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**PAS MEMO**

# Achieving Vision Zero in Practice

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The United States is facing a growing crisis of traffic fatalities and serious injuries on our roadways that now results in over 40,000 preventable deaths per year (NHTSA 2022). The crisis is especially acute for the most vulnerable road users, such as those walking or biking. Today, about 50 percent more people die while walking or using a mobility device compared to a decade ago (Schmitt 2020).

The Vision Zero movement emerged in Sweden in the 1990s in response to this growing traffic safety crisis. While its goal of achieving zero deaths and serious injuries has been adopted by dozens of communities across the United States, many still struggle with rising fatalities and disproportionate impacts on communities of color and pedestrians and cyclists (Vision Zero Network 2023; GHSA 2021).

But some communities are seeing progress towards achieving safety goals and centering equity in their approach. Jersey City is a densely populated New Jersey municipality of nearly 300,000 residents that is one of the most racially and ethnically diverse populations in the United States. It achieved zero traffic deaths and a significant reduction in serious injury crashes on streets under its jurisdiction in 2022 using mostly tactical, quick-build tools and a safe-system approach that engages multiple disciplines in instituting change (Surico 2022). In this same year, Jersey City also saw an overall reduction in traffic fatalities on state and county roads running through the city, despite an increase at the state level.

*Figure 1. Jersey City has achieved success by designing infrastructure for all ages and abilities, making streets safer for all (City of Jersey City)*

This *PAS Memo* provides actionable and practical guidance based on an in-depth case study of Jersey City. It shares how Jersey City has been able to develop a Vision Zero Action Plan, leverage tactical interventions to create systematic change within city government, and coordinate with regional and state entities to achieve greater levels of success. Planners will learn how to apply these principles in their own communities, starting small and building momentum towards making streets safe for all (Figure 1).

## The Disproportionate Impact of Traffic Violence

In her book, *Right of Way: Race, Class, and the Silent Epidemic of Pedestrian Deaths in America*, author Angie Schmitt cites the statistic that Black and Hispanic men are twice as likely to be killed while walking (or wheeling) as white men and four times more likely to be killed than the general population. While Black and brown people are significantly more likely to primarily rely on walking or public transportation and are less likely to have access to a vehicle, this pattern holds true even when accounting for mode and distance traveled. A recent study by Harvard and Boston University researchers found that Black pedestrians were more than twice as likely for each mile walked to be struck and killed by a vehicle as white pedestrians, and Black cyclists were 4.5 times as likely per mile to be struck and killed by a vehicle (Susaneck 2023).

These patterns are legacies of systemic racism in the United States that have been perpetuated through discriminatory housing and transportation policies and funding that have segregated where people live and how they get around. These neighborhoods are overburdened in part due to historic underinvestment in planning and implementation of basic traffic


*Figure 2. To address disproportionate impacts on communities of color, centering equity and protecting historically marginalized populations is an important aspect of Vision Zero planning (City of Jersey City)*

safety improvements (Susaneck 2023). It should be no surprise that in several major cities studied, maps of redlined communities overlap with the highest density of traffic violence, as historically redlined areas continue to house higher concentrations of low-income families and communities of color (Susaneck 2023).

Recognizing the disproportionate impacts of traffic violence on historically marginalized communities, it is imperative that planners center equity in their efforts to improve traffic safety (Figure 2). This imperative to act comes with urgency, as every day of inaction or delay maintains the status quo of more than 100 people—our friends, family, and neighbors—being needlessly lost to traffic violence every day (NHTSA 2022).

## A History of U.S. Traffic Safety

Streets have long been the sites of tragic fatalities. Historian Peter Norton describes four major paradigms in the history of traffic safety since the advent of the automobile in the United States (Norton 2015).

The period between 1900–1920 represented **Safety First,** a period during which public opinion and the legal system recognized the inherent danger posed by cars to more vulnerable users of the street and expected drivers to take responsibility for exercising a higher standard of care. Campaigns at this time often equated speed with recklessness and included appeals to innocence and guilt using charged images of mothers and children.

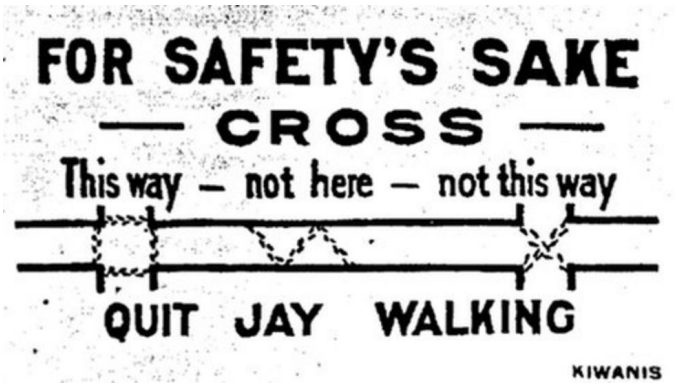


*Figure 3. Between the 1920s and 1960s, traffic safety officials aimed to control non-drivers' behavior, as demonstrated by this card that was handed to pedestrians by a local Boy Scouts troop and Kiwanis Club in Hartford, Connecticut (National Safety News 1921)*

This changed when the United States entered the period of **Control** between the 1920s and 1960s, characterized by the idea of the "Three E's"—engineering, education, and enforcement. Educational campaigns at that time focused on controlling behaviors, especially those of pedestrians (Figure 3). This was followed by the **Crashworthiness** paradigm in the 1960s–1980s, which focused on technical solutions to making vehicles safer for those driving them. It was in the mid-1960s that annual traffic fatalities exceeded 40,000 for the first time in the United States, quickly rising to over 50,000 by 1966. Officials at this time began to accept crashes as inevitable, but they focused most of their efforts on making vehicles safer for drivers in the event of a crash through vehicle design features like airbags and seatbelts. Much discussion centered around highway safety and attempts to engineer safety into high-speed roadways, with little attention to the pedestrian environment.

Norton's analysis ends with the paradigm of **Responsibility** that began in the 1980s and has predominated in most U.S. communities through the present. This paradigm emphasizes individual responsibility with a greater focus on education and enforcement methods. It is only in the last five to 10 years that a new paradigm has begun to emerge in the United States: **Vision Zero** and the Safe System Approach.

### *Vision Zero*

The concept of Vision Zero originated in Sweden in the 1990s and was officially adopted by its parliament in 1997 (Safarpour


*Figure 4. In the Safe System Approach, all stakeholders are vital to preventing fatalities and serious injuries on roadways (USDOT)*

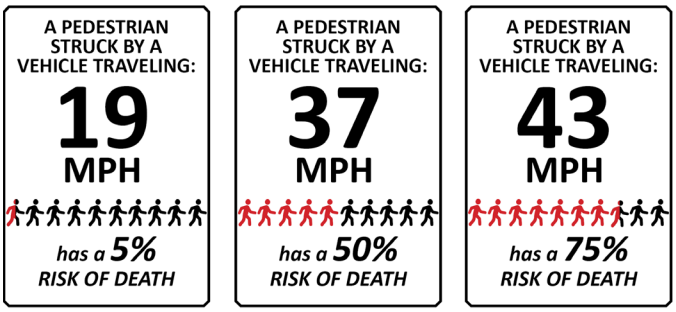


*Figure 5. A meta-analysis of pedestrian and vehicle crash studies found that the risk of pedestrian fatalities increases exponentially with the rate of speed of vehicles (data source: Hussain et al. 2019)*

et al. 2021). At the core of Vision Zero efforts is the conviction that no one should be killed or seriously injured on streets. It recognizes that humans make mistakes, but that those mistakes should not cost them their lives.

Recognizing the vulnerability of people outside of vehicles, Vision Zero shifts the primary responsibility for safety to those who design the transport system, including planners and engineers, vehicle manufacturers, legislators, and others. This is referred to as a Safe System Approach, as it designs a system with many redundancies in place to protect all users through a holistic and comprehensive approach (USDOT 2023). In the United States, this has been adopted by the U.S. Department of Transportation (USDOT) as the guiding paradigm to address roadway safety and involves planning for safer people, safer vehicles, safer speeds, safer roads, and post-crash care (Figure 4, p. 2).

This paradigm further recognizes that safety improvements must encompass safety for all users of the street, often achieved through traffic-calming design interventions. The management of speed has proven to be an effective method of reducing the severity of crashes, especially when involving pedestrians and cyclists. A 2019 meta-analysis found that the risk of death for a pedestrian struck at about 43 miles per hour is 75 percent, while at closer to 20 miles per hour the risk is significantly reduced to just five percent (Figure 5). These findings, however, are now outdated; as vehicles in the United States have become larger and heavier on average, the impact of speed on the severity of crashes has increased.

Sweden and other Nordic countries have seen significant progress towards Vision Zero, with the number of traffic fatalities in Sweden being more than halved since the adoption of this new paradigm (Safarpour et al. 2021). Inspired by the compelling evidence seen overseas, Chicago became the first major U.S. city to adopt Vision Zero in 2012, followed by New York City, San Francisco, and eventually over 45 other communities of varying sizes across the country (Vision Zero Network 2023).

Unfortunately, most U.S. Vision Zero cities have not yet achieved the kind of success that other developed countries have seen. In 2021, the United States reached a 16-year high for the number of traffic fatalities, while other countries, including Japan and Norway, experienced the lowest rates since the 1940s (Figure 6). Even more striking is the fact that U.S. pedes-

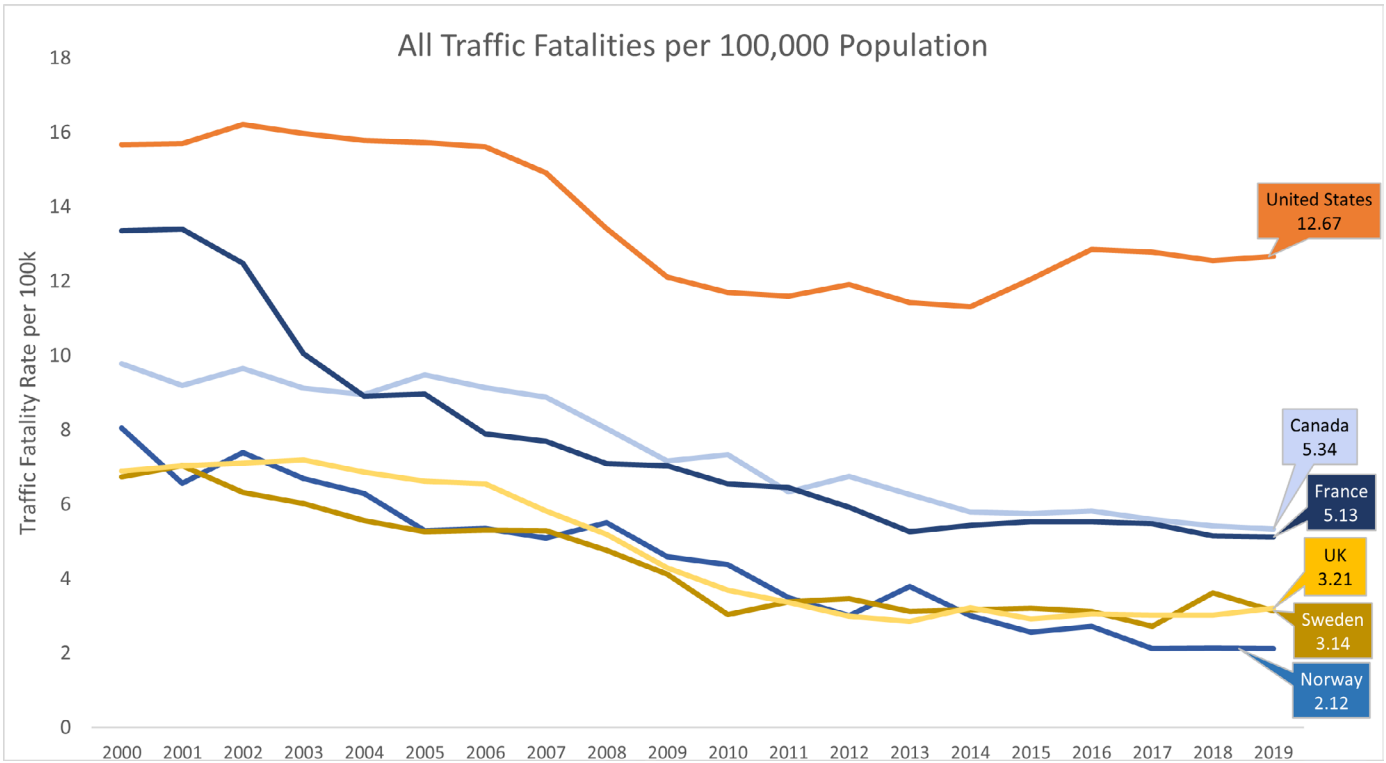


*Figure 6. Traffic fatalities per 100,000 population in the United States, Canada, and selected western European countries (data source: World Health Organization's Global Health Observatory)*

trian deaths have risen over 40 percent between 2010 and 2018, more than twice the pace of any other OECD member countries (Zipper 2022b).

Many reasons have been suggested for this difference in results from other countries, ranging from safer vehicle design and size to the more widespread adoption of technologies such as automated speed cameras and the significant changes to street design that prioritize pedestrian and cyclist mobility (Zipper 2022b). In the United States, some of the challenge comes from a lack of urgent action at the state and federal levels to tackle the issue with regulatory and financial tools, but cities have also struggled to radically reallocate space on the street to achieve the scale of change necessary. Factors thwarting Vision Zero progress include hyperlocal community opposition towards individual projects, a lack of political will to overcome obstacles, and institutional inertia in transportation departments that still compromises safety for vulnerable road users in favor of keeping cars moving (Zipper 2022a).

The good news is that as planners, there are still many tools in our toolbox to make a meaningful difference in the safety of streets using tactical approaches that center equity and engagement. As will be seen in the case study of Jersey City, tactical approaches can be effective at reducing serious injuries and crashes while building support for making permanent changes.

## Jersey City's Vision Zero Approach

In 2018, Mayor Steven Fulop signed Executive Order 2018-007 committing the City of Jersey City to eliminate traffic fatalities and serious injuries by 2026. This strong leadership from the mayor and his administration has been critical to advancing Vision Zero as a priority, structuring the team for success, and moving key projects across the finish line. However, the need for Vision Zero started much earlier.

**Identifying the need.** Around the time that Jersey City adopted Vision Zero, it was also in the midst of creating or updating multiple plans that touched on various elements of traffic safety: a Pedestrian Enhancement Plan, a Bicycle Master Plan, and a School Travel Plan. During the outreach for these plans, planners heard from community members that safety was a key issue impacting their ability to get around on foot or by bike. Planners gathered mode-specific crash data that began to identify the need for targeted efforts to improve safety at various hotspots throughout the city.

Analysis revealed that in the decade prior to adopting Vision Zero, almost 100 people in Jersey City had been killed in traffic crashes and over 200 suffered life-changing injuries. Nearly half of the fatal crash victims were pedestrians, and many were children.

**Getting the support of elected officials**. Confronted with these startling and tragic statistics, the need to act with urgency became clear to local elected officials, planners, and members of the community, leading to the adoption of a Vision Zero commitment and development of a Vision Zero Action Plan.

Gaining the support of the mayoral administration helped to solidify Vision Zero as a priority and affirm that all departments had roles to play in achieving a successful outcome. Executive Order 2019-007 called for a multidisciplinary task force that would engage top leadership as well as safe streets advocacy groups in developing the Action Plan and overseeing its implementation. The multidisciplinary nature of the group ensured that Jersey City would tackle the issue using a systems approach.

**Data and equity analysis**. To better understand where to invest resources and which strategies would be most suitable to deploy, the Transportation Planning and Traffic Engineering staff responsible for leading the Vision Zero Action Plan and Task Force first engaged a consultant through a competitive procurement process to assist with the development of the Action Plan. Among the first tasks of the consultant team was to conduct a comprehensive data and equity analysis. The analysis included mapping of the locations of serious injury and fatal crashes overlaid with communities of concern (see the sidebar on p. 5 for a definition of this designation in the context of equity analysis).

The analysis ultimately resulted in the creation of the High-Injury Network, a map of streets that represent a small percentage of the overall road miles but are the site of a majority of fatal and serious crashes (discussed further below). The High-Injury Network continues to be used to guide investments in traffic safety and street redesigns.

**Engaging the community and stakeholders.** Recognizing the importance of robust and inclusive public engagement, the project team undertook an intentional effort to incorporate outreach into its efforts around Vision Zero. In addition to translating public engagement materials into Arabic, Hindi, Spanish, and Tagalog and having a Spanish translator available at every public event, the team ensured that there was a diverse array of participation opportunities around the city and that in-person meetings included children's activities to make it easier for families with children to participate. This included the following approaches:

- Tables at existing public events
- Pop-up intercept surveys near transit stops on the High-Injury Network
- Information sessions in an open-house style
- Online survey and mapping exercise
- Public meetings

The team also incorporated the feedback collected from walking audits and handlebar surveys conducted as part of the Pedestrian Enhancement Plan and Bicycle Master Plan.

**Developing the Action Plan**. With the help of its consultant, Jersey City embarked on a 12-month process to develop a comprehensive Vision Zero Action Plan that included extensive public outreach and a data-driven approach to recommendations. An important element shaping the Action Plan's recommendations was recognition on the part of the mayor and city council that Vision Zero was not just a new or additional program, but rather a new way of doing business that required the City to refocus its existing programs.

## Jersey City's Equity Analysis and Key Statistics

Jersey City has a rapidly growing population that by some accounts is the most diverse in the United States. Almost 60 percent of residents identify as non-white, and over half speak a language other than English at home. More than 80 percent of the city falls within the designation "community of concern," defined as minority concentration equal to or exceeding the regional threshold; low-income concentration equal to or exceeding the regional threshold; or two or more other indicators equal to or exceeding the regional threshold, such as female head of household with children, persons with limited English proficiency, carless households, or elderly populations of 75 years and over.

Jersey City also experiences an uncommon level of travel mode diversity, which can be attributed to the dense built environment and high-quality transit options available. Greater than 60 percent of trips within city boundaries are taken by walking, biking, or using transit (Figure 7).

Despite this diversity, specific populations and travel modes bear the brunt of the fatal and serious injury crashes. An equity analysis as part of the Vision Zero Action Plan development found that between 2008 and 2017, 68 percent of fatal crashes on city roads involved either a pedestrian or bicyclist, and predominately non-white neighborhoods with elevated levels of poverty were more likely to experience traffic crashes.

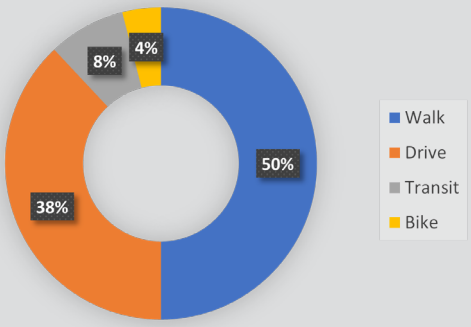


*Figure 7. Trips by mode within Jersey City (data source: Streetlight Data, April 2019)*

The final plan included 77 actions spanning five major themes and several disciplines. Each action item listed one lead partner, but most included at least three supporting partners, an indicator of how important coordination and collaboration would be to achieving success. With accountability built into the plan with timeframes and performance metrics for each action item, the Action Plan is a living document that drives progress each year.

In 2022, Jersey City achieved zero traffic deaths and a significant reduction in serious injury crashes on streets under its jurisdiction as a result of this sustained focus on systematic action. In this same year, the city also saw an overall reduction in traffic fatalities on its state and county roads, despite an increase at the state level.

## Systematizing Change for Success

To achieve change at the scale and pace that the traffic safety crisis demands, action is required at the systems level. Planners have an integral role to play in setting the framework for this systems-level change.

In Jersey City, staff transportation planners have identified the streets and intersections that are most problematic from a safety perspective and helped make the case for focusing on the quick implementation of physical changes to streets to improve conditions for the most vulnerable users, such as pedestrians and bicyclists. Whether tracking progress towards Vision Zero goals, providing expertise and guidance to other departments, or applying for funding, planners have applied their knowledge, skills, and professional values to help the City make meaningful progress towards eliminating traffic deaths. The ability to achieve this success has been further enabled by systemic and administrative changes.

### *Leadership and Structure*

Strong leadership that understands and supports Vision Zero has been a critical catalyst for Jersey City to make structural changes that enable the City to systematize Vision Zero efforts. As noted above, Jersey City's mayor was an early supporter of Vision Zero and issued an executive order in 2018 to adopt Vision Zero as an initiative, establish a task force, and create an action plan.

In 2018, Jersey City moved part of its transportation planning function, which was previously entirely within City Planning, into the Division of Engineering, Traffic, and Transportation. This change helped to increase collaboration between planners and engineers, leading to several successful grant applications to redesign major corridors identified in Jersey City's High-Injury Network. By having a seat at the table during the design phase for corridor projects, planners were able to influence the designs to incorporate best practices for Complete Streets and safety for all users.

In 2022, Jersey City undertook a more significant reorganization. This resulted in the creation of a new Department of Infrastructure that now includes the Divisions of Transportation

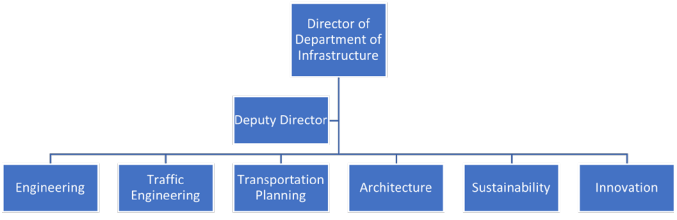


*Figure 8. Jersey City's new organizational structure puts project planning, design, and delivery for public spaces in one department (City of Jersey City)*

VISION ZERO JC ANNUAL REPORT

## Actions

| Action | Partner* | Timeframe | Progress |
|---|---|---|---|
| **1.1** Incorporate the current Speed Hump program into a broader Traffic Calming Policy that encompasses a wider menu of traffic calming options including raised intersections, traffic circles, diverters, forced-turn channelization, and other treatments permissible on residential streets. | ***T,*** C,E,M | 2 year | **Yes, Incomplete** |
| **1.2** Develop a neighborhood slow zone program to allow neighborhoods to request treatments to slow motor vehicles to 15 to 20 mph using traffic calming features, signs, and markings. Explore the feasibility of implementing a 20 mph speed limit for all residential streets. | ***T,*** P | 2 year | **No** |
| **1.3** Prioritize major safety Engineering projects at locations along the High Injury Network. | ***E***, DPW, P, T | Annual | **Yes, Implementation Ongoing** |

*Figure 9. The Annual Progress Report shares the status of action items annually for full transparency and accountability (City of Jersey City)*

Planning, Engineering, Traffic Engineering, Innovation, Sustainability, and Architecture (Figure 8, p. 5). With the new structure, project planning, design, and delivery for public spaces are in one department, which has greatly improved collaboration across disciplines and coordination across project phases.

The structural change has also enabled the City to rapidly transform several major corridors using tactical urbanism. Planners and engineers work together to develop striping plans for quick-build projects and use on-call striping, asphalt, and concrete contractors for implementation.

### *Accountability*

Without an accountability mechanism in place, any well-intentioned plan runs the risk of gathering dust on a shelf. Jersey City's Vision Zero Action Plan incorporates several components designed to increase the likelihood of achieving the plan's overarching goals of eliminating serious injuries and deaths on city streets.

The Action Plan incorporates action items under five broad categories: Design Safer Streets; Promote a Culture of Safety; Embed Vision Zero in City Practices; Enforcement, Law, and Policy; and Planning and Leveraging Data. Each outlines the following elements to ensure actionability:

- **Performance target.** This is a specific (ideally quantifiable) measure to indicate whether the action item has been completed (e.g., implement safety upgrades on five high-crash intersections per year).
- **Owner.** This is whoever is responsible for ensuring the action item is accomplished (e.g., Traffic Division, Planning Department, Police Department). There can be multiple owners for a given action item but designating a lead helps drive accountability. At the plan level, it is typical to list organizational units like divisions or departments, but it is recommended that specific roles or individuals are identified to carry out the tasks as part of the implementation of the plan.
- **Timeframe.** This is the period of time by which the action item should be accomplished (e.g., six months, two years, five years).

In addition to the elements built into each action item, it is important to have a performance reporting plan and structure in place. Jersey City's Vision Zero Program includes a Task Force comprising representatives of each of the divisions or departments involved in carrying out the Vision Zero Action Plan, county and state transportation planners and engineers, transportation advocacy groups involved in safety, and transportation planners from our neighboring Vision Zero community. The Task Force meets quarterly to review year-to-date serious injury and fatal crash trends across all roadways, share progress on high-priority action items and safety projects, and raise issues to address.

At the end of each calendar year, Task Force members submit end-of-year updates, key statistics, and photos to incorporate into the Annual Progress Report. Importantly, the

template and structure of the Annual Progress Report was determined as part of the initial Vision Zero Action Plan development. This commits Jersey City to full transparency by ensuring the ongoing reporting of our fatal and serious injury crash data and the status of each and every action item (Figure 9, p. 6). The Annual Progress Report is shared on the City's dedicated Vision Zero webpage for all to access.

While Jersey City does not have a dedicated GIS unit, Transportation Planning maintains a geodatabase of traffic calming and safety projects, such as protected bike lanes, curb extensions, speed humps, leading pedestrian intervals, and more. Mapping this data is important to assess whether Jersey City is focusing enough effort on the High-Injury Network and investing equitably throughout the city.

### *Process Integration*

One of the major contributing factors to Jersey City's success has been the integration of Vision Zero practices into the routine work of the City. This has made Vision Zero a systematic part of how the City operates across several disciplines. By systematizing safety improvements, progress begins to take on a life of its own, without requiring as much effort from any one person or department.

Traditionally, transportation officials have made safety improvements as part of larger capital projects that tackle one location or corridor at a time and often require significant levels of investment, time, and coordination. Jersey City still pursues capital projects on corridor-wide scales, but no longer waits for those projects to make needed safety improvements to roadways.

The **Planning Division** in the Department of Housing, Economic Development, and Commerce incorporates Vision Zero into development site reviews by requiring that traffic impact studies prepared by developers take into consideration the Vision Zero Action Plan, Bicycle Master Plan, Pedestrian Enhancement Plan, and School Travel Plan. The Transportation Planning Division and Traffic Engineering Division also review each major site plan for opportunities to incorporate traffic safety, with a priority on vulnerable road users. Redevelopment plans often seek to reconnect the street grid and incorporate best practices in safe street design.

Within the Department of Infrastructure, the **Transportation Planning Division** is responsible for administration of the Vision Zero Action Plan and Task Force, incorporating safe street design and principles into every transportation plan and project. Transportation planners coordinate with the Division of Engineering on streets scheduled to be repaved and use the opportunity to introduce safety improvements such as bike lanes, new crosswalks with curb ramps, and curb extensions. They are also responsive to safety concerns raised by the community, and act as liaisons with the Divisions responsible for implementing improvements.

For example, in a recent project, the Transportation Planning Division worked with students to make an intersection safer in front of their school, using temporary materials to test out the new design (Figure 10). The new design features a safe drop-off area for buses only, as well as space for student drop-off. Students helped paint murals in the safety island and curb extensions. After school, the space also functions as additional play space for kids.

The **Traffic Engineering Division** is fully committed to safe, multimodal streets and works hand-in-hand with Transportation Planning on every project impacting the public right-of-way. Traffic Engineering oversees several on-call contracts that allow them to quickly design and implement safety improvements, like traffic signal changes, bike lanes, curb extensions, all-way stops, and more.

The **Division of Engineering i**ncorporates safety improvements, including the installation of new bike lanes, as part of its routine resurfacing program. Engineering oversees several on-call contracts that allow them to construct traffic calming and safety improvements such as curb ramps and speed humps. During the winter season, inspectors inventory streets on the High-Injury Network for faded crosswalks and other safety needs to help determine priorities for the following year.


*Figure 10. School intersection before (left) and after (right) Transportation Planning worked with students to implement improvements (City of Jersey City)*

The **Department of Public Works** has retooled its maintenance fleet to be able to maintain the new infrastructure. For example, it has purchased mini-street sweepers and mini-snow plows that can be used to clear debris and snow from bike lanes and sidewalks (Figure 11). Public Works also paints curbs within 25 feet of intersections to indicate "No Parking" and replaces broken flexible delineators used in the City's quick-build installations.

### *Data-Informed Decision-Making*

As a rapidly growing city, our ability to respond to changing transportation patterns and increasing safety concerns is limited by the availability of staff time and safety project funding. To ensure we are using our constrained time and resources in an efficient manner, Transportation Planning developed the High-Injury Network as a part of the Vision Zero Action Plan.

The High-Injury Network was developed by conducting separate analyses for crashes involving pedestrians, bicyclists, and vehicles and identifying areas with high incidence of fatal or serious injury crashes based on a decade of state and local crash data. After identifying these corridors, the data showed that 55 percent of crashes and 61 percent of fatal crashes occurred on just 14 percent of City-owned roads. Narrowing the scope from over 200 miles of road to just 30 has allowed Jersey City to better prioritize safety investments and maximize the impact of our limited time and resources through targeted lifesaving improvements.

Since the completion of the Vision Zero Action Plan, the Transportation Planning, Traffic Engineering, and Engineering teams have used these findings to apply for and invest millions of dollars in high-impact locations. These investments have yielded positive safety results and we continue to use data to monitor the impacts. The Transportation team uses real-time evaluation tools and databases to monitor crashes, speed, and traffic counts. For example, Traffic Engineering's on-call traffic signal contractor has deployed over 65 cameras at signalized intersections along the High-Injury Network that provide multimodal turning movement counts and video footage that can be used to evaluate safety issues (Figure 12). Traffic Engineering also uses its on-call consultants to measure before/after data on speeds and travel times through corridors. Through its bike-share provider, Jersey City also measures the impact of projects on ridership at nearby bike-share stations. These data sets provide us the ability to monitor and report on progress and address traffic safety deficiencies in our roadway designs.

While the Action Plan may be a static document, the City must constantly address the unfortunate reality of changing crash patterns. Our push to achieve Vision Zero has led to the investment in greater data inputs and analysis capabilities. We are constantly on the lookout to address growing areas of concern that were not present in the initial analysis. It is critical to our traffic safety goals that our crash data, crash analyses, and hot spots are up to date.

### *Funding*

Jersey City uses a mix of funding sources to accomplish its goals around Vision Zero.

**Local.** Most of the safety improvements made to city streets each year are funded using the local capital budget. Using this funding, Jersey City Engineering and Traffic Engineering issue several on-call contracts to purchase most of the materials and install the projects. On-call contracts are competitively bid with terms of one to three years plus options for additional extensions.

*Figure 11. The Department of Public Works ensures that bike lanes are cleared of snow so that getting around by bicycle or scooter is possible at all times of year (City of Jersey City)*

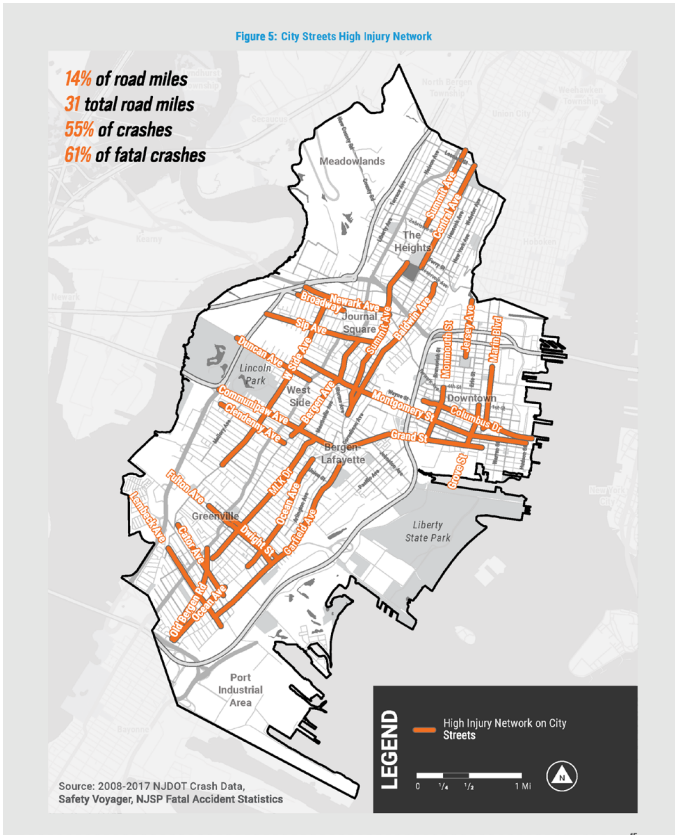


*Figure 12. Jersey City's High-Injury Network shows streets under City jurisdiction responsible for the majority of fatal and serious crashes (City of Jersey City)*

- Concrete – ADA curb ramps, sidewalks, floating bus islands, etc.
- Asphalt – patching, milling, paving, speed humps
- Striping – thermoplastic roadway striping, bike lanes, curb extensions
- Signals – traffic signal emergency and routine maintenance, signal head upgrades, signal timing changes, traffic-counting camera installation

Jersey City also allocates a portion of its general operating budget to on-call consulting contracts to supplement planning and design of safety improvements.

**State.** Jersey City takes advantage of state grants (some of which use federal funds) to advance a variety of safety projects, including those that would typically have only funded roadway improvements that preserved the status quo. For example, while Engineering previously used municipal aid funding for traditional repaving projects, it now incorporates street design changes such as adding protected bike lanes, removing travel lanes, widening sidewalks, installing curb extensions, and other elements to improve safety for all users.

Transportation Planning also applies for competitive grants through programs such as Safe Routes to School, Safe Routes to Transit, Transit Village, Bikeways, and others. Selecting projects and successfully applying for grants has been made easier now that Jersey City has a suite of updated plans containing recommendations, including the Bicycle Master Plan, Pedestrian Enhancement Plan, School Travel Plan, and of course, the Vision Zero Action Plan.

**Federal.** The most significant federally funded program that Jersey City takes advantage of, called the Local Safety Program, is administered jointly by the regional metropolitan planning organization (MPO) and state DOT. This program is funded by the Highway Safety Improvement Program (HSIP) with an aim to fund high-impact safety improvements on local roadways. Jersey City has successfully applied for and been awarded over $25 million since 2015 to make safety improvements to seven corridors on the High-Injury Network. With the new funding available through the Infrastructure Investment and Jobs Act (IIJA), the Transportation Planning team has taken the lead on ramping up applications for grants administered directly by the federal government. In particular, the Safe Streets and Roads for All (SS4A) Program is an unprecedented opportunity for counties and local government to advance Vision Zero planning and implementation.

Due to the longer timeframes associated with federally funded projects, Jersey City has opted to make quick-build improvements to many of these corridors once the preliminary design has been established, which has also given the Transportation team the opportunity to make tweaks to the final design based on real-world feedback on how the changes are working.

### *Regional and State Coordination*

Jersey City has focused heavily on making improvements to streets under its own jurisdiction to make changes quickly and set the tone for how streets should function to be safe for all users within its borders. However, the City has never intended to accomplish Vision Zero on its own and recognizes the importance of collaborating with regional and statewide partners.

In many communities, state and county streets are the most dangerous, so Vision Zero efforts must include partnership to succeed. Jersey City works closely with planners, engineers, and advocates in the county, state, and neighboring municipalities to collaborate on Vision Zero principles, policies, and projects through its Vision Zero Task Force as well as on specific projects or grant opportunities.

In addition to the High-Injury Network for streets within the jurisdiction of the City, Jersey City developed a second version

## Regional Collaboration for Multimodal Connections

In November 2022, Jersey City collaborated with its neighboring Vision Zero city, Hoboken, to construct a bikeway that completes a connection in both cities' protected bike lane networks. The bike lane connects Hoboken Terminal and a bike-share station just over the border in Jersey City, making it possible to travel between the cities entirely on protected bike lanes (Figure 13).

This small but mighty connection was named one of the best new U.S. bike lanes of 2022 by the organization People for Bikes, in part because of how critical to regional mobility it is (Haggerty 2023). In 2022, it was the most popular route for the entire regional bike-share system (Jersey City and Hoboken have a joint contract with Citi Bike). The cities worked together on the design and consulted with Hudson County for how the project would interface with a county intersection at its northern end, eventually coming to a short-term, quick-build design that was acceptable to all parties.

*Figure 13. This protected bikeway provides a critical connection between Jersey City and neighboring Hoboken (City of Jersey City)*

of the High-Injury Network that accounts for all streets, regardless of jurisdiction. In quarterly and annual reporting, Transportation Planning tabulates fatalities and serious injuries on City streets as well as the total number of fatalities and serious injuries across all streets.

By experimenting with new techniques and transforming major local corridors, as described in the sidebar on p. 9, Jersey City has gained credibility as a municipality that is committed to implementing truly Complete Streets that are safer for all users.

## Tactical Interventions

Jersey City has undertaken a number of strategies and projects that highlight its tactical and iterative approach to creating safer, complete streets at various scales. Table 1 highlights some of the low-cost, high-impact tactics that Jersey City has used to implement change, and the following project examples showcase the ways planners have translated these tactics into action on the ground. In many cases, action began with temporary pilot or demonstration projects that became permanent changes to Jersey City's streets.

### Table 1. Jersey City Traffic Safety Tactics

| Traffic Tactic | Illustration |
|---|---|
| **Protected bike lanes –** A key part of making biking, rolling, and scooting accessible for all ages and abilities, this style of bike lane provides a buffer from moving vehicular traffic and can be deployed quickly and at low cost with paint and flexible delineators. More durable pavement treatments and more robust physical protection can be added over time. |  |
| **Curb extensions –** Visually or physically extends the sidewalk at pedestrian crossings to narrow the crossing distance, slows turning vehicles, and increases visibility by eliminating obstructions to sight distances at intersections ("daylighting"). Like protected bike lanes, these can be deployed with paint and flexible delineators cost-effectively, and later upgraded with more robust protective barriers, such as planters, or raised to sidewalk level with concrete. Bonus: Engage community members or local artists in painting designs within the curb extensions for added placemaking. |  |
| **Bus boarding islands –** Provides additional space for passengers to wait for the bus and speeds up bus operations by allowing the bus to stop in the travel lane. When paired with a bike lane, allows the bike lane to continue along the curb without conflicting with bus movements. Can be deployed quickly with paint and bollards before installing a modular platform or upgrading to concrete. W |  |
| **Street murals –** Enhances sense of identity and placemaking while also serving as traffic calming through the use of artistic designs painted directly on the street. Paint can be applied to crosswalks, curb extensions, street segments, or an entire intersection, using materials as temporary as chalk or tempera paint. |  |
| **Mini-roundabouts or chicanes -** Visually narrows the street and requires drivers to deviate from a straight path of travel, which results in slower speeds. These can also be deployed with paint and flexible delineators before implementing permanent configurations that may incorporate concrete and green infrastructure. |  |
| **Traffic signal timing changes -** Supports safer and more convenient pedestrian travel with simple changes to existing signals, such as pedestrian recall to automatically include a pedestrian walk phase during every signal cycle, an all-pedestrian phase ("pedestrian scramble") that provides a dedicated phase for pedestrians to cross in all directions, or changes to the signal phasing to reduce unsafe conflicts. |  |
| *(Photos: City of Jersey City)* | |


*Figure 14. The Newark Pedestrian Plaza was installed in 2015 using leftover tennis court paint and planters (above); in 2022, it was upgraded with landscaping, pavers, new lighting, and seating (below) (City of Jersey City)*

### *Newark Avenue Pedestrian Plaza*
**Type: Pilot to permanent pedestrian plaza**

This placemaking project is a great example of how tactical pilot and demonstration projects have the power to permanently transform a space and lead to lasting change.

In 2015, Jersey City barricaded off one block of Newark Avenue, a busy mixed-use corridor that runs diagonally through the historic downtown and its historic street grid, ending at the Grove Street Plaza (a major rail and bus transit hub). Due to its central location and geometry, the block had already been temporarily closed for street festivals and celebrations a few times per year, demonstrating that the street could serve a purpose other than vehicular traffic. Initially championed by an aide to the mayor who would become the City's Business Administrator, the project was implemented as a two-month pilot and was only closed to vehicular traffic during certain times of day (Mondays through Fridays, 3pm–midnight, and all day on Saturdays and Sundays). It served as a reminder that champions for innovative planning ideas can come from outside of predictable city departments or stakeholders.

With support of the mayor and local community, a more permanent plan for the pedestrian plaza was advanced in 2016, at which time the City's new transportation planner became involved and encouraged the use of tactical methods of placemaking. All it took was some leftover green tennis court paint and planters to transform a previously auto-centric street into a safe place for pedestrians to walk, restaurants to set up outdoor seating, and families to let their kids play (Figure 14).

The pilot was so successful that in 2018, the plaza expanded into two more blocks and incorporated portions of two intersecting side streets. As Transportation Planning's role in the project grew, they were able to influence the design to include more placemaking and amenities that would be incorporated into the permanent design. The project was passed to the Engineering Division, who completed the permanent improvements in 2022: pavers to raise the street to sidewalk level, mature street trees, new overhead wire lighting, custom benches, bike racks, and a stage for performances, among other enhancements. What once was a space dominated by vehicles is now a thriving place for people to shop, dine, and move through safely.

### *Bergen Avenue Protected Bike Lanes*
**Type: Demonstration project to permanent protected bike lanes**

Jersey City also uses a pilot-to-permanent approach for many of its bike lanes. Bergen Avenue is a busy north-south mixed-use corridor on the High-Injury Network that leads to the Journal Square Transportation Center, another major rail and bus transit hub in the region. The corridor is at the center of a diverse neighborhood in a city consistently ranked among the top two most ethnically diverse cities in the United States (McCann 2023).


*Figure 15. Volunteers helped paint over an exclusive right turn lane as part of a demonstration project to improve the safety of the corridor for bicyclists and pedestrians (above); inexpensive but more permanent treatments were installed as a result of the demonstration project's success (left) (City of Jersey City)*

As part of Transportation Planning's development of the City's first Bicycle Master Plan in 2018, a four-day demonstration project was implemented by the project team to showcase a "road diet" (conversion of four travel lanes to three) and adding a parking-protected bicycle lane. The design of the demonstration project was approved by the Traffic Engineering team and made possible with the assistance of the Department of Public Works and volunteers from a local bike advocacy group, who helped to paint the lanes. The demonstration was so successful that the Transportation team worked with their on-call traffic engineering consultant to refine the design to incorporate a two-way cycle track and used low-cost materials (green waterborne paint, flexible delineator posts) and existing on-call striping contractors to perform the installation of the new configuration the following year (Figure 15, p. 11).

An evaluation of the corridor following the installation found that biking increased, nearby bike share stations saw increases in usage larger than the system as a whole, vehicular travel times during peak periods were either the same or reduced, and the 85th percentile speeds were under the posted 25 mph speed limit. As a result of successful coordination with county government, Hudson County will extend the Bergen Avenue bike lane north to the Journal Square Transportation Center as part of an upcoming federally funded safety grant project.

### *Grove Street*

**Type: First protected bike lanes/cycle track, reallocation of travel and parking lane to pedestrian plaza, protected intersection**

Coming out of the City's Bicycle Master Planning process, Jersey City's mayor announced a commitment to installing nine miles of protected bike lanes to city streets over the next year. One of these projects was Jersey City's first permanent protected bike lane, an upgrade of conventional bike lanes to a two-way cycle track installed in July 2019 on Grove Street using the City's now go-to formula of green waterborne paint, flexible delineator posts, and use of on-call striping contractors for installation.


*Figure 16. Paint and flexible delineators were used to quickly create Jersey City's first protected intersection connecting two protected bike lane paths (City of Jersey City)*

*Figure 17. A year after implementing the Grove Street bike lanes, Jersey City converted one direction of travel and a parking lane into a pedestrian plaza with outdoor dining (City of Jersey City)*

Running past City Hall to the Grove Street PATH station and adjacent to the most heavily utilized bike-share station, this was another high-visibility project that demonstrated the City's commitment to multimodal infrastructure to improve safety on High-Injury Network streets. It also demonstrated a strategy that transportation planners and engineers used to make bike lane projects more palatable to the wider community: finding room for bicycle facilities by reducing the width of travel lanes rather than removing travel lanes or on-street parking. Grove Street's 16-foot lanes were first narrowed to 11-foot lanes with the addition of the conventional bike lanes, then eventually narrowed down to 10-foot lanes to accommodate the cycle track.

At the intersection of Grove Street with Grand Street, another high-crash corridor that was redesigned in 2020 with protected bike lanes after a successful campaign by the local advocacy group Bike JC, Transportation Planning and Traffic Engineering worked together to incorporate the City's first protected intersection into the striping plan. The use of paint and flexible delineator posts significantly slow turning vehicles and allow cyclists to cross the intersection with fewer conflicts (Figure 16).

At the start of the COVID-19 pandemic when restaurants were struggling and people craved more outdoor space, Transportation Planning with support of the Mayor's Office quickly took advantage of the opportunity to further transform Grove Street by converting one direction of travel and a parking lane into pedestrian space using planters and parklets for spreading out and outdoor dining (Figure 17). In 2023, Transportation Planning has kicked off a visioning study to engage the community in a long-term plan to make these improvements permanent.

### *Washington Boulevard*

**Type: Road diet, protected bike lanes, iteration from flexible bollards to concrete Jersey barriers**

Washington Boulevard is a major north-south corridor that runs through a dense office, commercial, and residential neighborhood known as Newport in downtown Jersey City. Prior to 2019, the corridor consisted of six vehicular travel lanes with a planted median divider. In part due to safety issues and the excess capacity along the boulevard, the corridor was identified as a priority for protected bike lane facilities in the City's Bicycle Master Plan and advanced as one of the City's first nine miles of protected bike lanes.

To complete a "minimum grid" network for short-term implementation, Transportation Planning had worked with consultants to create a project prioritization matrix containing both quantitative and qualitative measures, such as safety, equity, and access to transit. In 2019, this led Jersey City's Transportation Planning and Traffic Engineering teams to advance a one-mile-long road diet that converted one travel lane in each direction to protected bike lanes and added curb extensions, pedestrian refuge islands, updated signage, and improved pedestrian crossings (Figure 18).

With these changes, pedestrian crossing distances have been significantly reduced and continuous protection has been provided to micromobility users. This previously unsafe corridor now provides critical safe connections to multiple light rail, heavy rail, commuter rail, and bus stations. Since implementation, the design of the corridor has consistently been updated through an iterative design process that included revised striping, more robust green epoxy-based paint, and upgraded protection for the bike lanes from plastic bollards to concrete Jersey barriers.

*Figure 18. Washington Blvd before road diet (above) and after quick-build improvements (below) (Street Plans)*

### *Heights Neighborhood Intersection Mural*

**Type: Curb extension with youth-led mural, pop-up bike lane demonstration**

Palisade Avenue is a heavily traveled multimodal north-south corridor that connects multiple neighborhoods and Hudson County municipalities. Jersey City's Office of Innovation, working in coordination with the Division of Transportation Planning and Division of Sustainability on a "Year of Open Space" (YoOS) initiative, identified the intersection of Booraem Avenue and Palisade Avenue as a prime location for safety improvements due to the challenging historic intersection geometry, unsafe vehicular turning conditions, and underutilized space.

To address these safety concerns and activate the space, the YoOS team, supported by a placemaking and transportation planning consultant, used a series of tactical Vision Zero strategies. These included installing a two-block-long pop-up protected bike lane and adding painted curb extensions that reduced curb radii and the crossing distance. To enhance the curb extensions and build community support for the project, the team commissioned a Jersey City student who had been

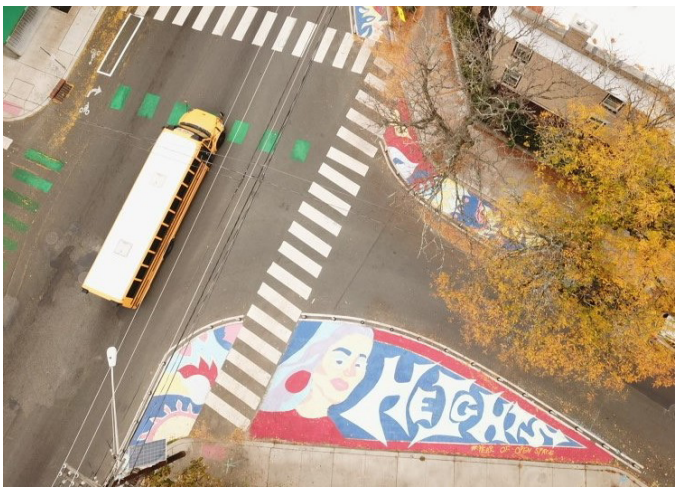

*Figure 19. A local youth artist designed this mural that acts as traffic calming and shortens the crossing distance for pedestrians (Beatriz Bofill, Bike JC)*

involved in the City's Mural Arts Program (JCMAP) to design and lead a group of local volunteers in painting a mural in the reclaimed street space (Figure 19, p. 13). Initiated in 2013 and funded by a Clean Communities Grant, the Mural Arts Program links established and emerging local, national, and international mural artists with property owners as part of an innovative beautification program that reduces graffiti, engages local residents, and is transforming Jersey City into an outdoor art gallery. A group of artistically inclined youth have an opportunity to work alongside professional mural artists each summer, cultivating a talent pool of local artists that can be called upon to contribute to a lively streetscape.

## Action Steps for Planners

As natural systems-thinkers and integrators, planners are well-equipped with the skills and knowledge to spearhead Vision Zero efforts in the communities they serve as staff planners, consultants, or advocates. Planners can use the information and examples from this Memo to engage in the action steps listed below. While the steps are listed in a suggested order, each community is in a different stage in their journey to make streets safer and may complete some steps concurrently or in a completely different order.

1. **Engage internal and external partners.** To truly achieve systems-level change, a diverse coalition representing multiple disciplines and perspectives inside and outside of the organization is critical. It is helpful to have assembled this representation at the outset of a Vision Zero Action Planning process so that the resulting plan is realistic and has buy-in from the entities charged with implementation, but new partners can be engaged throughout the pursuit of Vision Zero to support specific projects and programs. It is recommended that this takes the form of a task force, committee, or advisory board for continuity and accountability.
2. **Identify high-priority, high-impact locations based on safety and equity.** This analysis typically occurs at the beginning of a Vision Zero Action Planning process and results in the creation of a High-Injury Network map to identify where the recommended action items and project priorities will be located. Faced with limited resources, a community's investments in these areas are expected to have the most safety impact, so this map can be helpful in the project prioritization and selection process. As safety improvements are implemented, this analysis can be updated periodically to understand if projects in the targeted areas have resulted in reductions in serious injuries and fatalities, or if new streets have emerged as hot spots. Given that there is often a lag in complete crash records being made available for analysis and some projects may take years to implement, the timeframe for refreshing this analysis is likely every three to seven years, depending on the circumstances of your community.
3. **Develop an action plan.** A Vision Zero Action Plan builds on the analysis of when, where, and why crashes occur to identify specific, measurable actions to address the conditions that lead to serious injury and fatal crash outcomes. If your community still needs to develop an action plan, there is unprecedented opportunity through the USDOT's Safe Streets and Roads for All (SS4A) grant program, which dedicates a significant portion of funding for planning activities and in its first round funded all applications for planning grants. Once a plan is developed, this same grant program aims to fund action items to measurably improve the safety of streets for all users.
4. **Experiment with demonstration projects and quick-build, low-cost materials.** Addressing Vision Zero requires urgency and calls for progress measured in days and weeks rather than months and years. There is mounting evidence for the types of interventions that improve safety for all users. Nearly all of these changes can be implemented at relatively low cost without requiring extensive engineering design, as has been shown in the examples implemented in Jersey City over the past five years. By quickly implementing changes, communities can get immediate feedback about what works in their community and can engage in more meaningful dialogue with members of the public, elected officials, and other departments.
5. **Iterate, adapt, systematize.** Achieving Vision Zero is a bold goal that requires a shift in how things have traditionally been done as it relates to the transportation system. Even once the goal of zero traffic deaths is achieved in a given community in a given year, maintaining zero in the years to come will require continued diligence. This requires a constant commitment to reviewing data, engaging the community and partners, adapting based on what's working and what isn't working, and finding ways to embed Vision Zero-centered principles and practices into the systems underlying how the streets operate.

## Conclusion

When it comes to creating livable and safe places, planners already possess a body of knowledge of which elements to include: human-scaled streets that are easy to cross and naturally slow traffic, a mix of uses within short proximity that allow people to meet many of their daily needs on foot or on bike, trees and plantings to provide shade and a barrier between the sidewalk and moving vehicles, and so much more. These are the same elements that can also contribute to sustainability, resiliency, and affordability, additional goals that guide many planning activities.

Achieving Vision Zero requires that these interventions are pursued with an even greater sense of urgency and that planners take a more active role in translating a vision for safe streets into concrete, iterative improvements that can be implemented in the day-to-day engineering of streets. Jersey City has shown that significant changes can be achieved using tactical, quick-build approaches that prioritize the most vulnerable users of the street and encourage active transportation. By bringing multiple disciplines and partnerships to the challenge, developing a tactical Action Plan, adopting a quick-build mindset to implement changes quickly, and weaving safety into the everyday culture

and processes of city-building, planners can lead the efforts towards achieving zero traffic deaths in their communities.

## About the Authors

Elias Guseman, AICP, is a Senior Transportation Planner in Jersey City's Division of Transportation Planning and has worked for Jersey City since June 2019. He moved to Jersey City after graduating from the Edward J. Bloustein School's Master of City and Regional Planning Program at Rutgers University. With Jersey City, he has had the opportunity to work on a host of bike, pedestrian and micromobility projects that aim to make the City a leader in active transportation and has led a series of planning studies to address long standing transportation inequities and issues. Along with the rest of the Transportation Planning team, he is an avid cyclist and city explorer.

Michael Manzella, AICP, has served as the Director of Transportation Planning in Jersey City's Division of Transportation Planning since March 2022. In the five years prior, he served as the Director of Transportation for the City of Asbury Park, during which the City implemented its Complete Streets policy by adopting a bicycle and pedestrian master plan, installing over 10 miles of bicycle facilities, launching the Jersey Shore's first bike share and scooter share programs, and developing several Open Streets programs, among other initiatives. He is a proud MCRP alum from the Bloustein School at Rutgers University and studied undergraduate engineering at Stevens Institute of Technology in Hoboken, New Jersey.

Lyndsey Scofield, AICP, PMP, is a Senior Transportation Planner in Jersey City's Division of Transportation Planning with a passion for making transportation work better for everyone. She moved to Jersey City in 2012 while working for NJ TRANSIT and pursuing her master's degree in urban planning at NYU Wagner School of Public Service. As a resident, she first got involved with community groups focused on transforming public space through advocating for green infrastructure, constructing pop-up parklets on PARK(ing) Day, and participating in group bike rides on city streets. As an employee of Jersey City, she now has the privilege to work every day on projects that make streets safer for all users, encourage users of all ages and abilities to feel comfortable choosing active modes of transportation, and help support the sustainable growth of the City.

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