJ resident promotes high-visibility clothing

The New York State Governor's Traffic Safety Commission has launched a "See and Be Seen" program that encourages pedestrians to wear bright, reflective clothing that makes them more visible to drivers in low-light conditions. This program has had a good reception in nearby Ramapo and could be especially useful in KJ due to the cultural and religious customs of wearing dark clothing. Several members of the community have expressed interest in promoting this and could be enthusiastic promoters of pedestrian visibility.

17 Research Report: Street Lighting for Pedestrian Safety, FHWA Safety Program https://safety.fhwa.dot.gov/roadway_dept/night_visib/docs/StreetLightingPedestrianSafety.pdf
18 NYCDOT, https://www.nyc.gov/html/dot/html/pr2024/dusk-and-darkness-annual-campaign-launch.shtml

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PROGRESS & TRANSPARENCY

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PROGRESS & TRANSPARENCY

The Kiryas Joel Safety Action Plan is intended to be an evolving document. While the SS4A program spurred the region into action, safety will now be at the forefront of local initiatives. This plan will outline high-level strategies to move forward. KJ is committed to the progress of these initiatives in pursuit of the region's long-term safety goal of zero roadway fatalities and serious injuries by the year 2045 and will outline several proposed high-level objectives to ensure this Safety Action Plan remains actionable, implementable, and current. These objectives are broken into the following groups: Advocacy, Data Maintenance, Plan Implementation, Transparency & Reporting. As required, this Safety Action Plan will be publicly available online.

Advocacy

KJ will meet quarterly to discuss Safety Action Plan related recommendations, projects, and strategies. These may include safety concerns identified by the public, new projects that serve a safety need, SS4A grant application needs, and strategy implementation. KJ will continue to pursue safety as an overarching theme in all projects per requirements from the Department of Transportation.

Data Maintenance

KJ will maintain and update crash data regularly and ensure it is accessible by the public by sharing a data dashboard updated annually with crash data, population figures, and equity geographies.

Plan Implementation

The project team recommends that village government meet annually with local partner agencies as represented by the Stakeholder Advisory Group to:

- Discuss identified street safety strategies and any actions taken towards implementation
- Support and provide resources to partner agencies pursuing grant funding
- Encourage agencies and local partners to pursue projects identified as part of the Safety Action Plan to achieve safety and multimodal goals.
- Consider pursuing grant funds through the SS4A program to fund projects at priority locations

Transparency Reporting

The project team recommends that village government meet annually with local partner agencies as represented by the Stakeholder Advisory Group to:

Action Plan Adoption

The Village has officially adopted this action plan on _______, 2025 with the resolution below.

WHEREAS, the Village of Kiryas Joel has shown a commitment to roadway safety through targeted infrastructure investments using proven safety countermeasures such as roundabouts, enhanced crosswalks, medians, backplates at traffic signals, street lighting, separated pedestrian and bicycle facilities, and narrower vehicle lanes to improve safety for all road users; and

WHEREAS, in 2024 the Village of Kiryas Joel, with input from the community and public and private stakeholders, developed a Safety Action Plan, known as the Safe Streets for Kiryas Joel Plan, which identifies projects, policies, and programs to be implemented over the next twenty years with the goal to eliminate severe injury and fatal crashes on city streets; and

WHEREAS, the Safe Streets for Kiryas Joel Plan aligns with the 2023 New York State Strategic Highway Safety Plan; and

WHEREAS, death and serious injury on our streets are unacceptable and preventable, and the Village of Kiryas Joel commits to a proactive Safe System Approach using proven safety countermeasures in planning, design, construction, and maintenance of infrastructure to encourage slower vehicle speeds, foster a comfortable streetside environment for all users, and improve quality of life for its citizens.

NOW, THEREFORE, BE IT RESOLVED, by the Council of the Village of Kiryas Joel, New York that:

SECTION 1. City Council hereby adopts the Safe Streets for Kiryas Joel Plan.

SECTION 2. City Council hereby commits to a goal of zero roadway fatalities and severe injuries by 2045.

SECTION 3. This Resolution is effective upon its adoption.

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