

Seattle Department of Transportation

VISION ZERO ACTION PLAN

2024 Update



May 2024



Seattle
Department of
Transportation

VISION
ZERO
SAFER STREETS FOR SEATTLE

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EXECUTIVE SUMMARY

Between 2015 and the end of 2023, there have been 224 lives lost and 1,643 people seriously injured on Seattle’s streets. While there has been an overall upward trend in these numbers over that period, where we have invested in traffic safety there has been significant improvement. With this in mind, we are reaffirming our commitment to bold progress toward reducing the number of lives lost and people seriously injured by taking new approaches to advance safety on our streets. We acknowledge that each of these lives is more than just a statistic. These are the lives of our neighbors and valued members of our community.

To rapidly advance our progress towards zero lives lost and people seriously injured, we are shifting our framework from the “five E’s” (engineering, education, engagement, enforcement, and evaluation) to adopt the multilayered Safe System Approach established by the United States Department of Transportation (USDOT). The Safe System Approach is a framework for transportation safety centered on the idea of incorporating multiple layers of protection to prevent collisions from occurring and reducing severity when collisions do occur.

The Safe System Approach includes six guiding principles: death and serious injuries are unacceptable and preventable; humans make mistakes; humans are vulnerable; responsibility is shared; **safety is proactive**; redundancy is crucial.

The actions included in this plan are also organized around the five elements of the Safe System Approach:

- Safer Streets
- Safer Speeds
- Safer People
- Safer Vehicles
- Post-Crash Care

This three-year action plan focuses on the near-term measures we can take to reduce severe crashes on our streets while providing an opportunity to evaluate and realign ongoing Vision Zero efforts before reaching our target year of 2030 for eliminating all fatal and serious injury crashes on our streets. The three-year timeframe of the plan also aligns with our typical project delivery schedule and allows us to focus on quick-delivery actions that have a high potential to move the needle on improved safety outcomes.

The plan is based on the findings of the recent [Top-to-Bottom Review](#) of the Vision Zero Program, which assessed the program’s past efforts and the impacts to roadway safety during and after the height of the pandemic. The plan also aligns with the safety strategies identified in the draft Seattle Transportation Plan, the Transportation Equity Framework, and our existing programmatic workplans. The plan focuses on actions that will have the most substantial benefits in reversing the collision trends and addressing the disparities in safety outcomes across communities.

This Vision Zero Action Plan is operationalized through 22 broad strategies along with over 80 concrete actions that will be addressed over the next three years to improve safety for all travelers on our streets. This diverse list of actions acknowledges the role that roadway design plays in providing a safe environment for all modes in mitigating human mistakes and reducing the potential for severe crashes. Our broad action list allows us to approach safety from multiple angles in alignment with the Safe System Approach.

To jumpstart progress on our goal of eliminating lives lost and seriously injured on our streets, we have established a list of specific and measurable targets for how we will advance the three-year action list in 2024. The Levy to Move Seattle, one of the funding sources for Vision Zero, will expire at the end of 2024. The [transportation levy renewal proposal](#) would enable us to rapidly expand progress on our proactive and responsive safety treatments to achieve the broader three-year targets. In 2024, we are leveraging our existing funding sources as well as a \$25.64M federal Safe Streets and Roads for All grant to construct key safety improvements in equity priority areas and to rapidly advance our Vision Zero work.

The following projects are key delivery highlights from our 2024 action list:

- Add leading pedestrian intervals to 100 signalized intersections.
- Complete no turn on red restrictions at 100 intersections.
- Construct 16 new enhanced crossings at priority intersections.
- Construct 27-40 blocks of new sidewalks or walkways.
- Construct 2.77 miles of protected bike lanes and between 7-11 miles of neighborhood greenways.
- Construct 2.1 miles of protected bike facility upgrades.

- Install improvements at 13 key intersections downtown to enhance safety and mobility for people who walk and roll.
- Complete construction of the MLK Jr Way Safety Project from Judkins Park Station to Rainier Ave S.
- Complete early-win intersection safety improvements at Rainier Ave S & S Sturtevant St and Rainier Ave S & 54th Ave S.
- Complete construction of the Georgetown-Downtown Safety Project.
- Complete speed cushion installation on Seward Park Ave S.
- Install traffic calming or lane narrowing on at least 40 non-arterial blocks.
- Complete a draft traffic safety camera policy and begin planning for new cameras.
- Complete development of a Vision Zero dashboard and post the dashboard on the SDOT website.

This Vision Zero Action Plan is a comprehensive and ambitious plan to help eliminate deaths and serious injuries on our streets. The plan demonstrates the city's commitment to safety, equity, and dignity for all travelers. The plan is also a call to action to make Seattle's streets safer for everyone and requires the collaboration and support of various stakeholders, including the city departments, partner agencies, community organizations, and the public to achieve this bold vision.

1. INTRODUCTION

1.1 VISION ZERO: A CULTURE OF CARE AND DIGNITY

Since launching the Vision Zero program in 2015, there have been 224 lives lost and 1,643 more seriously injured on Seattle’s streets.* These are more than statistics. Each of these lives lost or seriously altered by traffic collisions represents a friend, a neighbor, and a family member in our community. We acknowledge the value of these lives and firmly believe **the only acceptable number of serious injuries and lives lost on our streets is zero.**

Vision Zero is not just our plan to end traffic deaths and serious injuries on city streets by 2030. It is a culture of care and dignity for everyone who uses Seattle’s streets.

The only way we can achieve this vision is through action that prioritizes safe travel as our primary goal. This means shifting our culture to center safety, staying grounded in equity, and addressing safety concerns on our streets, both proactively and responsively.

Vision Zero is an international movement, and cities in the US and around the world have demonstrated that Vision Zero principles work. With a plan for both physical and cultural changes in our transportation system, Seattle can also reverse its collision trends and facilitate a culture of care and dignity for all travelers. The City has seen positive safety outcomes associated with Vision Zero interventions to date, and additional Vision Zero efforts will further the City’s long-term goals.

1.2 VISION ZERO ACTION PLAN PURPOSE

This Vision Zero Action Plan serves as the near-term plan for how we will advance our roadway safety goals over the next three years. The strategies and actions identified in this plan are intended to be highly specific, actionable items that establish clear steps for how we’ll implement Vision Zero principles. This 2024 update replaces the original [Vision Zero Action Plan](#) published in 2015.

In early 2023, the Seattle Department of Transportation completed a Top-to-Bottom Review of its Vision Zero Program. This Vision Zero Action Plan builds off the Top-to-Bottom Review by applying the recommendations in the report towards the development of concrete actions over the next three years. The action list in this plan also implements key strategies identified in the Seattle Transportation Plan’s Key Moves, the Transportation Equity Framework, and our existing programmatic workplans. The focus of this list is pursuing actions that will have the most substantial benefits in moving the needle towards eliminating serious and fatal crashes on our streets.

*Represents crash data on Seattle streets between the beginning of 2015 through the end of 2023 (preliminary 2023 crash data). Serious injury crashes are defined as crashes resulting in severe organ laceration, significant loss of blood, broken or distorted extremities, crush injuries, significant burns, unconsciousness, paralysis, or significant skull, chest, or abdominal injuries.

This Vision Zero Action Plan also supports the safety strategy proposed in the [transportation levy renewal](#). The Levy to Move Seattle served as a major funding source for our Vision Zero efforts after the program launched in 2015. While this funding source expires at the end of 2024, the levy renewal proposal provides increased support for Vision Zero and the projects and programs that are contributing to safety. This includes much of our priority collision reduction work, such as rapidly expanding our proactive safety treatments, implementing measures on priority corridors to control speeding, and addressing key safety treatments on our highest-crash streets.

We are undertaking a strong start to our renewed safety efforts by leveraging a \$25.64 million Safe Streets and Roads for All grant awarded to us by the United States Department of Transportation (USDOT). This funding will allow us to ramp up our construction of priority safety projects in historically underserved communities. These projects are located along high-crash corridors and advance our efforts to reduce the likelihood and severity of crashes in these areas.

2. UNDERSTANDING SAFETY TRENDS

The Vision Zero program consistently monitors safety trends and best practices on the international, national, and local levels. This allows us to better understand the broad context of collision patterns and to adopt effective countermeasures to address the types of crashes we’re experiencing on our streets. This chapter provides an overview of these recent trends, and a closer analysis of Seattle’s crash data can be found in the appendix.

2.1 NATIONAL AND INTERNATIONAL TRENDS

Over the past decade and during the pandemic, the United States has been facing a road safety crisis and is an outlier among wealthier nations

in its rising transportation fatality trends. While most developed nations have seen a decline in roadway fatalities, the United States experienced an uptick as shown in Figure 1.¹ This has largely been attributed to the car-centric design of American roadways and the lack of focus on safety for people outside of vehicles, such as people walking, rolling, and biking.

Nationally, Seattle remains one of the safest American cities with lower fatality rates on our roadways than many peer cities (see Figure 2).² Nevertheless, there were still 30 lives lost and 220 more seriously injured on Seattle streets in 2022, and to hit our Vision Zero goals, we must reduce these figures to zero.

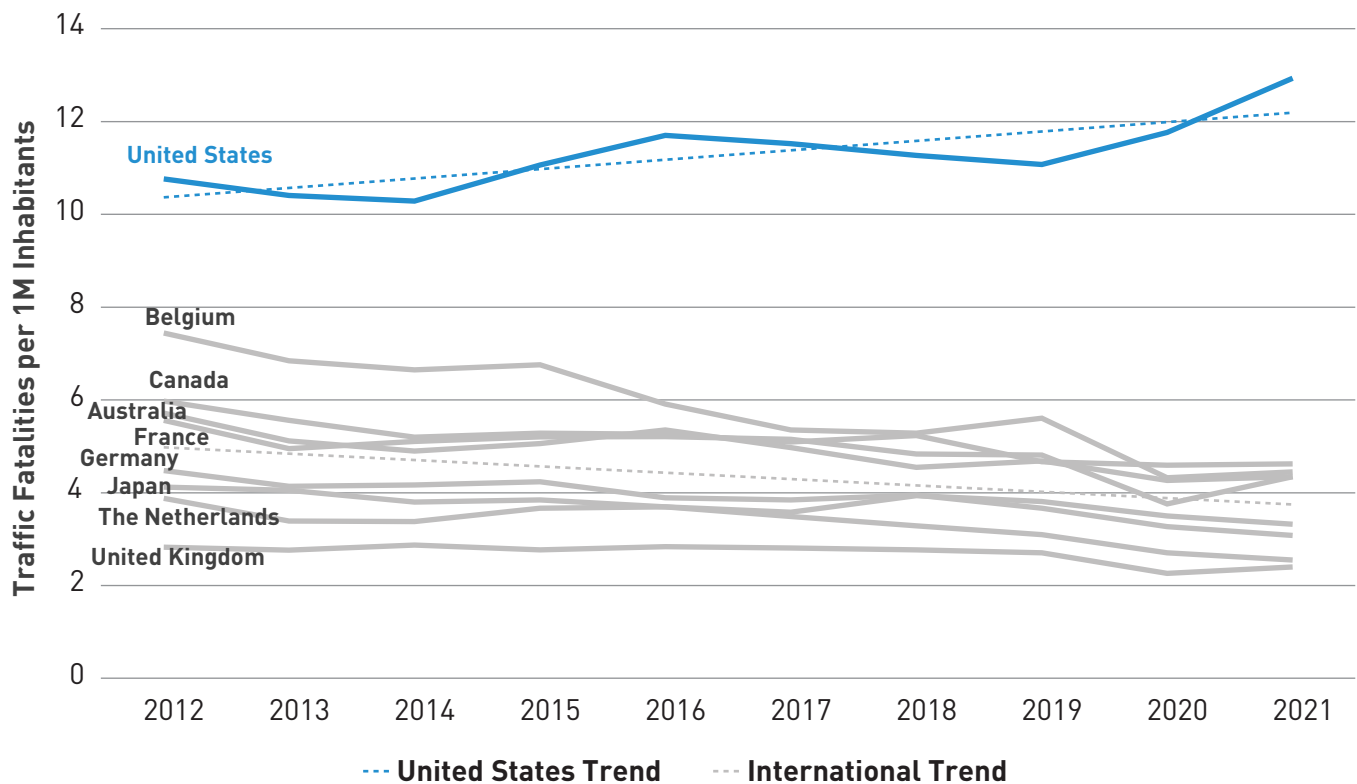


Figure 1. Traffic fatalities per 1M inhabitants by country¹

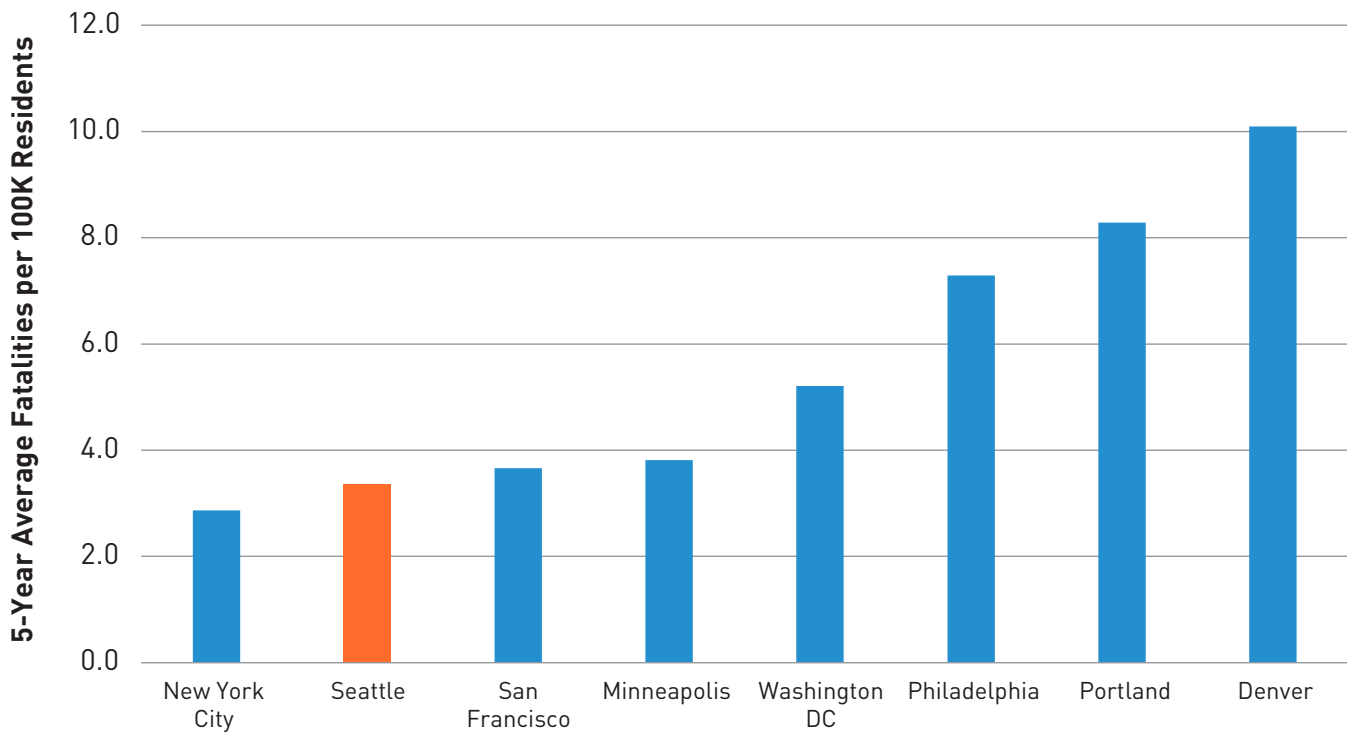


Figure 2. Comparison of traffic fatality rates among major US cities²

2.2 COLLISION TRENDS IN SEATTLE

Since the Vision Zero Program was launched in 2015 in Seattle, we have seen an overall decrease in police-reported collisions in Seattle. This includes fatal, serious injury, and injury crashes as well as crashes that result only in property damage. The figure, however, does not include collisions that do not have a Seattle Police Department response and are not later reported to the police with a documented police report.

This downward trend was most pronounced through 2020 and there has since been a minor uptick in total crashes since the beginning of the pandemic (see Figure 3). These trends have also held true for all crashes involving people walking and biking as shown in Figure 4.

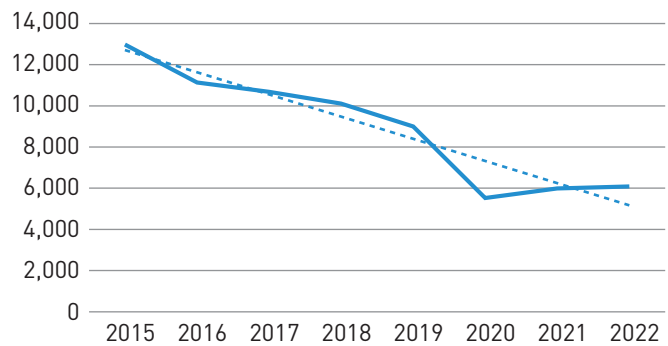


Figure 3. Total crashes in Seattle

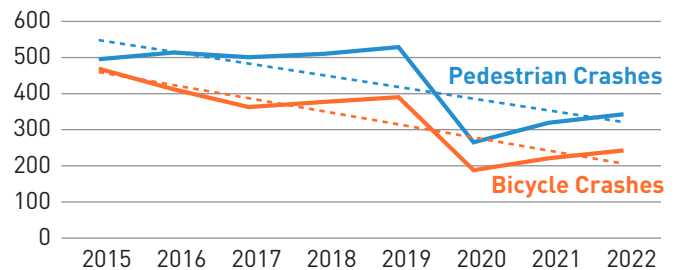


Figure 4. Total pedestrian and bicycle crashes in Seattle

Despite the decreasing rate of total crashes, the rate of severe crashes in Seattle—like many large American cities—has moved in the wrong direction. Fatal crashes peaked during the pandemic in 2021 as travel patterns shifted, fewer vehicles were on the road, and travel speeds increased. Between 2015 and 2022, the timeframe for which we have confirmed data, we have seen an overall rise in crashes that have resulted in people losing their lives or being seriously injured (see Figures 5 and 6).

We also know that **Vision Zero is an equity issue** and that not all communities and populations are being impacted equally by severe crashes. These disparities in collision patterns are explored further in the appendix.

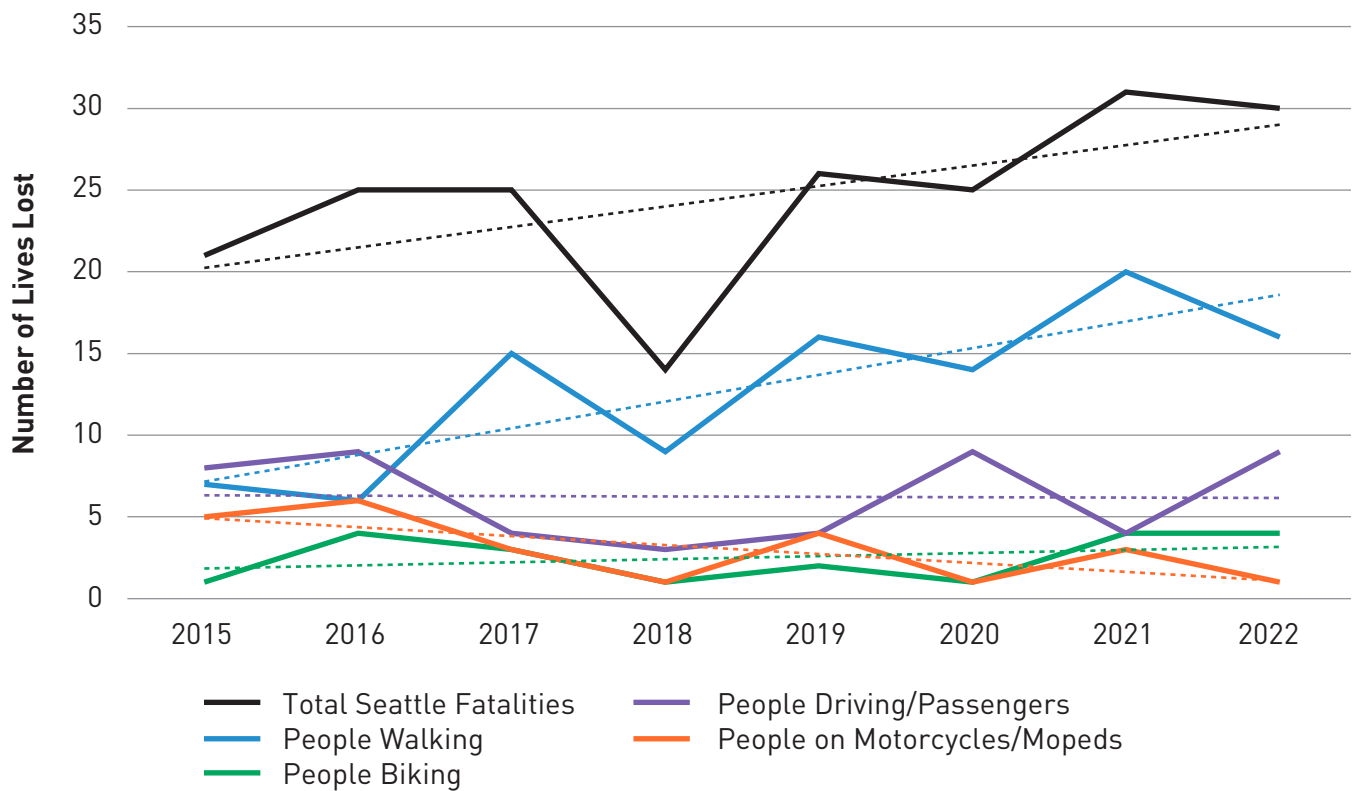


Figure 5. Lives lost on Seattle streets by mode of travel

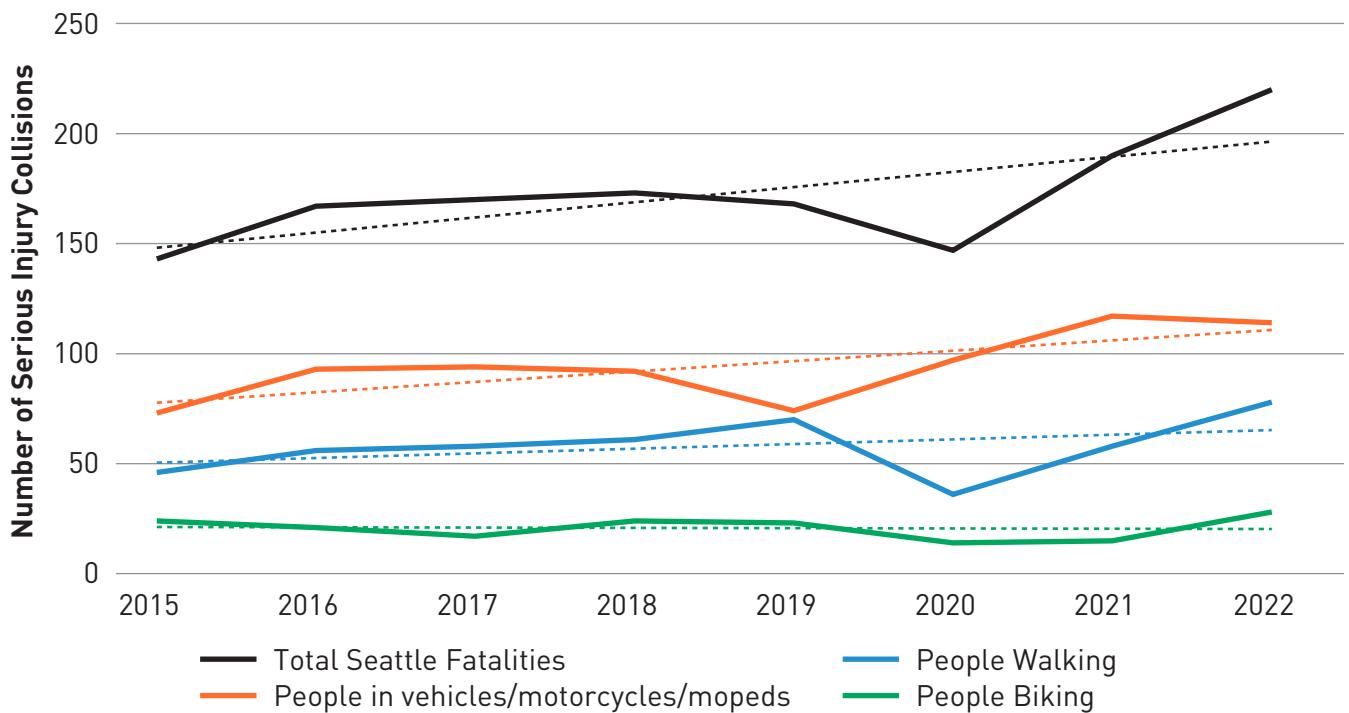


Figure 6. Serious injuries on Seattle streets by mode of travel

The increase over time in serious injury and fatal crashes does not mean that Vision Zero strategies are not working. We have seen positive safety outcomes associated with Vision Zero interventions. For example, the first phase of safety corridor improvements on Rainier Ave S completed in 2015, which included a road diet,

signal improvements, and speed limit decrease, reduced collisions by 15% with injury collisions down 30% and collisions involving people walking/rolling and biking down 40%. The more we understand the environmental and behavioral patterns in crashes, the better we can deploy our treatments in a focused and impactful way.

3. GETTING TO ZERO: OUR EVOLVING FRAMEWORK AND TOOLS

3.1 THE SAFE SYSTEM APPROACH

Our approach to safety has traditionally been based around the “five E’s:” engineering, education, engagement, enforcement, and evaluation. As we recognize the broader context of safety on our streets, we are evolving to adopt the United States Department of Transportation’s (USDOT) [Safe System Approach](#). The Safe System Approach is a framework for transportation safety centered on the idea of incorporating multiple layers of protection to prevent collisions from occurring and reducing severity when collisions do occur. The Safe System Approach includes six guiding principles: death and serious injuries are unacceptable; humans make mistakes; humans are vulnerable; responsibility is shared; **safety is proactive**; redundancy is crucial.

The actions included in this plan are also organized around the five elements of the Safe System Approach:

- Safer Streets
- Safer Speeds
- Safer People
- Safer Vehicles
- Post-Crash Care

SDOT is able to have the most effective influence over the design of our streets and the travel speeds on our streets for safer outcomes. However, we will continue to work with our partner agencies at the local, state, and federal levels to support additional efforts that will encourage safer travel behavior, improved vehicle safety, and enhanced emergency response in the event of a collision to address these complementary objectives.



Figure 7. Six guiding principles and five elements of the Safe System Approach (credit: US Department of Transportation)

Within the context of the Safe System Approach, our actions to improve safety on our streets are also prioritized with respect to the Safe System Roadway Design Hierarchy, which assigns a relative effectiveness to each safety countermeasure based on its approach to addressing potential hazards. This hierarchy is discussed further in the appendix of this plan.

Safe Streets for All Grant

To double down on our efforts around Safe System principles, we applied for a grant from the USDOT's new Safe Streets and Roads for All (SS4A) Program and were awarded \$25.64M in funding from this program in early 2023. This funding provides a major boost to multiple programs within SDOT – such as the Bike Master Plan, ADA Program, New Sidewalks, and Vision Zero – that amplify our efforts to rapidly address safer streets and safer speeds in Seattle's underserved communities. These communities experience a disproportionately high share of severe crashes, and our investments will provide a step forward in addressing these safety inequities. In addition to the funds awarded by the SS4A grant, we are dedicating about \$21M in local match to the projects, which will allow us to expand the reach of our projects to up to 95 priority locations.

The projects constructed under this grant will include treatments targeted to correct prevalent collision patterns, including building new sidewalks, traffic calming measures, flashing beacons, protected bike lanes, leading pedestrian intervals at signalized intersections, and accessible curb ramps and push buttons. The treatments will be located along high-crash corridors primarily in the Rainier Valley, SODO, Downtown, and University District neighborhoods.

To speed up the delivery of these safety upgrades, we have divided the SS4A projects into three packages of improvements that will be designed over the next two years and anticipated to be constructed between 2025-2027. These funds provide a major step forward in our delivery of critical safety upgrades, and we're excited to engage our community partners in the design and construction process as we advance these projects.

3.2 ALIGNING OUR PLANS

Safety is central to our projects, programs, and policies and is addressed in each of our planning efforts. The list of near-term action items in this plan builds upon the safety-related strategies and policies in our broader transportation plans and distills these recommendations into actionable items and projects that can be addressed over the next three years. This work is also supported by our transportation levy renewal proposal,

which includes an increase in Vision Zero funding to help us address the strategies and actions established in this plan.

This Vision Zero Action Plan also corresponds with the Puget Sound Regional Council's (PSRC) regional plan, [VISION 2050](#), which includes a policy to support the State's [Target Zero initiative](#) goals, alongside PSRC Board policy direction to further emphasize equitable, research-backed

safety improvements in regional transportation investments. As we implement our Vision Zero strategies, we'll continue looking for opportunities to align our efforts with transportation safety efforts happening at the state and regional level, including [the State's Target Zero Plan](#) and [PSRC's Regional Safety Action Plan](#).

3.2.1 Seattle Transportation Plan

The Seattle Transportation Plan establishes a 20-year vision for the future of our transportation system and creates a roadmap to guide our actions and investments in alignment with community values. Safety is the first goal of the plan, and the plan lays out key moves for each goal. The plan language frames and informs this Vision Zero Action Plan, starting with this language:

Goal: Prioritize safety for travelers in Seattle, with no serious injury or fatal crashes

Key Moves:

- *S1: Reduce vehicle speeding to increase safety*
- *S2: Concentrate safety investments where fatal and serious injury collisions occur most or are at a higher risk of occurring*
- *S3: Make all journeys safer from departure to destination, especially for people traveling outside the protection of a vehicle*
- *S4: Provide safer routes to schools, parks, transit, community gathering spaces, and other common destinations*
- *S5: Support public safety through maintenance of critical access routes and planning for a climate resilient network*

The near-term strategies and actions in this document address each of the Key Moves for safety by focusing on efforts to reduce serious and fatal crashes, reduce speeding, and provide safer access to community destinations. Aligning our Vision Zero work around the Seattle Transportation Plan gives us an early opportunity to center our work on our goal of eliminating fatal and serious injury collisions, as a priority now and for the future of our streets.

3.2.2 Transportation Equity Framework

We know that a history of racist policies and disinvestment has created inequities in how people travel and experience their streets in Seattle. We also know that the most socially, environmentally, and socio-economically disadvantaged communities in Seattle see higher collision rates than in other areas of the city. Achieving our safety goals is dependent upon effectively applying an equity lens to address the disparities that still exist in our transportation system.

The Transportation Equity Framework (TEF) begins to address these historic injustices by providing guidance on how we approach equity in all aspects of our work. This framework is based on input from the Transportation Equity Workgroup—a broad and diverse set of community members representing Black, Indigenous, and other People of Color and people who have typically not been afforded a role in public discourse.

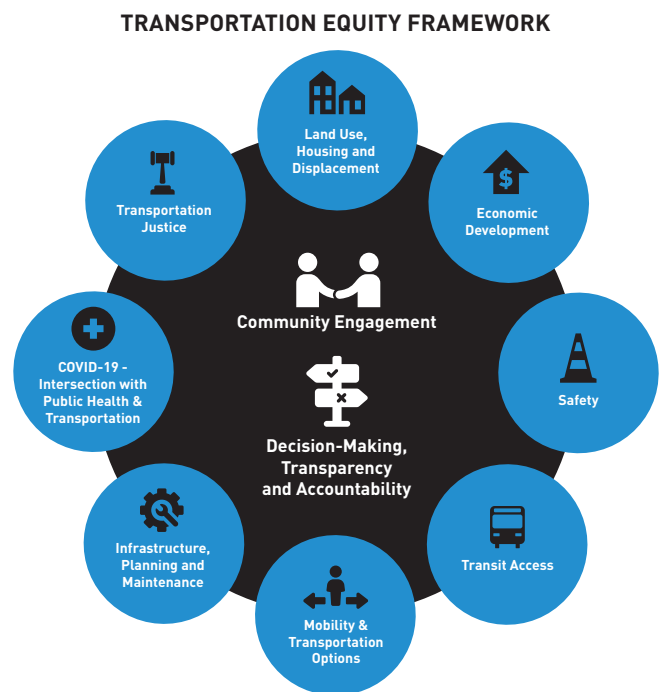


Figure 8. Transportation Equity Framework categories

The TEF includes 28 safety-related items that we are advancing in our Vision Zero work and applying as we implement safety programs and projects throughout the city. We have referenced the TEF in the development of the strategies and actions in this document, and we will continue to use the broad values in the TEF and engage with historically underrepresented communities to guide our work.

3.2.3 Climate Change Response Framework

In 2023, we released SDOT’s first [Climate Change Response Framework](#) (CCRF) which captures strategies to decrease our dependence on private gas-powered vehicles and shift towards a more multimodal transportation future through an increased share of people walking, biking, taking transit, and using electric vehicles, with safe facilities to support these modes (see Figure 9).

Developing an efficient and accessible active transportation and transit network is a cornerstone of the CCRF and is complementary to our Vision Zero strategy. We know that improving

facilities for people outside of vehicles helps to reduce the potential for severe crashes involving the most vulnerable users on our streets, and that the experience of safer facilities encourages active transportation use. Our Vision Zero strategies and actions in this plan align with the CCRF vision, and together, these efforts will help realize the symbiotic benefits of a safer and more climate-friendly transportation system.

3.2.4 Vision Zero Top-to-Bottom Review

The recent [Vision Zero Top-to-Bottom Review](#) provided a comprehensive review of our safety programs, and forms the building blocks for our updated Vision Zero Action Plan. The Top-to-Bottom Review, which was published in February 2023, included five momentum-building safety actions, 12 broad recommendations to improve the effectiveness of our Vision Zero strategies, and 100 specific recommended tactics that are woven into the action plan and which inform further work in aligning our efforts within a Safe System Approach.

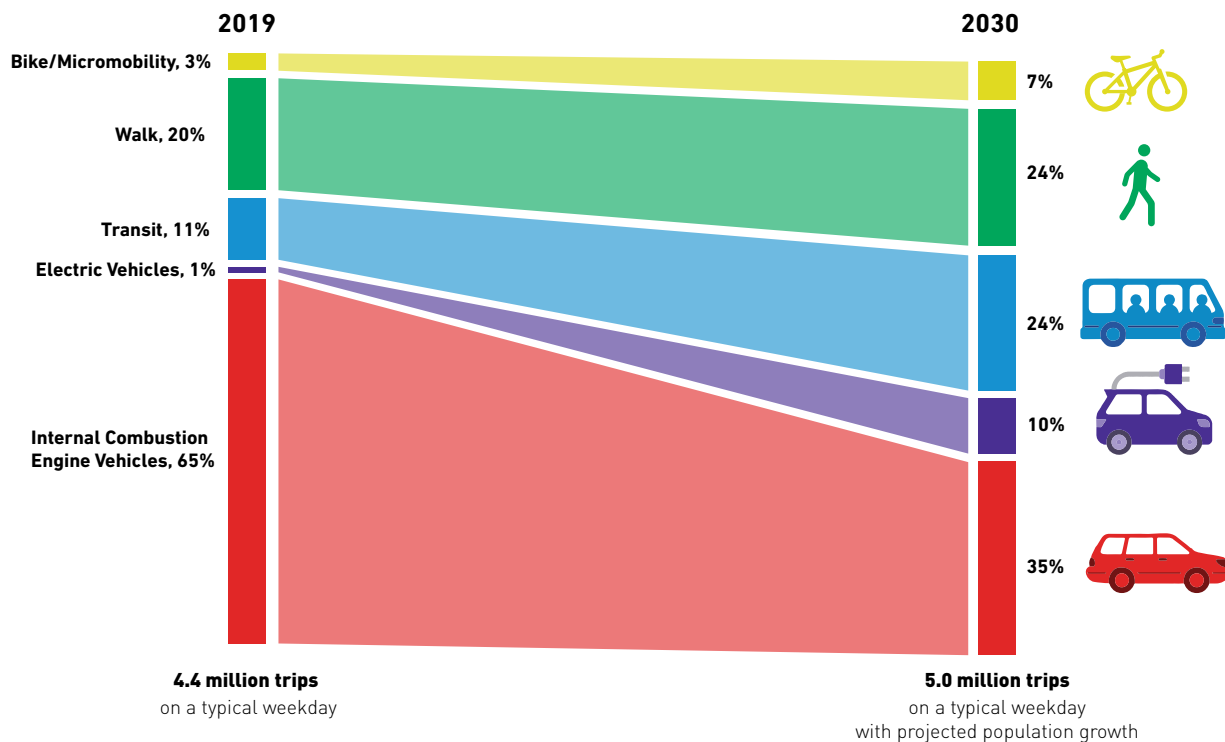


Figure 9. Potential mode share outcomes from the Climate Change Response Framework

In 2023 we jumpstarted our Vision Zero Program by making substantial progress on the five momentum-building actions:

1. Phase in additional No Turn on Red signs at downtown intersections.

As of November 2023, we have implemented no turn on red restrictions at 74 intersections with the highest concentration of signs installed downtown.

2. Accelerating the leading pedestrian interval (LPI) rollout where existing signal systems can support it.

We have installed LPIs at 86 signalized intersections between January and the beginning of December 2023, bringing the total number of LPIs in the city to 628 intersections or 64% of all feasible signalized intersections citywide.

3. Partner with Sound Transit to implement a series of improvements along Martin Luther King (MLK) Jr. Way S to enhance safety for all travelers.

We established a partnership with Sound Transit along MLK Jr Way S and have completed several priority safety improvements throughout this corridor. We will continue this work leveraging the [MLK Jr Way S Safety Project](#) that will construct safety improvements for all travelers between Ranier Ave S and S Judkins St and a [federal SMART grant secured for a series of signal safety enhancements along the MLK Jr Way S corridor](#).

4. Engage the public on automated enforcement to address equity concerns about future expansion in neighborhoods with many fatalities and serious injuries.

Based on an analysis we conducted and feedback from the Transportation Equity Workgroup, we found an overrepresentation of school speed zone cameras in the most disadvantaged areas of the city. To gain a better understanding of how

automated enforcement can be used equitably, we partnered with the Black, Indigenous, and People of Color-focused organizations Whose Streets Our Streets and Lake City Collective to conduct community engagement around automated enforcement. Using the feedback received to date, we prepared a summary of how to expand automated safety cameras in school zones in response to a Council statement of legislative intent and we are beginning to develop a policy to guide this program centered on equitable implementation.

5. Elevate City Traffic Engineer to a new Chief Safety Officer role.

In early 2023, the City Traffic Engineer was officially elevated to the role of Chief Transportation Safety Officer with accountability directly to department leadership. This position is responsible for overseeing the department's safety efforts, including the Vision Zero Program.

The Vision Zero Action Plan is our next step in advancing the groundwork that was established in the Top-to-Bottom Review. These recommendations provided the basis for our broad range of concrete strategies and actions. As we advance the implementation of our Vision Zero strategies, we'll continue using the Vision Zero Top-to-Bottom Review as a guiding document to ensure our program is on track to address safety from the multi-tiered approach recommended in the review.

3.3 VISION ZERO FRAMEWORK

3.3.1 Collaborative Approach to Safety

Safety and Vision Zero goals are considered and planned for in all of SDOT's work. Whether we're repairing sidewalks, keeping our streets clear in extreme weather events, or building new projects to improve mobility, we evaluate every activity we conduct with a safety lens. As we advance our Vision Zero strategy, we'll also be improving the ways we plan and implement our work to better align around the multi-layered Safe System Approach.

One of the improvements is developing our safety work from multiple angles that address the unique, systemic, and collaborative opportunities to increase safety. Using multiple angles is consistent with the Safe System Approach and includes:

1. Responsive approach

The responsive approach uses data from past collisions to inform where and how to plan new safety strategies. This includes reviewing high collision locations, locations of past serious injury and fatal crashes, the High Injury Network, and corridor speed data to develop tailored strategies and treatments that address observed safety patterns.

2. Proactive approach

The proactive approach scales up the delivery of effective safety treatments and deploys them systematically where they will have the greatest impact in reducing speeds and preventing crashes. We use the findings from our Bicycle and Pedestrian Safety Analysis—our innovative model to estimate crash risk for people who walk/roll and bike (see additional details in the appendix)—as

well as research in safety treatments to guide this work. Many of these treatments, such as leading pedestrian intervals, can provide positive safety outcomes and work in nearly all contexts. Based on our findings of effective countermeasures, we use our proactive approach to scale up the delivery of these treatments and deploy them systematically citywide.

3. Capital project partnerships

Each of our capital construction projects include safety elements. The Vision Zero Program conducts a safety evaluation of each capital project and contributes additional funding for improvements within project areas that have a high potential to reduce the likelihood of crashes in priority locations. Recent and upcoming projects that have been improved with Vision Zero Program contributions include the [MLK Jr Way Safety Project](#), the [15th Ave W/NW & Ballard Bridge Paving and Safety Project](#), the [Lake City Way Corridor Project](#) in partnership with WSDOT’s planned repaving of the corridor, and the [Aurora Ave N near-term corridor improvements](#) in partnership with King County Metro and WSDOT.



Figure 10. No Turn on Red restrictions, protected left turns, and new pavement markings with bus only lanes was added to the intersection of Broadway & E Olive Way—an identified high collision location—to reduce conflicts between turning movements and people walking and rolling.

Based on the recommendations from the Vision Zero Top-to-Bottom Review, we will be improving this process by updating SDOT's Complete Streets review process to include additional speed and safety evaluations during each capital project's scoping phase. This will allow us to incorporate baseline proactive safety treatments into every major capital project and review crash, speed, and Bicycle and Pedestrian Safety Analysis data to determine whether additional treatments are recommended.

3.4 HOW WE PRIORITIZE AND IMPLEMENT VISION ZERO

Our work to end lives lost and seriously injured on our streets is the responsibility of all of our programs, projects, and initiatives. Although we have a dedicated Vision Zero Program that is exclusively focused on aligning our work to achieve this goal, Vision Zero is implemented across all levels and divisions of SDOT as well as in coordination with external partners. As we undertake a new approach to addressing safety

Citywide Speed Limit Reduction

Lowering speed limits throughout the city has been a major effort of our Vision Zero Program. We know that speed is a frequent contributing factor of crashes on our streets and higher speeds result in more severe outcomes if crashes do occur, especially those involving vulnerable users.

To address speeding concerns on our streets, we completed the reduction of speed limits to 25 MPH on most arterial streets in early 2021 with the installation of nearly 2,500 new speed limit signs.

This change came after we conducted a study of lowered speed limits in five urban villages throughout Seattle. Our study showed a 20-40% reduction in crashes along arterial streets that had reduced speed limits and increased speed limit sign density. These results were supported by a [recent Insurance Institute for Highway Safety study](#) which found that Seattle's speed limit reduction alone contributed to a 20% decrease in the odds of an injury crash on downtown arterial streets and an 11% decrease in the odds of an injury crash outside the city center.³

As we implement our Vision Zero approach, we will continue to evaluate opportunities for reducing speed limits in additional locations, including working with WSDOT to decrease speed limits along state routes in Seattle and piloting the reduction of a 20 MPH arterial speed limit on streets with supportive contexts. We are also employing multiple traffic calming tools to physically reinforce slower speeds on streets, such as narrowed and reduced travel lanes, retimed traffic signals, and speed humps and speed cushions.

on our streets, we are committed to developing the department’s culture around Vision Zero and evaluating all of our work with a safety lens. The strategy and action list included in this plan details the near-term steps we are taking to infuse Vision Zero into the department’s processes, operations, and culture.

In addition to supporting these department-wide efforts, our Vision Zero Program has dedicated funds from various local sources (see the “Vision Zero Funding” section below) to construct targeted safety improvements in alignment with our multi-layered framework. This includes implementing safety projects in partnership with larger capital projects, constructing proactive treatments to prevent potential crashes before they occur, and responding to locations that have an existing collision history with focused

treatments to correct crash patterns. To guide our investments, we have developed a prioritization framework that ensures we’re implementing improvements equitably and at locations that realize the greatest safety benefits.

3.4.1 Vision Zero Prioritization Process

As a data-driven initiative, Vision Zero relies on its robust set of collision, speed, safety performance, and risk model data sources as the first step in assessing safety challenges and determining where and how to invest resources (more information about Vision Zero data sources is available in the appendix). The final key step in the process of building a Vision Zero project list is to layer on qualitative data to ensure we’re building projects that align with the diverse needs of communities throughout Seattle.

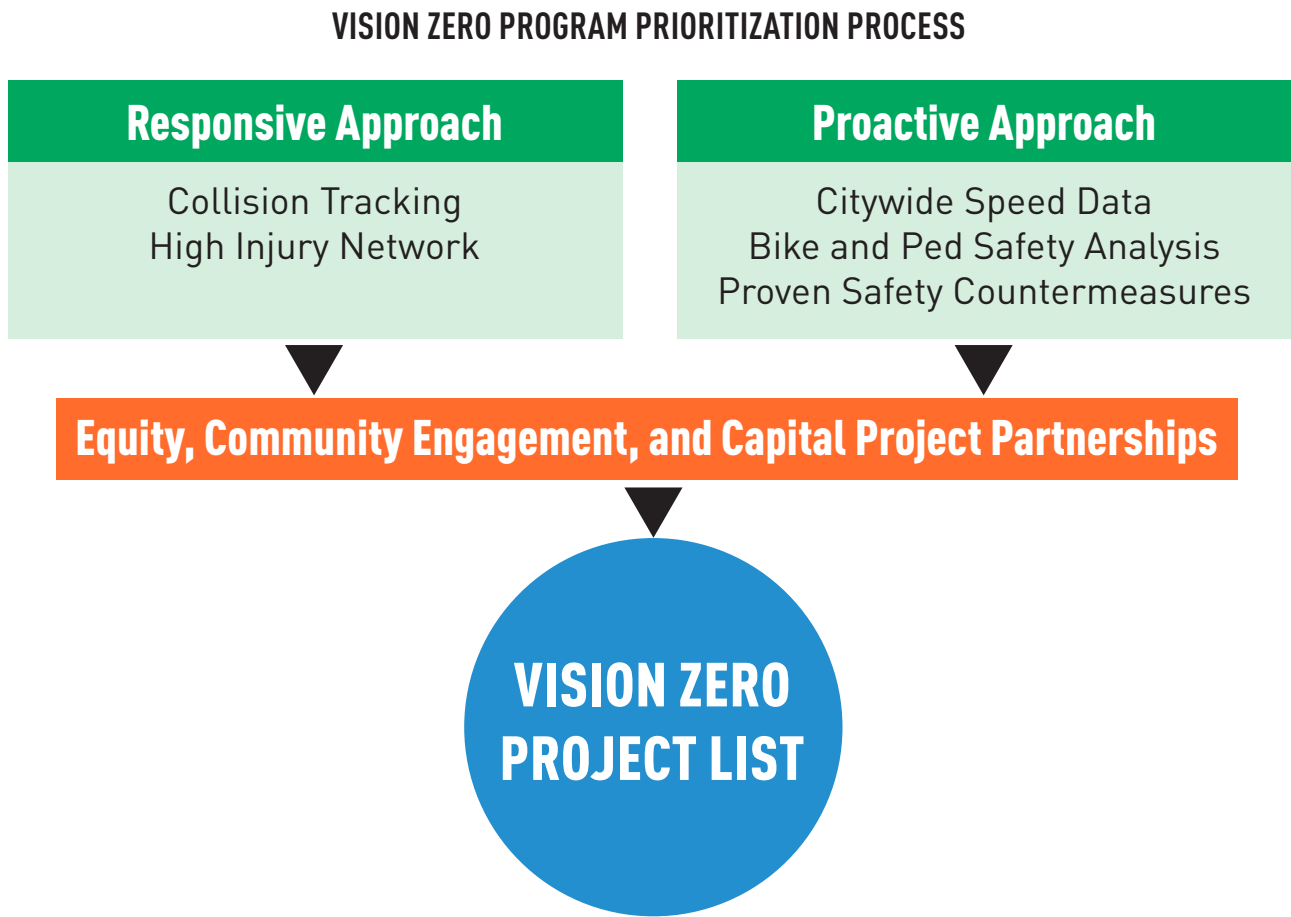


Figure 11. Overview of Vision Zero Program prioritization process

We use the City's [Race and Social Equity Composite Index](#) as an initial evaluation of equity priority and ensure that we're investing in communities that have been historically underserved and underinvested. We also qualitatively assess projects based on community priorities. We select project locations and treatments based on input received from Seattle's residents and businesses, particularly those serving the most disadvantaged and historically underrepresented populations. This includes partnering with community-based organizations across the city to actively collect input on the neighborhoods' transportation safety requests. Once projects are selected, we continue engaging residents, businesses, and community partners throughout the design and construction process to reflect the community's input in the final constructed improvements.

3.4.2 Vision Zero Funding and Future Funding Opportunities

While safety is central to all of our projects and programs, funding dedicated to the Vision Zero Program currently comes from a variety of sources, including the Levy to Move Seattle, the City's Commercial Parking Tax, the Real Estate Excise Tax, and Vehicle License Fees. We also frequently apply for and receive state and federal grants that provide a significant boost in funding for our work. An example of this is the recent \$25.64 million Safe Streets and Roads for All grant award we received from the USDOT. Before factoring in these grants, the baseline funding for the Vision Zero Program has typically been around \$3-5M per year.

The Levy to Move Seattle was historically the only funding source for the Vision Zero Program and still provides a substantial portion of our funding. Other sources have recently been added to support our Vision Zero efforts. While this levy expires at the end of 2024, the [transportation levy renewal proposal](#) would provide a sustainable ongoing funding source for our programs, including our Vision Zero Program, and would be scaled to deliver the strategies and actions identified in this plan. The increased funding the future levy would provide to Vision Zero would allow us to more widely deploy our proactive safety treatments and treatments to control speeding. It would also expand our ability to respond to emerging safety needs on high collision corridors and at spot locations and effectively partner with other programs to ensure our capital projects are improving safety for all users. This means that we can more thoroughly address safety on key streets that see the highest concentration of safety concerns, such as Rainier Ave S, Aurora Ave N, and MLK Jr Way S. The levy renewal proposal would also support broader safety work throughout the department, such as our work to construct new sidewalks and provide safer access to schools and transit.

While we are actively planning our future funding strategy, we are simultaneously advancing several safety actions in 2024. We have established one- and three-year targets for each of the identified action items in this plan and continue making progress on our safety efforts with available resources.

Proactive Pedestrian Safety at Signalized Intersections

Pedestrian crashes account for 5% of all collisions in Seattle but make up 53% of all fatal collisions. We also know that 56% of pedestrian crashes in Seattle occur at intersections and many of these are due to a failure of vehicles yielding to pedestrians.

One way we're proactively addressing intersection safety is through a toolkit of standard countermeasures we systemically use at signalized intersections to reduce crashes involving people who walk and roll. This toolkit includes leading pedestrian intervals, "no turn on red" restrictions, and pedestrian countdown signals.

- **Leading pedestrian intervals (LPIs)**, which provide a 3-7 second head start for people walking before the vehicle signal turns green, have now been installed at over 50% of all signalized intersections in Seattle. At locations where LPIs were installed between 2009-2018, we've seen a 48% decrease in crashes involving turning vehicles and a pedestrian and a 34% reduction in serious injury and fatal pedestrian crashes.
- **"No Turn on Red" restrictions** were identified as a momentum-building action in our Vision Zero Top-to-Bottom Review. Studies show that restricting turns on red can reduce failure to yield to pedestrians by up to 92%.⁴ In response, we began ramping up our installation of turn on red restrictions at signalized intersections in 2023 and so far these restrictions are in place at over 175 intersections in Seattle.
- **Pedestrian countdown signals** provide a countdown indication of the remaining time people have available to cross the street following a signal's pedestrian "walk" phase. This treatment is now standard throughout Seattle and has been shown to result in a 9% reduction in pedestrian collisions at signals.⁵

We will continue systematically phasing in these treatments at intersections throughout the city as well as use additional safety measures in our toolkit where they are feasible, such as protected left turn phasing. This combination of strategies will help us to reduce collisions and ensure people can safely walk and roll at signalized intersections.

4. VISION ZERO ACTION PLAN: NEAR-TERM STRATEGIES AND ACTIONS

The following strategies and actions set the course for making bold improvements to safety on our streets and taking major strides towards achieving our vision of zero fatal and serious injury collisions by 2030. These items represent a shift in our overall Vision Zero strategy as we organize around the multi-layered Safe System Approach and its five core elements: safe streets, safe speeds, safe people, safe vehicles, and post-crash care.

In addition to best practice research, the actions outlined below were developed based on recommendations in the Vision Zero Top-to-Bottom Review, the Seattle Transportation Plan, and the Transportation Equity Framework along with the robust community engagement that informed these efforts.

The strategies and actions are intended to be specific, actionable items that we will address over the coming three-year period between 2024-2026. This list also specifically calls out measurable targets for how we will address these actions throughout 2024. At the end of 2024 the Levy to Move Seattle, one the funding sources for Vision Zero, will expire and a [transportation levy renewal](#) is currently proposed that includes increased funding for Vision Zero work to further advance the strategies and actions in this chapter.

4.1 SAFER STREETS

Our approach to safe streets acknowledges the critical role roadway design plays in providing a safe and comfortable environment for travel for all modes. Safer streets are those that mitigate human mistakes, are self-enforcing by design, encourage safe travel behaviors, protect the most vulnerable users, and reduce potential for high severity crashes.

Lead Agency Acronyms

The lead agencies identified for each action in the list below refer to a range of SDOT divisions, City departments, and partner agencies. The acronyms used for the lead agencies in the tables below refer to the following:

- **TOD** – SDOT Transportation Operations Division
- **PDD** – SDOT Project Development Division
- **CP** – SDOT Capital Projects Division
- **PSMD** – SDOT Pavement, Signs, and Markings Division
- **ROWM & UF** – SDOT Right of Way Maintenance & Urban Forestry Division
- **RS** – SDOT Roadway Structures Division
- **P&P** – SDOT Policy & Planning Division
- **T&M** – SDOT Transit & Mobility Division
- **SU** – SDOT Street Use Division
- **FAD** – SDOT Finance and Administration Division
- **IAP** – SDOT Interagency Programs
- **DO** – SDOT Director’s Office
- **PC** – SDOT People and Culture
- **SCL** – Seattle City Light
- **SFD** – Seattle Fire Department
- **SPD** – Seattle Police Department
- **FAS** – Seattle Finance and Administrative Services
- **OIR** – Seattle Office of Intergovernmental Relations
- **WSDOT** – Washington State Department of Transportation
- **NWSA** – Northwest Seaport Alliance
- **POS** – Port of Seattle
- **ST** – Sound Transit

Key Metrics:

- ↓ Decrease in number of fatal and serious injury collisions.
- ↓ Decrease in number and rate of total collisions.
- ↓ Decrease in number and rate of collisions involving people walking, rolling, and biking.
- ↑ Increase in percentage of trips that use walking, rolling, biking, and transit as the primary mode of travel.

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
<p>Jumpstart efforts to improve safety for people walking, rolling, and biking in equity-priority areas through the efficient delivery of the Safe Streets and Roads for All projects. These include new sidewalks, traffic calming, flashing beacons, protected bike lanes, leading pedestrian intervals, and ADA ramps and accessible push buttons along high-crash corridors in the Rainier Valley, SODO, Downtown, and the University District.</p>	<p>Complete the delivery of the Safe Streets for All projects that intersect with existing projects from a variety of sources (i.e., Sound Transit, PSMD, TOD, private development) that are currently in various stages of design and permit approval phases.</p>	<p>Complete the coordination and delivery of Safe Streets for All projects that overlap with existing projects occurring throughout the city.</p>	<p>TOD, CP</p>	<p>2.3.8</p>
	<p>Complete early first phase implementation of high-priority Safe Streets for All projects connecting to transit by leveraging partnerships with existing SDOT programs.</p>	<p>Complete the design of all Package 1, early-delivery Safe Streets for All projects.</p>	<p>TOD, CP</p>	<p>2.3.8</p>
	<p>Advance all Safe Streets for All projects into their construction phase using the funds awarded from the USDOT’s Safe Streets for All grant.</p>	<p>Advance planning and early-phase design work for Packages 2 and 3 of the Safe Streets for All projects.</p>	<p>TOD, CP, PDD</p>	<p>2.3.8</p>
<p>Accelerate the widescale implementation of research-backed intersection safety improvements.</p>	<p>Install 250 leading pedestrian intervals at signalized intersections citywide to improve pedestrian visibility and reduce conflicts with turning vehicles.</p>	<p>Add leading pedestrian intervals to 100 signalized intersections.</p>	<p>TOD</p>	<p>2.3.2</p>

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
Accelerate the widescale implementation of research-backed intersection safety improvements.	Install no turn on red restrictions at 300 signalized intersections throughout the city to reduce the potential for right-turn pedestrian collisions.	Complete no turn on red restrictions at 100 intersections.	TOD	2.3.2, 2.3.3
	Install new protected left turn phasing at 15 key signalized intersections to reduce conflicts with oncoming vehicle, pedestrian, and bicycle traffic.	Add protected left turn phasing to 5 signalized intersections and develop a priority list of protected left turn phasing based on left turn crash patterns.	TOD	2.3.2
	In coordination with Seattle City Light, install roadway and intersection lighting where it is determined to be deficient along High Injury Network corridors and intersections to improve visibility during hours of darkness.	Re-evaluate and update street lighting guidelines according to best practices.	TOD, SCL	
	Add intersection daylighting to 36 key intersections to prevent parked vehicles from obstructing visibility at intersections.	Install intersection daylighting on the 12th Ave S corridor and priority corridors on the High Injury Network. Develop a standard practice to “daylight” intersections when other capital projects and maintenance work occurs.	TOD	2.3.2, 2.3.5

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
Accelerate the widescale implementation of research-backed intersection safety improvements.	Develop guidelines to inform the effective application of turning movement traffic calming, such as hardened centerlines, turn wedges, and truck aprons, and continue installing these treatments to reduce turning speeds into adjacent crosswalks.	Design hardened centerlines for 6 new intersections along the Aurora Ave N corridor.	TOD, PDD	2.3.2, 2.3.6
Accelerate the expansion of dedicated pedestrian spaces and provide more frequent, predictable, accessible, and convenient crossings of busy arterials using design treatments that enhance safety.	Adopt an update to Seattle’s Enhanced Pedestrian Crossing Policy and Pedestrian Crossing Design Guide to provide clear guidelines for pedestrian and trail crossing spacing with context-sensitive enhancements that account for safety, accessibility, and pedestrian convenience.	Develop and adopt the next update to the Enhanced Pedestrian Crossing Policy. Test the crossing treatment recommendations in the draft Pedestrian Crossing Design Guide.	PDD, TOD	2.3.4, 2.3.10
	Install additional blocks of new sidewalks and walkways on streets currently missing dedicated spaces for people who walk.	Construct 27-40 blocks of new sidewalks or walkways.	PDD	2.3.10
	In coordination with Seattle City Light, provide pedestrian-scale lighting along corridors to make people walking more visible to people driving vehicles and to increase personal safety, where funding allows.	Advance new pedestrian scale lighting in the Chinatown-International District into its design phase.	TOD, PDD, P&P, SCL	6.1.4

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
Accelerate the expansion of dedicated pedestrian spaces and provide more frequent, predictable, accessible, and convenient crossings of busy arterials using design treatments that enhance safety.	Pilot new types of low-traffic zones to reduce the volume of traffic and conflict points in areas with high pedestrian traffic.	Begin development of the implementation and funding plan for the Low-Pollution Neighborhoods Pilot, which may include new low-traffic zones.	P&P, PDD	
	Install pedestrian crossing enhancements at additional intersections with a focus on improving crossings connecting to trails, schools, light rail stations, frequent transit stops, parks, and destinations within Urban Centers and Urban Villages.	Construct 16 new enhanced crossings at priority intersections.	PDD, TOD	2.3.4, 6.2.4
Advance transit safety improvements that support safe operation while protecting people walking, rolling, biking, and driving from conflicts with these vehicles.	Implement streetcar and track safety improvements where needed and evaluate opportunities for applying lessons learned from Streetcar Safety and Operations Audit to broader SDOT safety efforts.	Develop a list of streetcar and track safety recommendations based on the forthcoming 2024 Streetcar Safety and Operations Audit.	T&M	2.3.11
	In coordination with King County Metro, implement 10 to 20 spot improvements at intersections and bus stops that enhance the safe operation of buses and reduce conflicts with other modes of travel.	Install 5 safety-focused transit spot improvements at intersections identified by bus operators.	T&M	

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
<p>Develop an industrial-focused Vision Zero initiative that focuses on improving safety for all users in and around the City's Manufacturing and Industrial Centers and accounts for the needs of commercial vehicles and goods movement.</p>	<p>Upgrade as many rail crossings as possible in coordination with freight, passenger, and light rail partners to improve safety for people walking, rolling, biking, and driving as well as train operators and passengers.</p>	<p>Develop a priority list of rail crossing improvements. Install advance rail warning signs and markings along E Marginal Way S from Diagonal Ave S to 16th Ave S.</p>	<p>TOD</p>	
	<p>Complete improvements for the Terminal 5 Quiet Zone, including closing driveways near Terminal 5, building new traffic signals, upgrading safety equipment at railroad crossings, and providing a new pedestrian pathway on the north/east side of W Marginal Way SW.</p>	<p>Complete the construction of the Terminal 5 Quiet Zone project.</p>	<p>CP, PDD</p>	
	<p>Complete construction of the North Segment of the E Marginal Way Corridor Improvements Project to improve safety for all users on this corridor while enhancing goods movement.</p>	<p>Begin construction of the North Segment of the corridor improvements.</p>	<p>CP</p>	

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
<p>Develop an industrial-focused Vision Zero initiative that focuses on improving safety for all users in and around the City's Manufacturing and Industrial Centers and accounts for the needs of commercial vehicles and goods movement.</p>	<p>Pursue a study of a potential railroad crossing elimination or separation for S Holgate St between Occidental Ave S and 3rd Ave S along with potential mitigation strategies. This study will evaluate access for people walking and biking as well as other safety improvements with an emphasis on at-grade railroad crossings.</p>	<p>Begin study of the S Holgate St crossing and associated access and safety mitigation measures.</p>	<p>TOD</p>	
	<p>In partnership with the University of Washington's Urban Freight Lab, study the pilot Freight and Bus (FAB) lane that will be installed with the forthcoming Route 40 project.</p>	<p>Prepare scope for the one-year study of the Route 40 FAB lane as the project is installed.</p>	<p>TOD</p>	
	<p>Continue piloting delineation-enhanced railroad crossings to reduce vehicle turns onto mainline railroad tracks and improve safety for both drivers and train operators.</p>	<p>Plan for additional locations for delineation-enhanced rail crossings in coordination with rail partners.</p>	<p>TOD</p>	

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
Expand Seattle's network of safe and comfortable bike facilities designed for riders of all ages and abilities.	Complete new protected bike lanes and neighborhood greenways to facilitate safe and comfortable all ages and abilities bike connections to key destinations.	Construct 2.77 miles of protected bike lanes and between 7-11 miles of neighborhood greenways throughout the city.	PDD, CP	2.3.9
	Expand the Even Better Bike Lane Program to additional existing bike facilities in the city. This program will upgrade existing bike lane barriers and intersection and driveway treatments with the goal of improving protection and visibility for people biking.	Construct 2.1 miles of protected bike facility upgrades	PDD	2.2.5
	Expand permanent Healthy Streets as a way of providing low traffic and low stress connections to common destinations for people walking, biking, and rolling, regardless of age or ability.	Construct 6.5 miles of new permanent Healthy Streets.	PDD	
	Develop an updated plan to improve the safety of bridge expansion joints, railings, and barrier types for people biking, rolling, and walking.	Design expansion joint upgrades on the Campus Parkway Overpass and the SW Admiral Way Bridge. Install robust bike lane buffers on the Airport Way S Bridge with the Georgetown to Downtown Safety Project.	RS, PDD	2.2.7

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
Expand Seattle’s network of safe and comfortable bike facilities designed for riders of all ages and abilities.	Facilitate school connections in at least 6 of the planned all ages and abilities bike safety projects to advance the City’s goal of serving all public schools with an all ages and abilities bike connection.	Complete an analysis to determine gaps in bike facilities serving schools and construct new all ages and abilities connections to 3 schools and neighborhood greenway extensions at 6 additional schools.	PDD	
Develop a process to integrate safety improvements into all transportation capital projects.	Explore opportunities to enhance and expand safety improvements constructed by external agencies and private developers through Street Improvement Permit (SIP) projects.	Begin conversations on how to identify location-specific safety needs with SIP projects and the feasibility of partnering with external entities to construct safety improvements as part of these projects.	TOD, SU	
	Complete the development of the third phase of the Bicycle and Pedestrian Safety Analysis to identify proactive walking and biking safety needs.	Complete the third phase of the Bicycle and Pedestrian Safety Analysis and develop a priority list of projects and implementation strategy based on results of the analysis.	TOD	6.3.1
	Require a capital project review process to include speed reduction and safety improvements for vulnerable roadway users early in the project scoping process as part of an update to SDOT’s Complete Streets Checklist. Ensure the budget for these projects is sufficient to incorporate Vision Zero best practices.	Update the Complete Streets Checklist to include updated safety data and new requirements to include safety evaluations during the project scoping phase in consultation with SDOT’s Vision Zero team.	TOD, P&P, PDD	1.1.1, 1.1.2, 1.2.2, 3.1.2, 5.3.3

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
<p>Advance plans, policies, and standard practices that support safe facilities and operations in coordination with external projects.</p>	<p>Develop station access plans for future light rail stations and enhance the experience and quality of existing facilities that connect people walking, biking, and rolling along and across major transit corridors.</p>	<p>Develop a priority list of station access projects for the West Seattle Link Extension stations that can be supported with available station access funding from Sound Transit.</p>	<p>ST, PDD</p>	<p>6.2.3</p>
	<p>Develop a plan with WSDOT to address safety issues at freeway on- and off-ramps connecting to City streets.</p>	<p>Begin coordination with WSDOT on existing ramp upgrade plans.</p>	<p>TOD, IAP, WSDOT</p>	<p>6.2.1</p>
	<p>Review implementation of SDOT Director’s Rule for maintenance of pedestrian and bicycle access in construction zones and develop recommended changes and recommendations for implementation of the Director’s Rule for SDOT capital projects.</p>	<p>Adopt an update to the Traffic Control Manual with a focus on pedestrian and bicycle access around work zones.</p>	<p>TOD, SU, CP</p>	<p>1.1.7</p>
<p>Support culture change around street safety and secure buy-in for Vision Zero throughout the City.</p>	<p>Build the capacity of the Vision Zero team as departmental ambassadors for cultural change around Vision Zero. Have the Vision Zero team lead regular tailored trainings for all internal divisions on how to incorporate Safe System principles into SDOT’s work.</p>	<p>Begin conducting trainings on Safe System principles with internal SDOT divisions and teams.</p>	<p>TOD</p>	<p>5.1.1, 5.1.3, 5.1.5, 5.1.6</p>

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
Support culture change around street safety and secure buy-in for Vision Zero throughout the City.	Document roles and expectations for defined matrix teams as well as individual engineers and planners in the Vision Zero decision-making process. Empower subject matter experts to make key decisions on safe street designs, consulting with others when necessary for support.	Begin updates to the project development process that will clarify project scoping and decision-making roles.	PDD, CP	2.1.4, 2.1.5, 5.2.1, 5.2.8
	Incorporate Vision Zero as part of the hiring process. State transportation safety as a priority in job postings and consider asking about commitment to, and understanding of, Vision Zero as part of hiring processes throughout SDOT.	Work with PC to develop a framework for integrating Vision Zero into the department's hiring process.	PC	5.1.4
Enhance the collection and quality of transportation and safety data to provide improved insights into collisions and safety issues.	Collect travel speed data citywide and use this data to develop and prioritize work efforts.	Fund the collection of citywide speed data analytics through private vendor software to inform the prioritization of corridors for future traffic calming treatments.	TOD	
	Develop a process for collecting and evaluating Seattle Fire Department's collision response data, which may or may not overlap with SPD's collision records.	Begin conversations with Seattle Fire Department on collecting location-based collision response information.	TOD, SFD	6.1.2

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
Enhance the collection and quality of transportation and safety data to provide improved insights into collisions and safety issues.	Evaluate processes for improving the quality and understanding of micromobility safety data, including collaborating with external research teams as appropriate to further analyze micromobility safety trends.	Develop a report and begin an annual reporting cadence for shared micromobility usage, including safety analyses.	T&M	
	Use new artificial intelligence-based data sources to monitor safety conditions (e.g., “near misses”) at key locations and inform proactive safety projects.	Upgrade 4 intersections on MLK Jr Way S with AI-based video detection and analytics using funding provided by a USDOT SMART grant.	TOD	
Focus maintenance resources on preserving assets that support safety goals with a particular emphasis on vulnerable road users.	Continue proactively remarking crosswalks and refreshing roadway lane striping to provide clear markings on arterial streets.	Remark 1,500 crosswalks and 560 lane miles of lane striping.	PSMD	3.2.1
	Identify new resources and processes to improve proactive maintenance of sign assets and “paint-and-post” installations that ensure safety for all road users.	Begin evaluation of new funding sources and processes to proactively maintain sign and markings assets beyond crosswalks and channelization.	TOD, PSMD	3.2.1

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
Focus maintenance resources on preserving assets that support safety goals with a particular emphasis on vulnerable road users.	Continue to proactively and reactively prune trees in the public right of way to improve safety, lighting, and visibility. Explore opportunities to expand tree pruning efforts and prioritize pruning along priority safety corridors.	Prune at least 4,000 trees in the right of way.	ROWM & UF	2.2.6
	Repair sidewalks to reduce defects on the sidewalk network and improve accessibility for people walking and rolling.	Complete 10 blockfaces of sidewalk repair and 500 spot repair locations.	PSMD	3.2.1
Advance roadway safety improvements along the City’s most crash-prone corridors and spot locations.	Complete the planning process and begin design for a transformative re-envisioning of Aurora Ave N that prioritizes safety and mobility for all modes of travel.	Complete the initial planning phase of the Aurora Ave Project and advance preferred alternatives into the corridor-wide analysis process. Install near-term improvements on the corridor that respond to recent collision patterns involving vulnerable users.	PDD, CP	2.3.1, 6.2.1
	Perform high-collision location reviews on an annual basis and allocate funding to treatments to be more responsive to emerging issues.	Complete a timely review of 2023 high collision locations and develop a list of priority improvements that respond to collision patterns at these locations.	TOD	5.3.1

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
Advance roadway safety improvements along the City's most crash-prone corridors and spot locations.	Complete key safety and mobility improvements in Beacon Hill as part of the Beacon Ave S and 15th Ave S Safety Project.	Begin construction on the Beacon Ave S and 15th Ave S Safety Project	CP	
	Install proactive safety treatments at 50 intersections throughout downtown that focus on improving pedestrian mobility and reducing vehicle turning movement conflicts.	Install improvements at 13 key intersections downtown to enhance safety and mobility for people who walk.	TOD	
	Install upgrades along the 1st Ave S corridor in SODO that respond to the corridor's history of crashes that lead to fatalities and serious injuries, address persistent speeding, improve facilities for active travel modes, and decrease potential conflict areas.	Complete planning for corridor improvements and priority spot projects on 1st Ave S.	TOD	
	Complete improvements along the Airport Way S corridor in SODO that address the need for safer pedestrian crossings between transit and health services and reduce persistent speeding along the corridor.	Complete planning for the first phase of corridor safety improvements on Airport Way S (S Holgate St to S Massachusetts St).	TOD	

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
Advance roadway safety improvements along the City's most crash-prone corridors and spot locations.	Construct focused safety improvements along the 4th Ave S corridor in SODO to address the corridor's history of severe crashes that lead to fatalities and serious injuries, encourage slower speeds, and provide safer facilities for people who walk and take transit.	Construct improvements to the painted median island on 4th Ave S between S Holgate St and S Massachusetts St and expand the concrete bus loading zone on the northeast corner of 4th Ave S & S Holgate St.	TOD	
	Complete the Georgetown-Downtown Safety Project to provide a safe and comfortable route connecting the Duwamish Valley neighborhoods to downtown.	Complete construction of the Georgetown-Downtown Safety Project.	CP	
	Construct arterial corridor safety improvements in Rainier Beach to continue addressing ongoing crash patterns and respond to community concerns.	Complete early-win intersection safety improvements at Rainier Ave S & S Sturtevant St and Rainier Ave S & 54th Ave S.	TOD	
	Complete the MLK Jr Way Safety Project north of Rainier Ave S and install corridor-wide safety treatments throughout the MLK Jr Way S corridor, including the installation of smart-sensing traffic signals that improve operations for all modes and provide analytics on near-miss collisions.	Complete construction of the MLK Jr Way Safety Project from Judkins Park Station to Rainier Ave S.	PDD, TOD, CP	6.2.3

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
Advance roadway safety improvements along the City's most crash-prone corridors and spot locations.	Add a signal battery backup system to the MLK Jr Way S corridor to ensure safe operations during power outages. Evaluate and prioritize the safety benefits of signal battery backup along other HIN corridors.	Complete planning for a battery backup prototype at 2 intersections along MLK Jr Way S.	TOD	6.2.3
	Construct safety improvements along the N 130th St/NE 125th St corridor to encourage slower speeds and safe access to the key transit facilities, schools, and parks located along this corridor.	Complete the design of the N 130th St Vision Zero corridor improvements between Stone Ave N and 1st Ave N.	TOD, PDD	
	Evaluate and develop corridor safety projects on additional key High Injury Network arterials that focus on reducing vehicle speeds and improving safety facilities for the most vulnerable users.	Install corridor safety spot improvements on 12th Ave S and begin construction of safety enhancements on Denny Way, including new curb bulbs, "no turn on red restrictions," and improvements to support a future crossing signal installation. Identify a list of additional safety corridors for future investment based on equity, crash history, and speed trends.	TOD	2.3.1

4.2 SAFER SPEEDS

Speed is a leading determinant of the severity of crashes. We know that a pedestrian’s chance of surviving a crash decreases significantly with faster vehicle speeds. Our approach to safer speeds relies on setting safe and context-sensitive speed limits, designing our streets for slower travel speeds, and exploring the equitable use of traffic safety cameras where they’re most needed.

Key Metrics:

- ↓ Decrease in speeding on arterial streets.
- ↓ Decrease in high-end speeders (people driving 10+ MPH over the posted speed limit).

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
Continue to manage speed limits on streets throughout the city and reduce where need to enhance safety.	Partner with WSDOT to evaluate speeds and roadway designs on state routes within the city. Work to adjust designs and reduce speed limits to encourage slower vehicle speeds.	Reduce speed limits on 0.7 miles of Aurora Ave N (around the Green Lake Outer Loop).	TOD, WSDOT	2.1.3, 6.2.1
	Pilot the reduction of speed limits to 20 MPH on arterial streets with supportive land use and roadway contexts to reduce the potential for collisions in high pedestrian traffic areas.	Identify context guidelines and pilot locations for 20 MPH arterial speed limits.	TOD	2.1.3
	Continue reducing speed limits on arterial streets where warranted by corridor speed, context, and collision data.	Plan for the reduction of speed limits on the N 130th St corridor west of I-5 from 30mph to 25mph as part of the N 130th St Vision Zero corridor improvements.	TOD	2.1.3

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
Encourage slower vehicles speeds on priority streets through the use of traffic calming.	Install speed cushions or other traffic calming treatments on 20-25 arterial corridors throughout the city that have a history of high speeds or collisions.	Complete speed cushion installation on Seward Park Ave S.	TOD	2.3.2
	Install traffic calming or narrowed travel lanes on 100 non-arterial blocks in partnership with Safe Routes to School, Neighborhood Greenway, and Home Zone projects to reduce speeding and improve the experience of people who walk.	Install traffic calming or lane narrowing on at least 40 non-arterial blocks	PDD	
	Pilot narrowed 10-foot lane widths on arterial streets with a history of speeding and collisions to encourage slower vehicle speeds on these corridors.	Identify potential locations to pilot narrowed arterial lane widths.	TOD	
	Implement new context-appropriate rechannelization on High Injury Network arterials to reduce conflicts and encourage people driving to travel the posted speed limit while accommodating mobility needs.	Complete an analysis to identify multi-lane arterial streets with a history of speeding and angle crashes that could be potential candidates for context-sensitive rechannelization.	TOD	2.3.1, 2.3.2

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
Encourage slower vehicles speeds on priority streets through the use of traffic calming.	Optimize signal progression timing along 15 key arterial corridors to match posted speed limits and encourage slower vehicle speeds where feasible.	Complete signal timing optimization on 5 arterial corridors and retime signals to match posted speed limits where feasible.	TOD	2.3.2
	Begin installing roundabouts at arterial intersections to slow the speed of traffic through the intersections and reduce the potential for high severity crashes.	Identify 2-3 feasible locations to install new roundabouts at arterial intersections where it would improve safety.	TOD	
	Pilot the use of new traffic calming strategies that provide physical reinforcement of slower speeds, such as horizontal travel lane shifts and edge lane roads.	Install 3 new arterial crossing improvements that include horizontal travel lane shifts for traffic calming.	TOD, PDD	2.3.2

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
Equitably expand traffic safety cameras on high-speed and crash-prone corridors as a tool to encourage safe vehicle speeds, safe driving behavior at intersections, and transit reliability.	Develop a comprehensive policy to identify and implement new traffic safety camera measures that prioritize locations and penalties based on safety, equity, and inclusive community input. Collaborate with the Office of Equity and Economic Inclusion, Transportation Equity Workgroup, and community-based organizations to provide input on this policy.	Complete a draft traffic safety camera policy and begin planning for new cameras as directed.	TOD, DO, SPD	2.1.3, 4.1.1, 4.1.2, 4.1.3, 4.1.4, 4.1.5, 4.1.6, 4.2.1, 4.3.1, 6.1.5
	Explore and, where feasible, implement new automated speed safety cameras in alignment with the forthcoming comprehensive policy.	Initiate expansion of new school zone speed safety cameras locations as identified in the 2023 Statement of Legislative Intent on automated camera enforcement .	TOD, SPD	2.1.3, 4.1.1

4.3 SAFER PEOPLE

The Safer People element focuses on encouraging people who use our transportation system to practice safe and responsible travel behaviors and empowering people to engage with us on how we can advance safety on their streets. We are addressing these objectives through our safety education and encouragement campaigns and by planning for ongoing, inclusive community conversations around safety.

Key Metrics:

- ↑ Increase in the number of safety education and engagement activities.

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
Engage the City’s most vulnerable road users in the planning of safety improvements and design and operate facilities that incorporate the needs of these users.	Collaborate with and fairly compensate community-based organizations serving BIPOC and vulnerable communities to collect stories and narratives related to mental and physical safety. Use these stories to prioritize and fund projects and programs that directly address identified community safety needs.	Continue to engage community-based organizations serving BIPOC and vulnerable communities on a project-level basis with major capital projects and plan efforts to collect stories and input that address community-identified safety needs.	P&P, PDD, TOD	
Improve safety data transparency and use community members suggestions to inform the prioritization of safety upgrades.	Launch a Vision Zero dashboard to provide real-time updates of key safety statistics that is accessible to the public.	Complete development of a Vision Zero dashboard and post the dashboard on the SDOT website.	TOD	

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
Implement and expand safety education and encouragement campaigns with a focus on maximizing the safety outcomes of these efforts.	Develop a program to engage with communities that are disproportionately impacted by collisions on Seattle’s streets in the implementation of educational campaigns, such as through partnerships with housing providers, service organizations, and BIPOC-led organizations.	Build upon community engagement conducted during the development of the Seattle Transportation Plan to connect the Vision Zero team with community-based organizations representing those most disproportionately impacted by collisions and develop effective strategies to engage these communities.	DO, TOD	6.3.2, 6.3.3
	Further develop and expand the Safe Routes to School program’s walk and bike safety education and encouragement efforts.	Continue the Let’s Go Safety Education Program in 3rd-8th grade Physical Education classes and provide support to schools through the Seattle Public Schools Safe Routes to School Program Coordinator, mini-grant, and walking and biking incentive packages.	PDD	6.2.5
	Develop an education and encouragement strategy that focuses efforts on addressing the travel behavior contributing most frequently to fatality and serious injury collisions. This strategy should include a process for measuring the impact of these education efforts on safe travel behavior.	Continue citywide education and encouragement efforts that encourage safe travel behavior, such as driving sober and avoiding distracted driving. Begin development of new strategies responding to recent collision trends.	DO, TOD	5.3.7

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
Implement and expand safety education and encouragement campaigns with a focus on maximizing the safety outcomes of these efforts.	Support the rail industry’s Operation Lifesaver safety education efforts by including this program’s materials as part of the City’s digital and/or in-person educational campaigns.	Begin planning for the support of the Operation Lifesaver initiative.	TOD, DO	
	In partnership with the Port of Seattle and the Northwest Seaport Alliance, develop cooperative educational efforts that focus on safe movement around commercial trucks.	Continue working with the Port of Seattle and Northwest Seaport Alliance to plan for educational efforts that build upon the recent Bike/Truck Road-ee event.	TOD, POS, NWSA	
	Continue e-scooter and micromobility safety education efforts for riders and drivers. This includes partnering with scooter and bike share vendors to encourage helmet use, to safely ride in the dark and wet weather, and to be aware of e-scooters and bikes while driving.	Continue using social media and scooter and bike share vendor partnerships to develop education and encouragement campaigns that promote safe micromobility usage.	T&M	

4.4 SAFER VEHICLES

The size and weight of vehicles, as well as availability of vehicle safety systems, plays a major role in the likelihood and severity of crashes. While most vehicle safety regulations are established by the federal government through the Federal Motor Vehicle Safety Standards, we are working to pilot new safety systems on our own vehicle fleet and set an example for safer vehicles that can help prevent crashes.

Key Metrics:

- ↑ Increase in the number of City fleet vehicles upgraded with safety features to prevent and minimize the impact of collisions.

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
Upgrade City fleet with safety features for City service vehicles.	Pilot new safety features on vehicles procured and used for the City fleet, such as vulnerable road user detection, truck sideguards, and intelligent speed assistance.	Evaluate the feasibility of piloting a vulnerable road user detection system and intelligent speed assistance on select City fleet vehicles. These systems, respectively, can help to improve safety by preventing crashes with people walking, rolling, and biking and by controlling vehicle speeds.	MOD, FAS	5.1.9
	Partner with Seattle Fire Department to establish access requirements that allow for traffic calming and safe street designs while also considering emergency vehicle response times.	Finalize a tiered map of priority Seattle Fire Department response routes and develop a toolkit for traffic calming strategies along these routes.	TOD, SFD	6.1.2

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
Explore opportunities to influence more stringent vehicle safety regulations designed to protect people traveling outside of vehicles.	Develop strategies to influence regulations on vehicle size and weight as well as additional standard safety features, such as truck sideguards, intelligent speed assistance, automatic emergency braking, and improved direct vision standards.	Begin conversations with transportation organizations and the City’s Office of Intergovernmental Relations on strategies for supporting improved vehicle safety regulations.	DO, OIR	6.1.6
	Explore opportunities to maintain local control and permitting authority for autonomous vehicles.	Continue discussing strategies with the City’s Office of Intergovernmental Relations to maintain the City’s local control to regulate autonomous vehicles.	DO, OIR	1.3.1, 6.1.6

4.5 POST-CRASH CARE

Post-crash care focuses on improving the survivability of people involved in crashes with timely access to medical services as well as implementing effective traffic incident management, data collection at the crash site, and effective follow-up responses to crashes. While most post-crash care relies on the operations of emergency medical service (EMS) providers, we are partnering with Seattle Fire Department to track emergency vehicle response times and working with our partners to support improved data collection and reporting efforts.

Key Metrics:

Improved tracking of emergency vehicle response times.

Strategies	3-Year Action	2024 Target	Lead Agency	Top-to-Bottom Review Recommendation
Develop traffic signal and roadway improvements that consider emergency vehicle response times.	Implement traffic signal technology upgrades for emergency vehicles on new corridors, such as emergency vehicle preemption and “green waves” for emergency vehicles.	Pilot a new emergency vehicle signal priority system on NE Northgate Way using GPS based technology and cellular communication.	TOD, SFD	6.1.2
Partner with emergency responders to improve the quality of data collection.	Continue to work with Seattle Police Department and Seattle Fire Department to improve the collection of detailed information about crash context, location, and contributing factors.	Work with Seattle Fire Department to improve the collection and reporting of crash data that is not captured by Seattle Police Department records and use this data to better understand crash patterns.	TOD, SFD	6.1.2
	Partner with Seattle Fire Department to continually track emergency vehicle response times.	Begin conversations with Seattle Fire Department to collect data on emergency vehicle routes and response times along corridors to identify opportunities for improvements.	TOD, SFD	6.1.2

5. ONGOING ENGAGEMENT AND TRANSPARENCY

5.1 VISION ZERO DASHBOARD

To promote transparency in our Vision Zero progress, we will be building out a data dashboard in 2024 that will serve as a tool to provide clear and accessible information about current crash trends and the actions we are taking to address these. The data dashboard will offer an online interactive platform that will allow anyone to view and explore real-time safety trends and project data to better understand our progress on achieving our Vision Zero goals and addressing our actions. This tool will help keep us accountable in our bold approach towards improving safety on our streets and supporting equitable and healthy mobility for all.

5.2 VISION ZERO REPORTING

This Vision Zero Action Plan establishes our strategies and actions that we will undertake between 2024-2026. As we advance these Vision Zero programs, we will continually evaluate our progress on our key metrics and update the public on progress. In addition to our Vision Zero dashboard, we'll continue reporting our trends, projects, and action items to the communities we serve. Our progress will also be tracked in upcoming reports and documents as we continue to work towards our goal of zero lives lost or seriously injured on our streets by 2030.

5.3 COMMUNITY ENGAGEMENT

We are committed to engaging communities as we implement the broad range of strategies and actions identified in this plan. Our engagement work will include collaborating with modal boards, transportation advocates, diverse community-based organizations (including those serving BIPOC and vulnerable communities) as well as the residents and businesses we serve. We will leverage these partnerships to continually collect input on safety priorities as we develop our Vision Zero projects.

We will continue building our close relationships with communities as we implement inclusive project-level outreach to capture community needs during each step of our planning process. We look forward to working with the community as we reach our goal of Vision Zero together.

APPENDIX: THE VISION ZERO CONTEXT AND PRIORITIZATION FRAMEWORK

This appendix offers a deeper exploration into the safety data and collision trends we're experiencing on our streets as well as a more detailed explanation of our data sources, prioritization framework, and engineering toolkit. This information is intended to provide a closer look into the context behind our work and describe how we'll make decisions about where and how to invest our resources as we implement the strategies and actions identified in the plan.

A CLOSER LOOK AT OUR SAFETY DATA

To better understand and address severe crashes on our streets, we continually track data trends that explain where and when crashes are occurring, who is involved in crashes, and the contributing collision patterns. As shown in Figure 12, the highest concentration of serious injury and fatal crashes are happening in South Seattle followed by Downtown and the north end of the city. A deeper dive into this data, which can be seen in our High Injury Network, exposes key corridors within these areas where most crashes are occurring. These include wide, multilane arterial streets such as Rainier Ave S, 4th Ave S, and Aurora Ave N.

Our data also shows that people walking/rolling, and biking comprise a disproportionately high share of serious injury and fatal crashes relative to the percentage of trips made (see Figures 13 and 14). Walking/rolling and biking accounted for 20% and 3% of all trips in Seattle in 2019, respectively. Between 2018 and 2022, however, serious injury and fatal crashes involving people who walk/roll made up 38% of all fatal and serious injury collisions in Seattle, and crashes involving people biking made up 13% of all fatal and serious injury collisions.

We also know that nearly half of the severe crashes on our streets that have occurred during the past five years have taken place during hours of darkness, dawn, or dusk (Figure 15) and that more of these collisions are happening during months with fewer hours of daylight (Figure 16), indicating the need to address safety for travelers during all hours of the day and night.

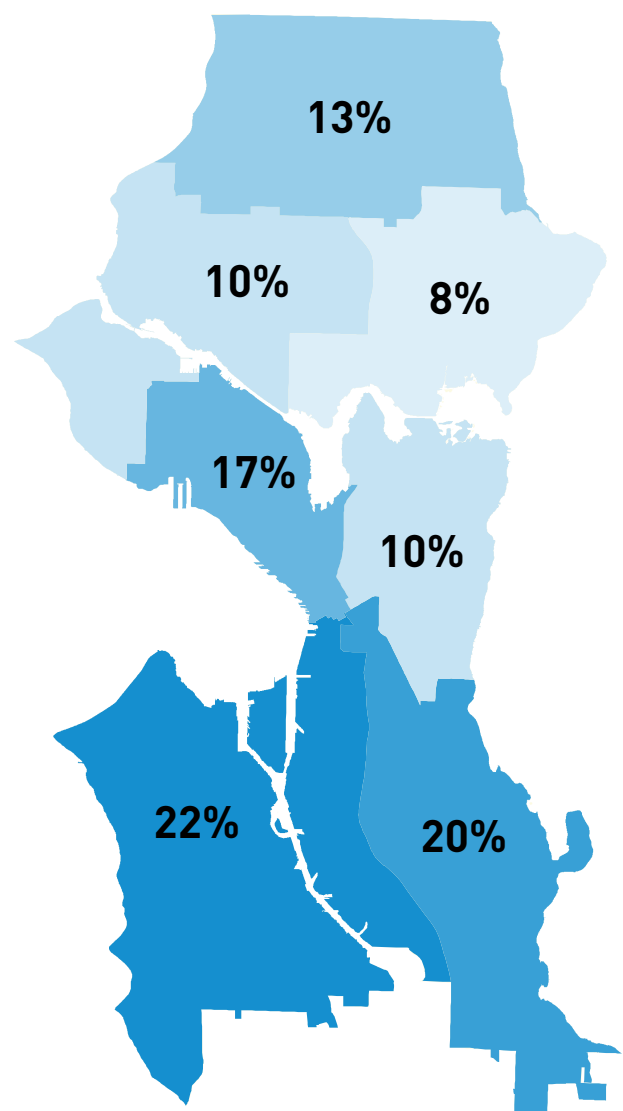


Figure 12. Share of fatal and serious crashes by Council district (using 2024 council district boundaries and 2018-2022 crash data)

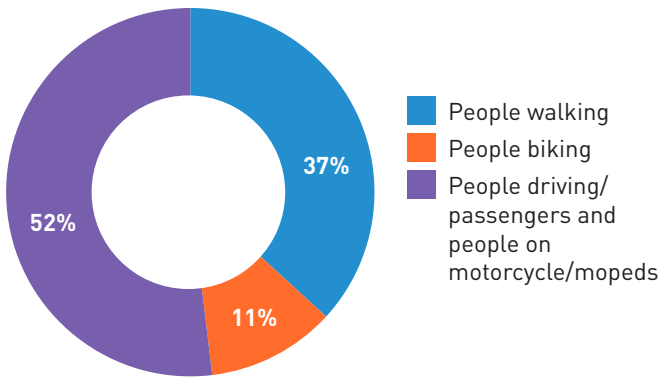


Figure 13. People killed or seriously injured in Seattle crashes by mode of travel (2018-2022)

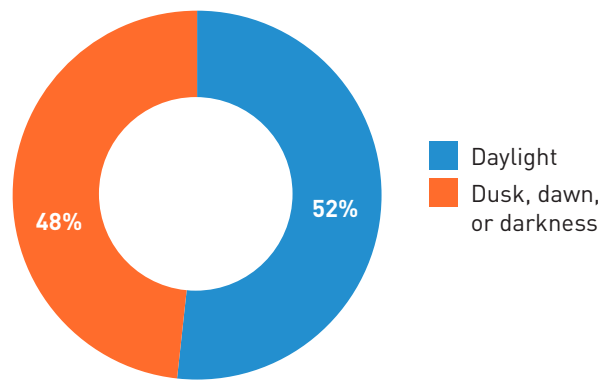


Figure 15. Serious Injury and Fatal Crashes by Time of Day (2018-2022)

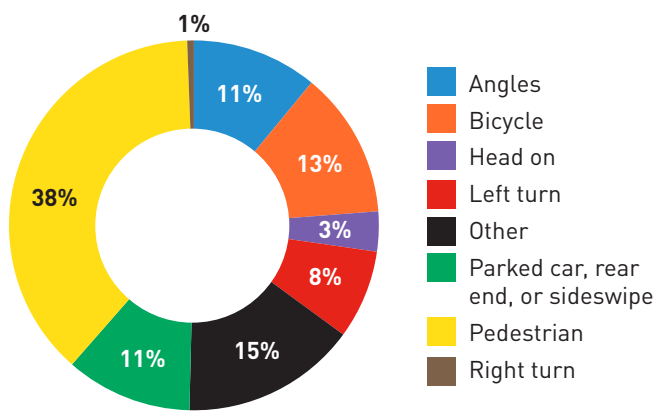


Figure 14. Share of serious injury and fatal crashes by crash type (2018-2022)

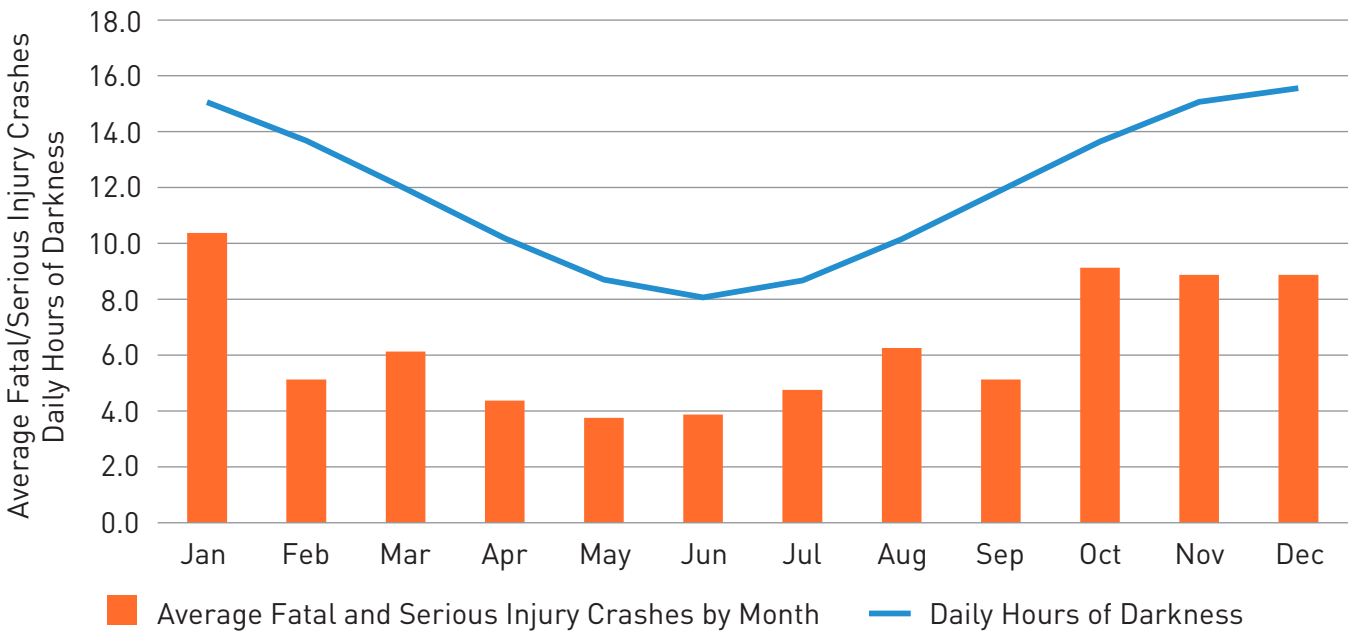


Figure 16. Serious Injury and Fatal Crashes by month and hours of darkness (2015-2022)

Vision Zero is an Equity Initiative

Communities of Color, people experiencing homelessness, and adults over the age of 65 are overrepresented in the crash data (see Figures 17-19). Seattle’s most disadvantaged neighborhoods*, particularly those in South Seattle, notably SODO and Southeast Seattle, have experienced disproportionately high rates of crashes involving serious injuries and lives lost.

Equity is one of our core values and is central to SDOT’s Vision Zero work. We are committed to developing a transportation system that meets the needs of communities of Color and those of all incomes, abilities, and ages. This means working to eliminate the disparities in collision patterns across communities and focusing our Vision Zero strategies and resources on the most impacted neighborhoods and populations.

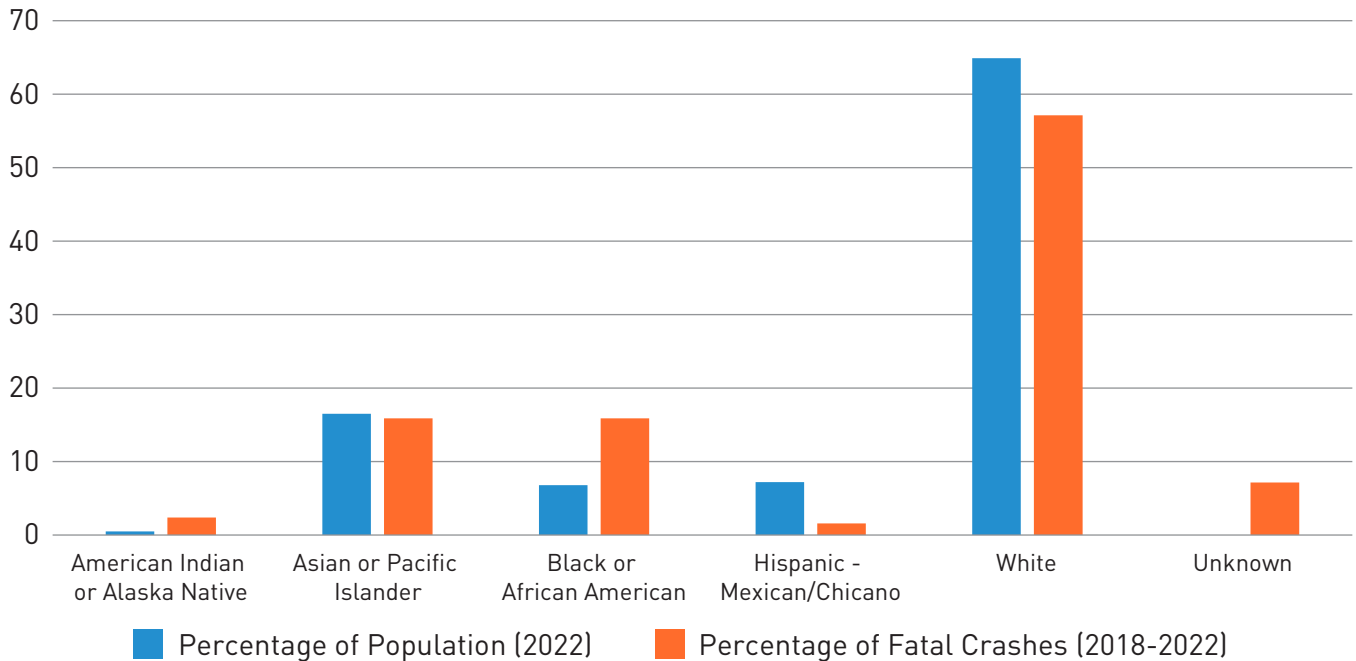


Figure 17. Comparison of racial demographics between lives lost in fatal traffic collisions in Seattle (2018-2022) and the racial composition of Seattle’s population (2022)⁶

*Disadvantage is based on the social, health, and socioeconomic factors defined in Seattle’s [Race and Social Equity Composite Index](#).

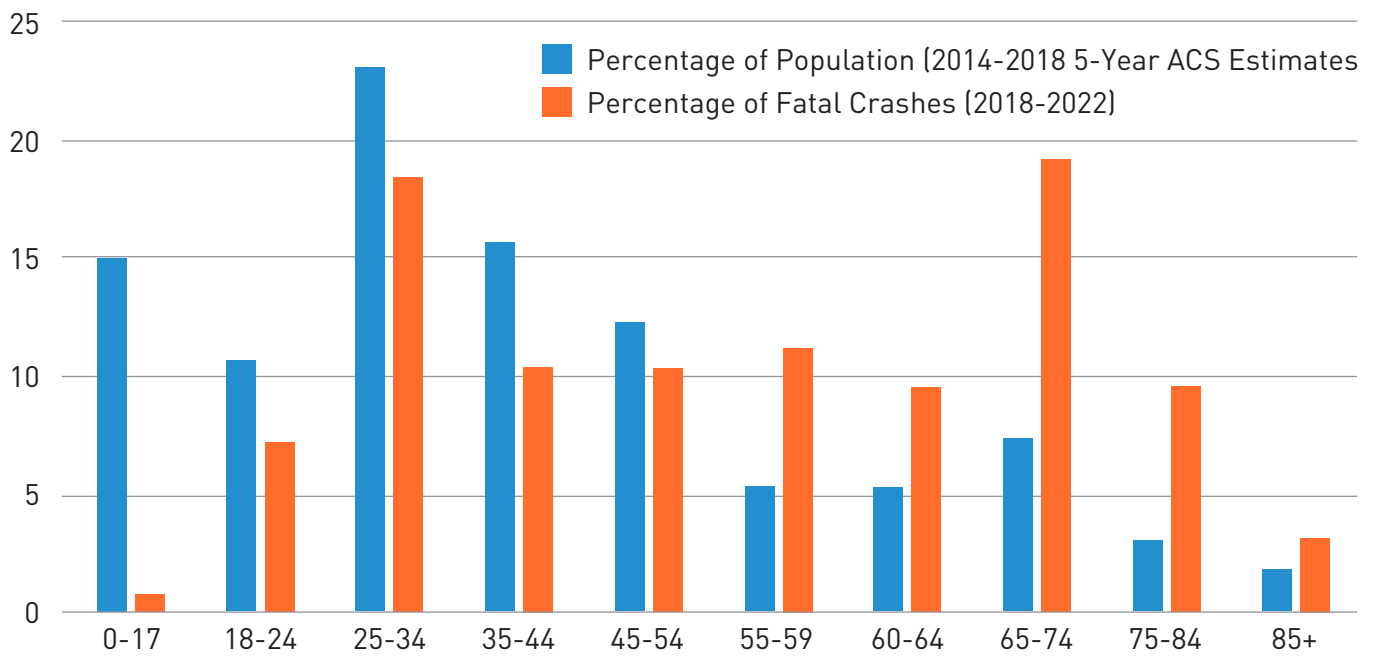


Figure 18. Comparison of age demographics between lives lost in fatal traffic collisions in Seattle (2018-2022) and the age composition of Seattle's population (2014-2018 5-Year American Community Survey Estimates)⁷

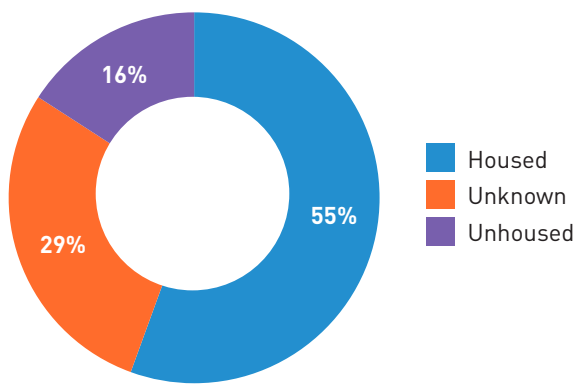


Figure 19. Housing status of lives lost in fatal traffic collisions in Seattle (2018-2022)*

*Data on the housing status of fatal crash victims is based on best information available provided by the King County Medical Examiner but is not always known with full certainty at the time we receive collision reporting. This explains the high percentage of fatal crash victims with an "unknown" housing status.

VISION ZERO DATA SOURCES FOR PRIORITIZATION

Vision Zero relies on several data sources to inform the basis of our project prioritization, including collision reports, the High Injury Network, the Bicycle and Pedestrian Safety Analysis, citywide speed data, and research on effective safety countermeasures.

Collision Tracking

Collision reports we receive from the Seattle Police Department are the primary data source for our responsive approach. We acknowledge that these reports do not account for all minor incidents, near-misses, and crashes that do not have a police response. Despite these limitations, these police reports offer us valuable insights about collisions on our streets. Among other details, these include the time of day that crashes occur, the severity of the crash, factors contributing to crashes, and the modes of travel involved.

We routinely use the Seattle Police Department's collision reports to track trends in crashes throughout Seattle to identify high-collision locations, collision patterns, and travel behavior contributing to crashes. We also perform detailed reviews of all fatal collisions that occur to look more closely into the locational details by visiting the collision location and checking site conditions. The information provided in these collision reports and analyses provides the basis for our responsive Vision Zero approach and helps to guide our investments towards prioritizing locations and treatments that effectively address existing collision patterns on our streets.

As new safety analytics technologies become available, we are beginning to employ these tools to review "near-miss" events so that we can proactively respond with focused safety treatments before crash patterns develop. Currently, we have tested these artificial intelligence-based systems at a limited number of intersections. We will soon be deploying these tools at four intersections along MLK Jr Way S using USDOT SMART grant funding.

High Injury Network

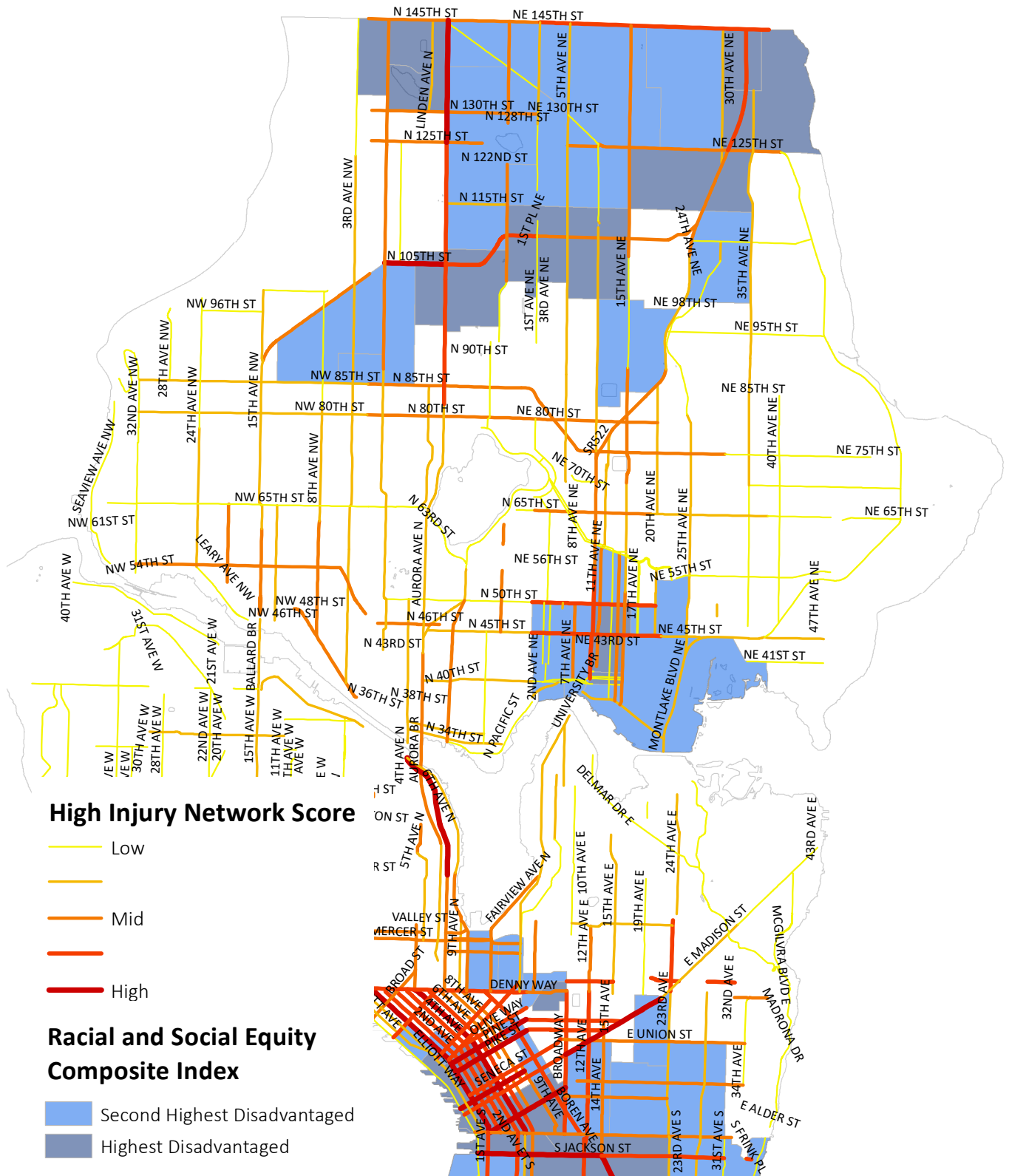
The Vision Zero High Injury Network is an output of our collision tracking across the city and provides a corridor-level overview of the streets where crashes are most frequently occurring. The High Injury Network is comprised of arterial streets throughout Seattle that have been divided into segments that are approximately one mile in length and scored with the following formula:

Factor	Weighting
Number of all crashes in past five years (excluding parking/rear end/sideswipe collisions)*	50%
Number of injury, serious injury, and fatality crashes in the past five years	50%

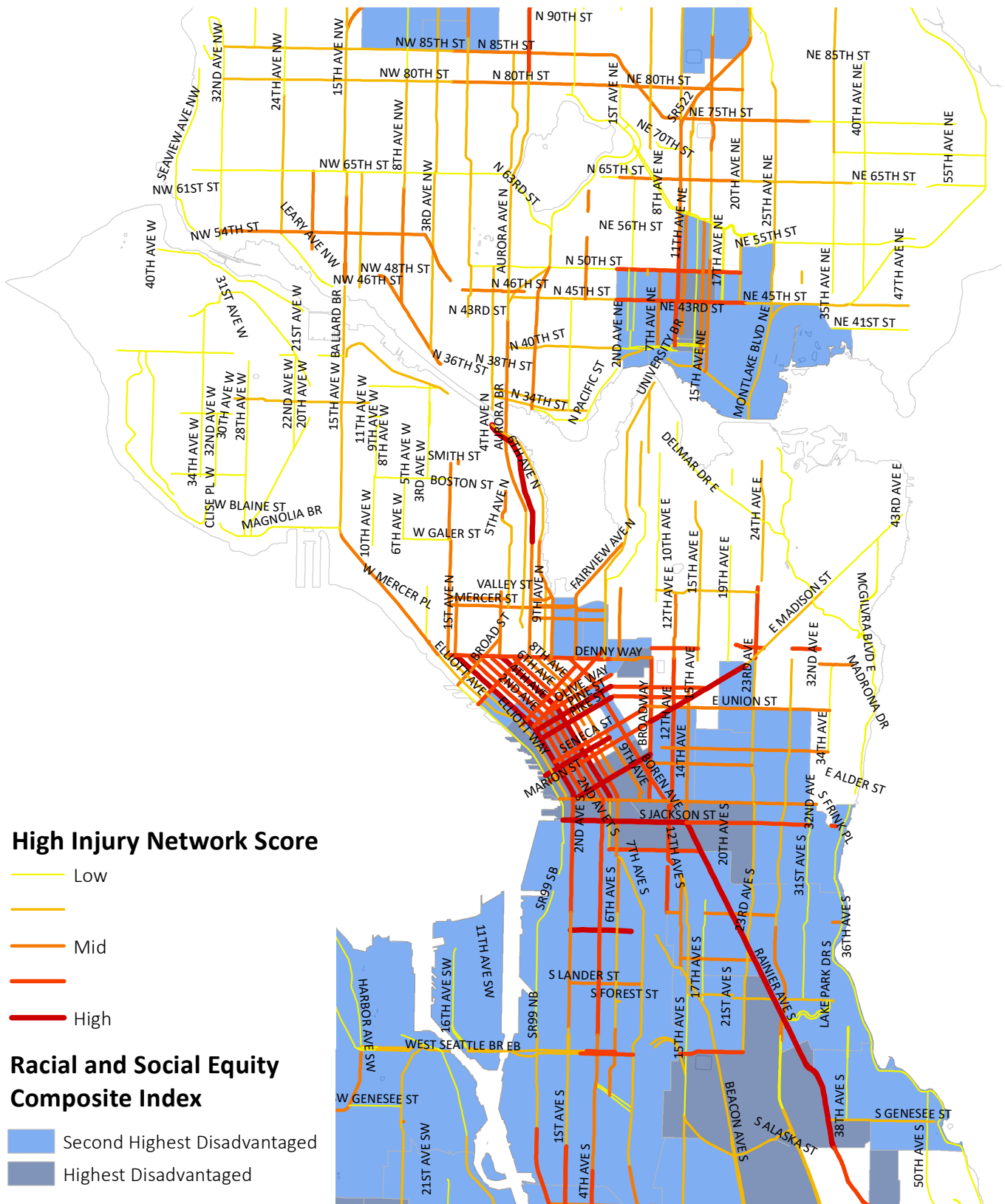
*Parking, rear end, and sideswipe collisions were intentionally removed due to their relatively low potential to result in serious injuries or fatalities.

This ranked corridor list and associated map allows us to see a relative density of crash locations throughout the city and their overlap with Seattle's the most disadvantaged communities to plan corridor improvements where they will have the greatest impact on correcting existing safety issues. While the High Injury Network is routinely updated with new collision data, the map on the following page shows the current network with the scored corridor segments broken down into five tiers.

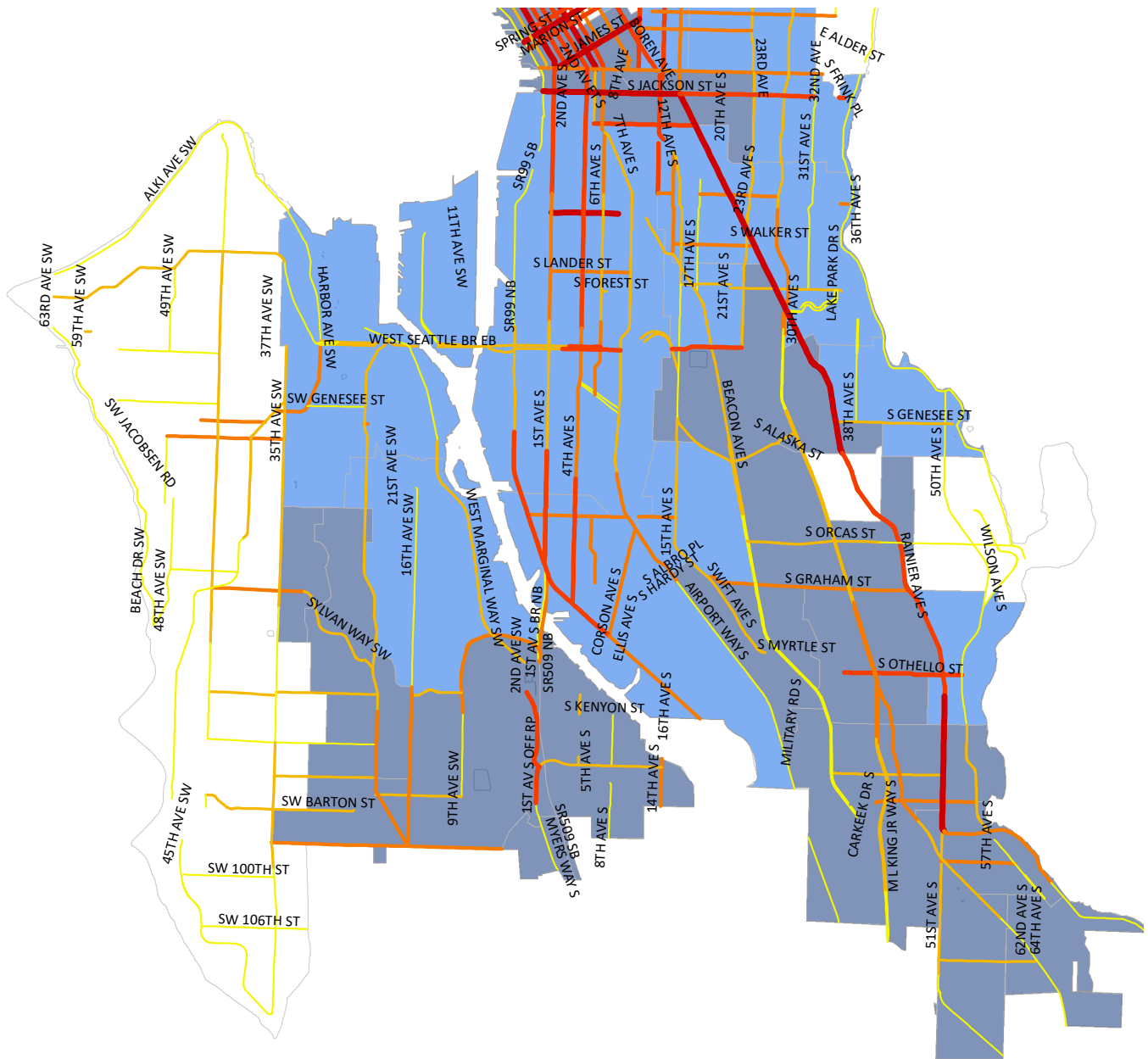
The High Injury Network is our primary tool for visualizing where collisions are occurring on a corridor level and prioritizing responsive safety treatments. We know that many of the highest-ranking streets within this network include multi-lane arterial streets with high traffic volumes, such as Rainier Ave S, Aurora Ave N, and many of the streets in our Downtown network. We will continue to reference and update this network as we plan future Vision Zero corridor projects and work to address the crash patterns we're observing on these streets.



High injury network - north sector



High injury network - central sector



High Injury Network Score

- Low
- Mid
- High

Racial and Social Equity Composite Index

- Second Highest Disadvantaged
- Highest Disadvantaged

High injury network - south sector

BICYCLE AND PEDESTRIAN SAFETY ANALYSIS

One of our innovative tools for understanding crash risks involving people who walk/roll and bike on our streets is the [Bicycle and Pedestrian Safety Analysis \(BPSA\)](#). This analysis is one of the most advanced, data-driven evaluations in the nation for understanding the context around where, how, and why pedestrian and bicycle crashes may occur. The BPSA uses statistical models to estimate the potential risk of collisions based on various factors, including land use, distance to transit, presence of enhanced crossings, speed limits, and other roadway and traffic control characteristics.

The BPSA was initially released in 2016 and updated in 2020 to incorporate more years of crash data, new signal phasing information, and refined exposure models to better assess crash risk. We are currently finalizing a third phase of the BPSA that will shift additional focus towards analyzing risk factors in equity focus areas.

The BPSA highlights multiple factors that are positively associated with increased crashes, such as high traffic volumes and complex intersections. The results from the study demonstrate the need to focus improvements on treatments that increase separation between modes and provide more protection and accessibility for people crossing the street where high-risk factors exist.

In addition to providing useful insights into crash risk context and pedestrian and bicycle exposure, the BPSA identifies intersections across the city that are a higher priority for safety upgrades, meaning that they exhibit one or more characteristics found to have a positive association with increased crashes. We are using these findings from the BPSA as the foundation of our proactive approach and will address locations that are known to contain the studied risk factors for people walking, rolling, and biking.

CITYWIDE SPEED DATA

Speed plays a major role in the likelihood and severity of crashes on our streets, which is why Vision Zero and the Safe System Approach place so much emphasis on reducing speeds on our streets.

We purchase citywide speed data analytics through a private vendor that provides real-time and historical speed information across the city. The vendor aggregates data from connected vehicles to provide information on speeds for almost every arterial street and during any specified timeframe, such as after a major sporting event. We also conduct focused speed studies throughout the city to identify where we can implement treatments to reduce speeds and calm traffic. We are using a combination of these speed data sources to inform our proactive speed management strategies, such as speed limit adjustments and traffic calming, and design decisions on small and large capital improvement projects.

HIT BY A VEHICLE TRAVELING AT 20 MPH



9 out of 10 pedestrians survive

HIT BY A VEHICLE TRAVELING AT 30 MPH



5 out of 10 pedestrians survive

HIT BY A VEHICLE TRAVELING AT 40 MPH



Only 1 out of 10 pedestrians survives

SAFETY PERFORMANCE DATA AND PROVEN SAFETY COUNTERMEASURES

While most of our proactive and responsive treatments are informed by an intensive process of local data collection, site analysis, and planning, we also reference nationally available data on how well certain safety countermeasures are able to reduce the likelihood of crashes. These “crash reduction factors” help inform how well we can expect safety treatments to perform and which treatments are likely to work well for proactive implementation.

Many of these research-backed proven safety countermeasures work in nearly every application, and we are working to scale and deploy these systematically across the city. The Federal Highway Administration publishes a database of crash reduction factors for a broad range of roadway treatments along with a guide for [Proven Safety Countermeasures](#). We use these resources as a starting point in identifying treatments that have the highest potential to prevent crashes. In addition, we also study and pilot additional tools to reduce conflicts on our roadways.

Many treatments, such as leading pedestrian intervals, No Turn on Red restrictions, enhanced crossing improvements, intersection and corridor lighting, protected left turn installations, intersection daylighting, and retroreflective signal backplates provide safety benefits in nearly every context and are relatively low-cost treatments. In addition to the Vision Zero program scaling these throughout our network, we are making these enhancements part of our standard package of Vision Zero treatments so they can be installed with nearly any capital project. This process will help us to rapidly deploy these treatments on a citywide scale and observe safer outcomes more broadly.

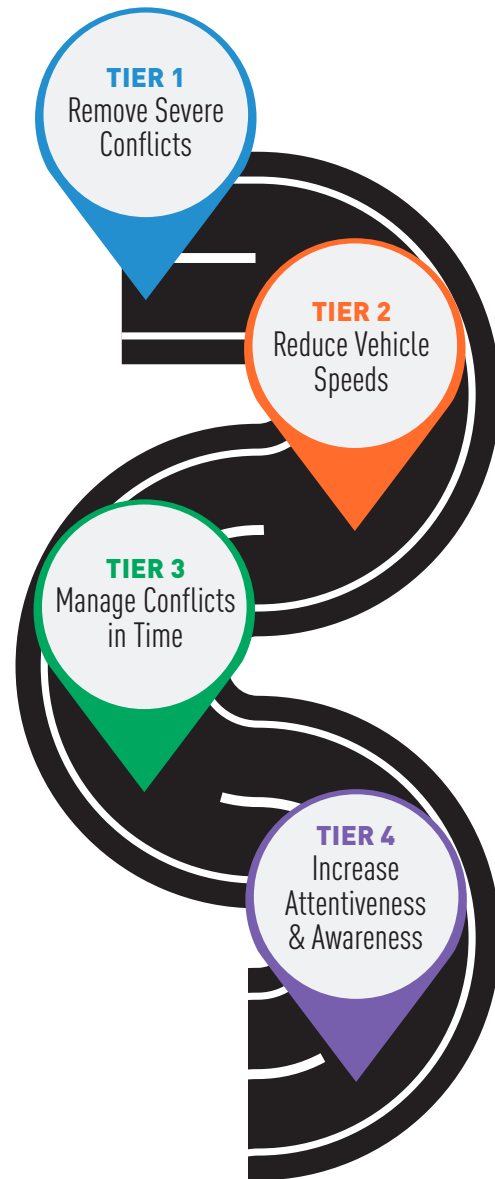
We are continuing to work with our partner agencies and transportation data vendors to improve the quality and availability of safety data. This includes working with our partner agencies, such as the Seattle Fire Department and the King County Medical Examiner’s Office, to expand the availability of data that will provide additional insight into the crashes occurring on our streets.

THE VISION ZERO TOOLKIT

To advance the Safe System elements of safer streets and safer speeds, we rely on a broad toolkit of engineering treatments that can be tailored to address context-specific safety challenges. We build upon the Federal Highway Administration’s list of [Proven Safety Countermeasures](#) and consistently research and pilot the effectiveness of safety treatments to develop our engineering toolkit. While the toolkit presented below does not include every treatment we could install to reduce collisions on our streets, it is intended to provide an overview of common treatments we install that are proven to reduce traffic speeds, decrease potential conflicts, or enhance the ease of walking, rolling, and biking.

SAFE SYSTEM ROADWAY DESIGN HIERARCHY



The strategies and actions presented in this plan, as well as our engineering toolkit, are prioritized with respect to the [Federal Highway Administration’s Safe System Roadway Design Hierarchy](#). This framework assigns a tiered scoring to each solution based on its effectiveness and alignment with Safe System principles. This hierarchy recognizes that physical changes to the roadway, particularly those that eliminate conflicts, are more effective than those that rely on road users to make safe decisions. Each of the treatments in our Vision Zero toolkit below have been assigned a hierarchy tier based on this framework. This hierarchy will guide us in prioritizing treatments that most effectively support the Safe System Approach.




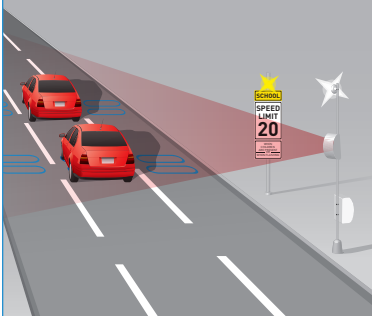
SAFE SYSTEM Roadway Design Hierarchy

Figure 20. Safe System Roadway Design Hierarchy



SPEED CONTROL

	Treatment	Safe System Design Hierarchy
	<p>Speed Humps and Speed Cushions</p> <ul style="list-style-type: none"> • Install a permanent mid-block vertical rise in the roadway that vehicles travel over. • Speed cushions include cut outs for emergency vehicles to pass through and are appropriate for steeper streets and some lower volume arterial streets. 	Tier 2
	<p>Horizontal Travel Lane Shifts</p> <ul style="list-style-type: none"> • Modulate the straight travel path for vehicles and diverting lane alignments across the width of the roadway. • This treatment can be accomplished with refuge islands on two-lane roadways, chicanes, traffic circles, roundabouts or adjustments to parking configurations. 	Tier 2
	<p>Narrow Travel Lanes</p> <ul style="list-style-type: none"> • Provide a narrower width for vehicle lanes. • The narrowest lane widths can be provided on streets without bus service that carry a low volume of freight traffic. • Travel lane widths can be narrowed on both arterial and non-arterial streets. 	Tier 2
	<p>Road Diets/Lane Reductions</p> <ul style="list-style-type: none"> • Reduce vehicle speeds and conflict points to prevent crashes. • Lane reductions (also known as road diets) are most appropriate on multi-lane streets within a certain range of traffic volumes. 	Tier 1, Tier 2
	<p>Radar Speed Feedback Signs</p> <ul style="list-style-type: none"> • Use radar to sense and display the speed of passing vehicles on a sign along the roadway. • Radar speed feedback signs are best used on arterial streets with one lane in each direction and a pattern of drivers traveling above the posted speed limit where other traffic calming treatments may not be feasible. 	Tier 2, Tier 4

SPEED CONTROL

Treatment	Safe System Design Hierarchy
 <p>Reduced Speed Limits</p> <ul style="list-style-type: none"> • Post vehicle speed limits that are lower to encourage slower vehicle speeds and reduce the number of high-end speeders traveling 10+ MPH over the posted speed limit. • Lower speed limits are proven to reduce the likelihood and severity of crashes, especially when supported with engineering treatments. 	Tier 2
 <p>Speed Safety Cameras</p> <ul style="list-style-type: none"> • Use camera technology to sense drivers traveling over the posted speed limit, and issue a warning or citation. • Speed cameras have significantly reduced speed and safety issues within school zones in Seattle and have proven safety benefits in nationwide application. A policy is being developed around the equitable use of traffic safety cameras more broadly in Seattle. 	Tier 2

INTERSECTION SAFETY IMPROVEMENTS

Treatment	Safe System Design Hierarchy
 <p>Intersection Daylighting</p> <ul style="list-style-type: none"> • Sets back parking and visual obstructions from an intersection to improve visibility of people walking, rolling, biking, or driving at the intersection. • Intersection daylighting can be installed simply with “no parking” signs or painted or raised curb bulbs and can involve more complex treatments such as rain gardens or bike corrals to serve dual purposes. 	Tier 4
 <p>Pedestrian Countdown Signals</p> <ul style="list-style-type: none"> • Display a numerical countdown of the number of seconds left for a person walking to cross the street at a signalized intersection to reduce the risk of conflicts with vehicles at the end of a crossing phase. • Pedestrian countdown signals are standard for all new or upgraded pedestrian signal heads in Seattle. 	Tier 3, Tier 4

INTERSECTION SAFETY IMPROVEMENTS

	Treatment	Safe System Design Hierarchy
	<p>Protected Turn Phasing</p> <ul style="list-style-type: none"> • Separates turning vehicles from pedestrian, and bicyclist movements, and from oncoming through traffic at a signal to reduce potential conflicts. • Protected turn phasing eliminates the need for people driving to find a “gap” in oncoming traffic and reduces the type of left turn, angle, and pedestrian crashes at signalized intersections that are correlated with higher severity. 	Tier 3
	<p>Red Light Cameras</p> <ul style="list-style-type: none"> • Detect drivers that proceed through an intersection during the red phase of a signal, and issue a warning and/or citation. • Red light cameras have been found to reduce the types of crashes at intersections that are correlated with higher severity. 	Tier 3
	<p>“No Turn on Red” Restrictions</p> <ul style="list-style-type: none"> • Restrict vehicle turning movements during a signal’s red phase to reduce conflicts with people walking, rolling, or biking at a signalized intersection. • Restricting right turns on red is an effective tool in preventing crashes with people outside of vehicles and can be implemented by installing new signs at signalized intersections. 	Tier 3, Tier 4
	<p>Hardened Centerlines, Turn Wedges, and Corner Truck Aprons</p> <ul style="list-style-type: none"> • Provide truck-mountable barriers next to crosswalks that require people driving to make slower turns at a more perpendicular angle. • Hardened centerlines, turn wedges, and corner truck aprons allow for slower turning speeds and more square turns at intersections to improve visibility of people walking and rolling while still accommodating the turning movements of large vehicles that may roll over the barriers. 	Tier 2, Tier 4
	<p>Curb Bulbs and Smaller Corner Radii</p> <ul style="list-style-type: none"> • Curb bulbs shorten the distance needed to cross the roadway and improve the visibility of people waiting to cross. Curb bulbs can be used on streets with a parking lane and can be installed with either paint or raised materials. • Smaller corner radii slow down right turning vehicles and provide additional space for people waiting at the corner. Corner radii are determined based on the type of vehicles making turns at an intersection. 	Tier 2, Tier 4






INTERSECTION SAFETY IMPROVEMENTS

Treatment	Safe System Design Hierarchy
 <p>Marked Crosswalks</p> <ul style="list-style-type: none"> • Marked crosswalks alert people driving to frequent pedestrian crossing locations. • Marked crosswalks are installed with crosswalk signs and are often combined with other treatments in this toolkit to enhance a crossing for people who walk, roll, and bike, including rectangular rapid flashing beacons, curb bulbs, and pedestrian refuge islands. 	Tier 4
 <p>Raised Crosswalks</p> <ul style="list-style-type: none"> • Provide additional warning to marked crosswalks with an elevated surface for the crosswalk. This treatment also helps to encourage slower speeds for approaching vehicles. 	Tier 2, Tier 4
 <p>Leading Pedestrian and Bike Intervals</p> <ul style="list-style-type: none"> • Provide people walking, rolling, or biking across a signalized intersection with 3-7 seconds of head start before vehicles receive a green light. • Leading pedestrian intervals are highly effective in reducing conflicts between turning vehicles and people crossing and can be installed at nearly all fully signalized intersections. • Leading bike intervals provide a similar benefit to leading pedestrian intervals where separated signal phasing for turning movements cannot be provided and bike signals exist. 	Tier 3
 <p>Pedestrian and Bike Crossing Signals (Half Signals)</p> <ul style="list-style-type: none"> • Stop vehicle traffic on busier streets to allow people walking and biking to cross the street. • Crossing signals are most appropriate for streets with more than one lane in each direction and streets with higher traffic volumes and speeds. 	Tier 3
 <p>Rectangular Rapid Flashing Beacons</p> <ul style="list-style-type: none"> • Alert drivers of a person walking, rolling, or biking at a crosswalk with pedestrian-activated blinking lights. • Rectangular rapid flashing beacons work best on streets with medium to high traffic volumes and speeds. 	Tier 4

INTERSECTION SAFETY IMPROVEMENTS

	Treatment	Safe System Design Hierarchy
	<p>Pedestrian Refuge and Median Islands</p> <ul style="list-style-type: none"> • Provide a protected space for people walking or rolling to cross half the roadway and wait to cross the remaining lanes. • Pedestrian refuge and median islands are best used on streets with a center turn lane or parking lane. 	Tier 1, Tier 2
	<p>Intersection Stop Control</p> <ul style="list-style-type: none"> • Controls traffic on intersection approaches with two-way or all-way stop signs that require vehicles to reach a complete stop before proceeding. • Intersection stop control is effective in improving the awareness of pedestrian crossings. 	Tier 3, Tier 4
	<p>Roundabouts and Traffic Circles</p> <ul style="list-style-type: none"> • Decrease traffic speeds, clarify movements, and enhance visibility at intersections. • Roundabouts are best used for reducing crashes and speeding on arterial streets and traffic circles are effective in slowing traffic on residential streets. 	Tier 1, Tier 2
	<p>Signal Head Upgrades and Retroreflective Signal Backplates</p> <ul style="list-style-type: none"> • Improve visibility of traffic signals for people driving. • Increasing the sizes of traffic signal heads and adding a high-visibility reflective border on signals can increase compliance with signal controls for people driving. 	Tier 4
	<p>Intersection Lighting Improvements</p> <ul style="list-style-type: none"> • Brighten intersections during hours of darkness to improve visibility for all travelers and reduce potential crashes involving people crossing the street. • The number and brightness of lighting fixtures at an intersection depends on the roadway width, type of intersection control, and roadway classification. 	Tier 4

ALONG-THE-ROADWAY SAFETY IMPROVEMENTS

	Treatment	Safe System Design Hierarchy
	<p>Sidewalks and Walkways</p> <ul style="list-style-type: none"> • Provide a separate and protected space for people to walk and roll along the roadway. • Sidewalks and walkways improve accessibility and are effective in reducing crashes involving people who are walking or rolling along the roadway. 	Tier 1
	<p>Protected Bicycle Lanes</p> <ul style="list-style-type: none"> • Provide space for people biking or using scooters that is separated from vehicle travel lanes, parking lanes, and sidewalks. • Protected bike lanes improve safety and comfort for people biking by combining the experience of a multi-use trail with a conventional bike lane. 	Tier 1
	<p>Corridor Lighting Improvements</p> <ul style="list-style-type: none"> • Improve visibility of all travelers at night between intersections to reduce the potential for collisions. • Corridor lighting can be provided as either roadway lighting or pedestrian-scale lighting to brighten sidewalks and pedestrian-focused areas. • The number of roadway lighting fixtures and their brightness depends on the roadway width and classification. 	Tier 4
	<p>School Zone Signage Improvements</p> <ul style="list-style-type: none"> • Reinforce 20 MPH speed limits during school pick-up and drop-off times within designated school zones. • School zone speed signs can be enhanced with yellow flashing beacons operated around school start and end times to improve visibility and reduce speeding around school zones. 	Tier 4
	<p>Residential Street Closures</p> <ul style="list-style-type: none"> • Provide protected space for people to walk, roll, bike, and play in the street without cut-through vehicle traffic. • Several programs support permanent, recurring, and single-event street closures, including Healthy Streets, School Streets, Play Streets, and Block Parties. 	Tier 1

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