

City of San Antonio Safe Streets & Roads for All (SS4A) Grant Award

Zarzamora Street Midblock Crossings and High Injury Network (HIN) Safety Campaigns



TRANSPORTATION

Project Description

Through the 2022 United States Department of Transportation, Safe Streets and Roads for All (SS4A) grant, the City was awarded \$4.4 Million to deliver pedestrian safety improvements for:

- **Construction of eight (8) pedestrian refuge mid-block crossings with islands, vegetation and tree canopy with pedestrian hybrid beacons (PHB) on Zarzamora Street, across 12 miles.**
\$4,250,000
- **Comprehensive safety and education workshops using billboards, bus stop/shelter signage and bus advertisements along Zarzamora Street.**
\$150,000

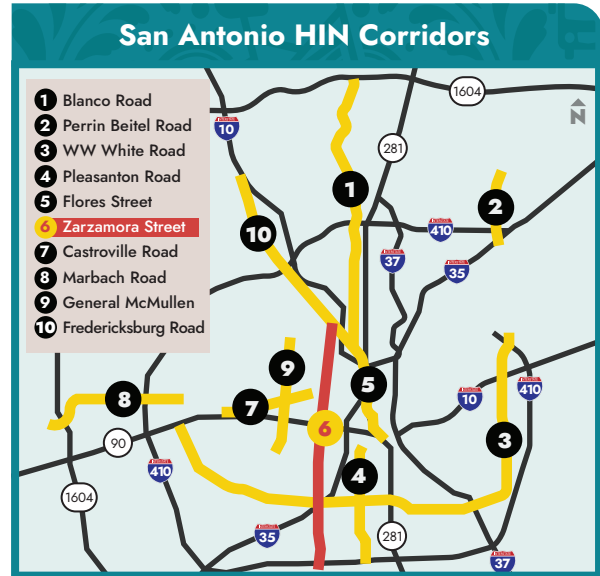


Figure 1: San Antonio HIN Corridors Map.



Figure 2: Zarzamora Street - Pedestrian Refuge Mid-Block Crossing Locations Map.

Project Background

In 2016, the City of San Antonio produced its first Vision Zero Action Plan (Action Plan) focusing on the five essential elements of a safe transportation system:

- **Education**
- **Encouragement**
- **Engineering**
- **Enforcement**
- **Evaluation**

And most recently incorporating **Equity**.



Figure 3: Midblock crosswalk with pedestrian refuge.

This project will deliver:

- 8** pedestrian refuge islands
- 1/8** acre of urban greenspace
- \$152,863** total benefits
- \$84,750** Triple Bottom Line Net Present Value

Figure 4: Project deliverables.

SS4A Grant Award

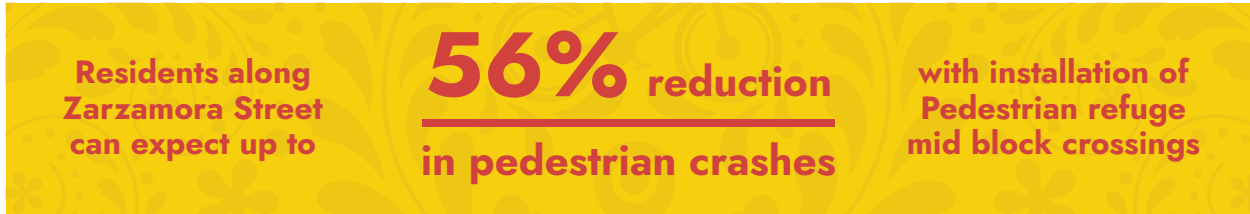


Figure 5: Federal Highway Administration's Proven Safety Countermeasures and the supporting research detailed in the Desktop Reference for Crash Reduction Factors.

Project Benefits

In addition to the pedestrian safety concerns, according to the City's Climate Ready Action Plan report, Zarzamora Street falls within the zip codes where residents are most likely to suffer environmental and health harm while remaining the "least equipped to recover from the damage" from factors such as elevated temperatures and flood risks.



Figure 6: Zarzamora Street Fatalities and Serious Injuries.



Figure 7: Father and daughter Crossing mid-block on Zarzamora St.

Targeted safety campaigns along the City's 10 HIN corridors will help illuminate the importance of following posted speed limits, obeying the law and crossing at designated crossings on these dangerous roadways.

During its 3-month pilot of the safety campaign, residents and businesses along Culebra Road shared their experiences of the roadway through telephone calls, hand-written letters, on-line and with over 20,000 mailed surveys. This information was captured in this word cloud (Figure 9).

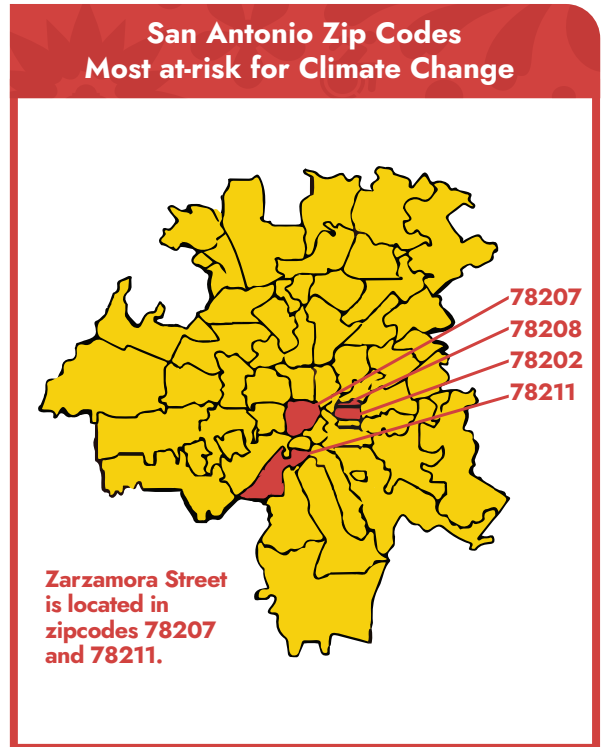


Figure 8: Most at-risk zip codes in San Antonio.



Figure 9: Word cloud representing the experiences shared by 20,000+ residents and businesses along Culebra Road.



Figure 10: Federal Highway Administration's Proven Safety Countermeasures.





SAN ANTONIO

Drive safe. Bike safe. Walk safe.

City of San Antonio

Zarzamora Street Mid-block Crossings and High Injury Network (HIN) Safety Campaigns





TABLE OF CONTENTS

| | |
|---|-----------|
| I. OVERVIEW..... | 1 |
| Introduction..... | 1 |
| Safety Context..... | 2 |
| Jurisdiction..... | 2 |
| Background..... | 3 |
| II. LOCATION..... | 3 |
| High-Injury Network..... | 3 |
| Project Location..... | 4 |
| III. RESPONSE TO SELECTION CRITERIA..... | 5 |
| Safety Impact..... | 5 |
| Equity, Engagement and Collaboration..... | 7 |
| Effective Practices and Strategies..... | 8 |
| Climate and Sustainability, and Economic Competitiveness..... | 9 |
| IV. PROJECT READINESS..... | 10 |
| Project Timeline..... | 10 |



THE PROJECT

The City of San Antonio seeks federal investment to:

1 **Construct 8**
mid-block crossings with pedestrian hybrid beacons (PHB) on **Zarzamora Street**
\$4.25 million

2 **Engage 10**
comprehensive safety and education campaign using billboards, bus stop/shelter signage on 10 High Injury Network (HIN) corridors
\$1.25 million

\$5.5 Million

The City is requesting \$5.5 million to leverage \$1.1 million in local funds to deliver these pedestrian safety improvements.

I. OVERVIEW

Introduction

Beginning in 2014, the increase in deadly crashes prompted the City of San Antonio (City) leadership to take action to adopt the Vision Zero approach to achieving zero deaths and serious injuries. In 2015, a Vision Zero Task Force was convened, comprised of various departments within the City of San Antonio as well as community members and stakeholders (See Figure 14 on page 8). The result of these efforts was the City’s first Vision Zero San Antonio (VZSA) Action Plan, complete with strategies, projects, and resources to improve the safety of pedestrians, cyclists, and drivers on City streets.



Figure 1: 2014 Pedestrian Deaths that Prompted VZSA

In line with the five essential elements of a safe transportation system: **Education, Encouragement, Engineering, Enforcement, and Evaluation**, the City began producing Vision Zero [Severe Pedestrian Injury Area](#) (SPIA) and [Severe Bicyclist Injury Area](#) (SBIA) reports as part of the “Evaluation” element of the VZSA program. The first [SPIA \(2017\)](#) report included crash data from 2011-2015 and resulted in 11 pedestrian safety projects completed on several City High Injury Network (HIN) Corridors. The 2020 SPIA/SBIA reports included crash data from 2014-2018 and have informed the identification of the most dangerous roadways in the City’s HIN and VZSA began its efforts to tackle “Engineering” and “Education” in those locations. In 2022, the City allocated \$6.2 million to

- 1.) Plan, design, and construct mid-block crossings,
- 2.) Develop a pilot safety campaign and
- 3.) Update the VZSA Action Plan in 2023 to integrate the new “E” – Equity.

5 Essential Elements of a SAFE Transportation System

- Education
- Encouragement
- Engineering
- Enforcement
- Evaluation

Figure 2: Five (5) Elements of a Safe Transportation System





Safety Context

San Antonio, located in Bexar County, Texas, is the 7th largest U.S. city. More than 2 million people (2020 Census) live within Bexar County. The county averages 67 pedestrian fatalities a year – 1.7 times higher than the national average, according to the Federal Highway Administration (FHWA).

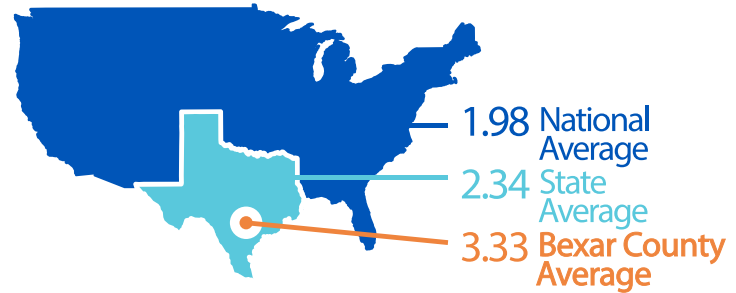


Figure 3: FHWA Pedestrian Fatality Rates (Source: TxDOT)

The high number of deaths led the FHWA to categorize the county’s Alamo Area Metropolitan Planning Organization (AAMPO) as the only MPO/Region in Texas with a [Focused Approach to Safety](#) on pedestrians. As the largest municipality within Bexar County and the TxDOT San Antonio District, the City of San Antonio contributes to the majority of these pedestrian fatalities.

As the City began its Vision Zero initiative in 2016, it was also completing a three-pronged planning effort to guide the growth and development of the City to achieve its mobility, land use and sustainability goals by 2040. Known as [SA Tomorrow](#), the City’s [Multi-Modal Transportation Plan](#), [Comprehensive Plan](#), and [Sustainability Plan](#), these plans outlined key strategies and programs the City will implement and regularly report on, to ensure a better quality of life for its current residents and the additional one million residents anticipated to move to the City by 2040. The projects proposed in this grant application will support the City’s sustainability and mobility goals detailed in the aforementioned plans, as well as save the lives of some of our most vulnerable road users.

Jurisdiction

San Antonio rises in the southwestern part of Texas and is home to one of the largest populations of active-duty military and veterans, as well as mission-critical commands, including military medicine, cybersecurity, pilot training, and basic training. Tourism and its related hospitality services, health care, aerospace, bioscience, cybersecurity, green technologies, and information technology also fuel the local economy.

This diverse job base contributes to the reason why San Antonio is the largest majority-Hispanic city in the United States. San Antonio’s vibrant military economy is also the underpinning of the largest Mexican American middle class in the nation.

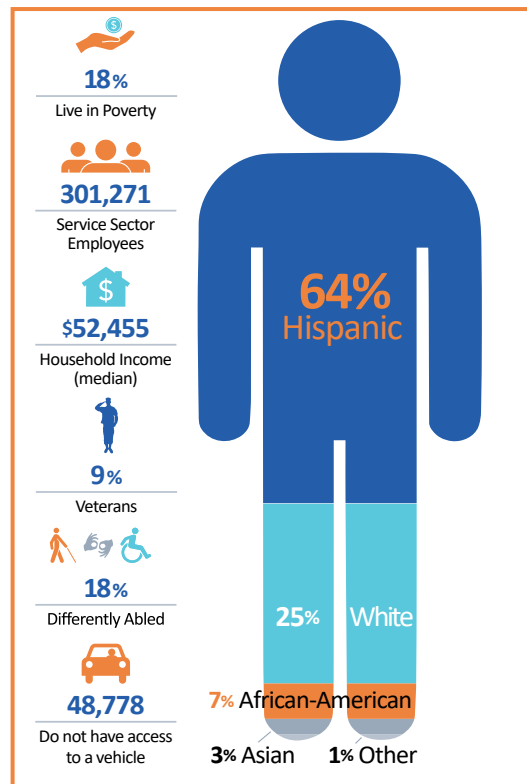


Figure 4: San Antonio Demographics (Source: 2019 US Census Bureau)



Background

Given the importance of the military to the City in terms of employment and national security, the 1956 National Interstate and Defense Highways Act, also known as the Eisenhower Federal Highway System, was instrumental in ensuring fast and efficient deployment of the military in times of war. At that time, San Antonio had 258 centerline miles of roadway. Sixty-six years later, the City is responsible for maintaining and managing more than 4,200 centerline miles of roadway. The auto-centric focus of the 20th Century has collided with



Figure 5: San Antonio Service Members

the 21st Century sustainability, quality of life, and multi-modal goals of many residents and visitors today. The former Federal Highway System, which included urban arterials similar to Zarzamora Street, are now home to communities with schools, residences and places of worship. These urban arterials have disproportionately impacted San Antonio’s low-income communities of color where according to the [City’s Metropolitan Health District \(MetroHealth\) SA Forward Blueprint for 2021-2026](#), “...almost every major adverse health outcome and cause of death is disproportionately represented in Black and Hispanic/Latino communities.”

I. LOCATION

High-Injury Network

According to the City’s SPIA data, 42% of all fatal and suspected serious pedestrian crashes have occurred on 1% of the City’s roadways. Zarzamora Street falls within the 1% needing pedestrian safety improvements, making it one of the 10 HIN corridors (Figure 6) the City has prioritized. **The City, therefore, is seeking federal investment to construct 8 (eight) mid-block crossings along Zarzamora Street and engage residents along the 10 HIN corridors with safety campaigns to educate, encourage and enforce existing traffic laws.**

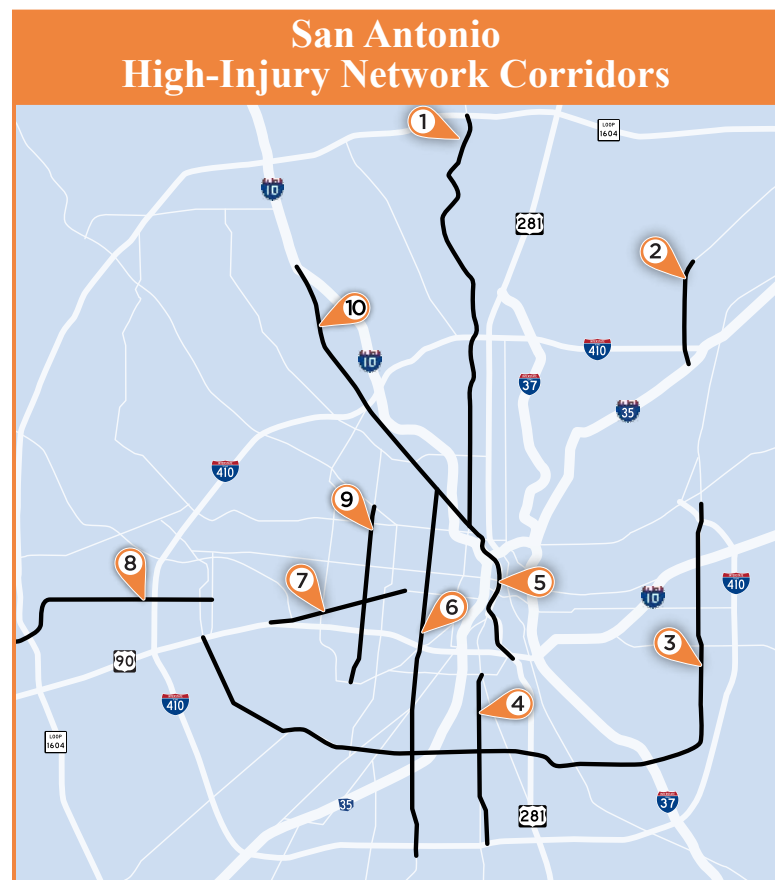


Figure 6: San Antonio High-Injury Network Corridors (Source: TxDOT)



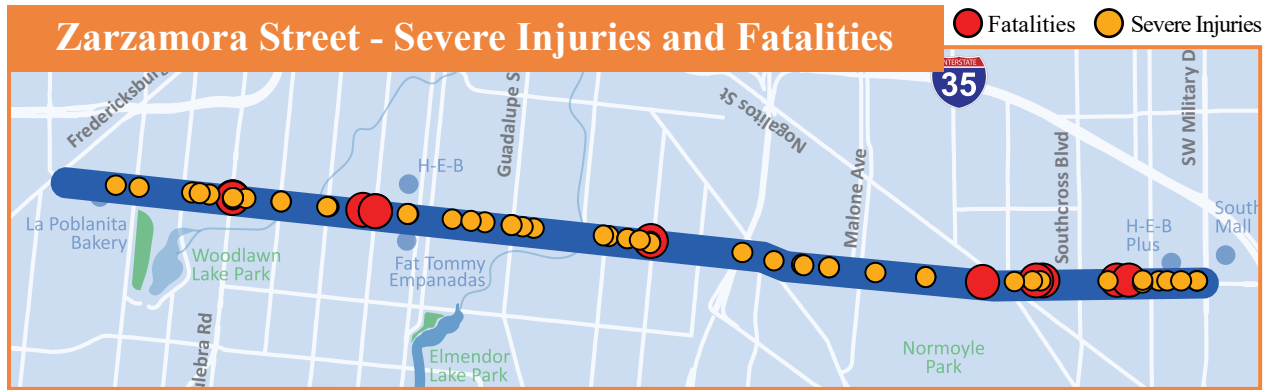


Figure 7: Severe Injuries and Fatalities 2016-2020 (Source: TxDOT)

Project Location

Zarzamora Street Mid-block Crossings

The City will install 8 (eight) mid-block crossings with pedestrian refuge islands and pedestrian hybrid beacons on Zarzamora Street in the City’s historically underserved Westside. The mid-block crossings will also include illumination and lighting, signage, vegetation and tree canopy, and high-visibility crosswalk markings.

Zarzamora Street is a heavily traveled 12-mile corridor with four (4) to six (6) lanes and posted speeds between 30 and 35 miles per hour. Drivers along this corridor, however, have been observed traveling at higher rates of speed. This behavior has contributed to 16 fatalities and 60 serious injuries on Zarzamora Street between 2016-2020.

The Zarzamora Street Mid-block Crossings are critical to the safety of pedestrians and cyclists who travel the corridor, sharing the road with 17 VIA Metropolitan Transit (VIA) bus routes serving 19,633 transit riders each weekday combined with 71,999 average daily auto trips.

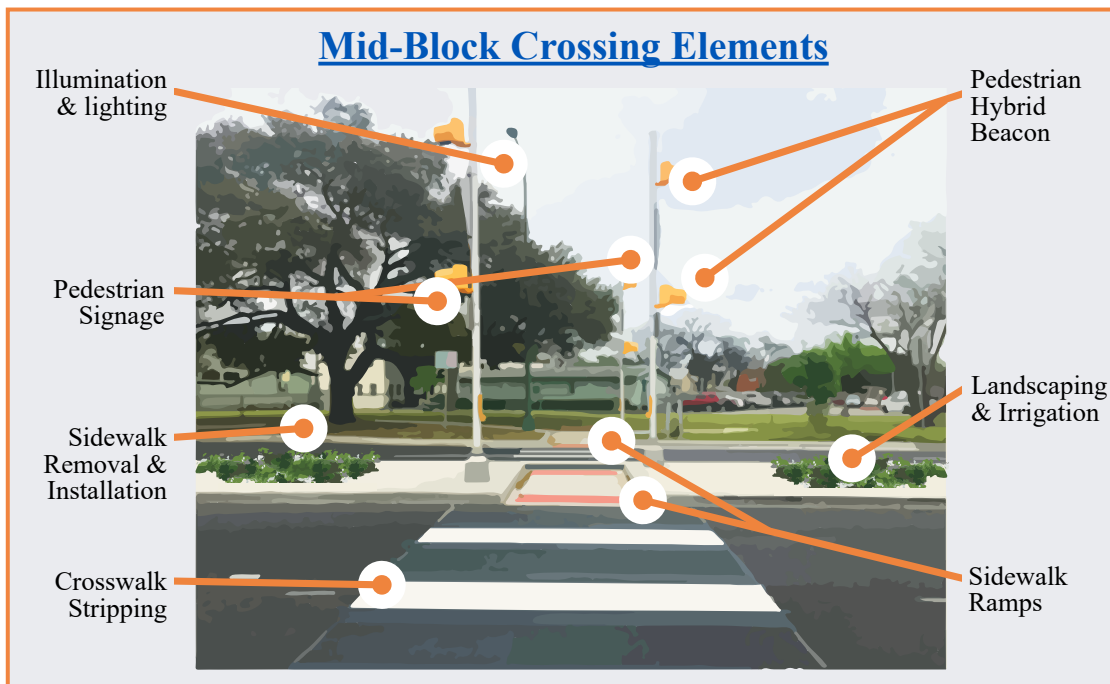


Figure 8: Mid-block Crossing Elements





High-Injury Network (HIN) Safety Campaigns

The HIN Safety Campaigns will be modeled after the City-initiated pilot safety campaign conducted during the summer of 2022 along Culebra Road, a previously identified dangerous urban arterial. The campaign focused on input from citizens regarding their experiences walking, biking, and driving the corridor and the challenges they faced traveling to work, school, and other daily activities. The three-month pilot safety campaign provided insight into the gaps in knowledge of roadway rules, such as driving posted speed limits and the safest locations to cross the road. It also showed how consistent education, encouragement and enforcement efforts can help change behaviors. This pilot campaign proved invaluable in gathering feedback on the community’s safety concerns and will help guide the 10 HIN safety campaigns.

III. RESPONSE TO SELECTION CRITERIA

Safety Impact

The Safety Problem

As detailed in numerous Vision Zero programs across the nation, roadway safety begins with a comprehensive approach and application of Vision Zero’s original five “E’s” along with the integration of an [“E” for Equity](#).

By placing the mid-block crossings on Zarzamora Street, the City will be “Engineering” the roadway to facilitate the safe movement of pedestrians. The introduction of a visual object in the roadway will provide automobile drivers with the visual cue to slow down and anticipate pedestrian movements. Additionally, the installation of Pedestrian Hybrid Beacons (PHB) for signalization addresses the need for controlled access for pedestrians when crossing urban arterials like Zarzamora Street. By launching a safety campaign that seeks public engagement within the 10 HIN corridors, including Zarzamora Street, the City will gain valuable insight into the challenges pedestrians, cyclists and drivers face on these corridors.

The locations of the 8 mid-block crossings along Zarzamora Street were determined by a VZSA analysis of the corridor as it relates to crashes and needs. Figures 9 and 10 provide statistics that demonstrate the need for these improvements.

| Zarzamora Statistics | | | | |
|-----------------------------|-------------------------------------|---|-------------------------------|--|
| | Mid-block Crossing Locations | Pedestrian Count <i>(per 24 hours)</i> | Underserved Population | Pedestrian Crashes <i>(2016-2020)</i> |
| 1 | Cincinnati to Texas Ave | 159 | 4,648 | 17 |
| 2 | Henry to Lombrano St | 249 | 8,179 | 26 |
| 3 | Aunders to Chavez Blvd | 87 | 12,054 | 33 |
| 4 | San Fernando to El Paso St | 114 | 12,054 | 22 |
| 5 | A Street to B Street | * | 11,732 | 9 |
| 6 | Carroll to Jennings Ave | 95 | 10,810 | 2 |
| 7 | W Pyron to Mayfield Blvd | 59 | 8,115 | 9 |
| 8 | Sas to SW Military Dr | 230 | 8,115 | 9 |

Figure 9: Zarzamora Statistics

*Pedestrian counters Failed.





| High Injury Network Crash Statistics (Serious Injuries and Fatalities) | | | | | |
|---|---------------------|-------------|------------|----------|-------|
| | Corridors | Pedestrians | Bicyclists | Vehicles | Total |
| 1 | Blanco Road | 16 | 2 | 47 | 65 |
| 2 | Perrin Beltel | 9 | 4 | 17 | 30 |
| 3 | WW White Road | 37 | 2 | 103 | 142 |
| 4 | Pleasanton Avenue | 5 | 2 | 12 | 19 |
| 5 | Flores Street | 4 | 2 | 12 | 18 |
| 6 | Sarzamora Street | 35 | 3 | 38 | 76 |
| 7 | Castroville Road | 3 | 1 | 10 | 14 |
| 8 | Marbach Road | 7 | 0 | 26 | 33 |
| 9 | General McMullen | 11 | 3 | 18 | 32 |
| 10 | Fredericksburg Road | 27 | 4 | 33 | 64 |
| | | 154 | 23 | 316 | 493 |

Figure 10: High Injury Network Crash Statistics (Source: TxDOT)

Safety Impact Assessment

Based upon the [Federal Highway Administration’s Proven Safety Countermeasures](#) and the supporting research detailed in the [Desktop Reference for Crash Reduction Factors](#), it is estimated that the residents along the Zarzamora Street corridor can expect to see a reduction in pedestrian crashes by up to 56% with the installation of the mid-block crossings. With the addition of the 10 HIN Safety Campaigns, the community can see additional benefits of these low cost, high impact countermeasures proposed on Zarzamora Street also highlighted in Figure 11.

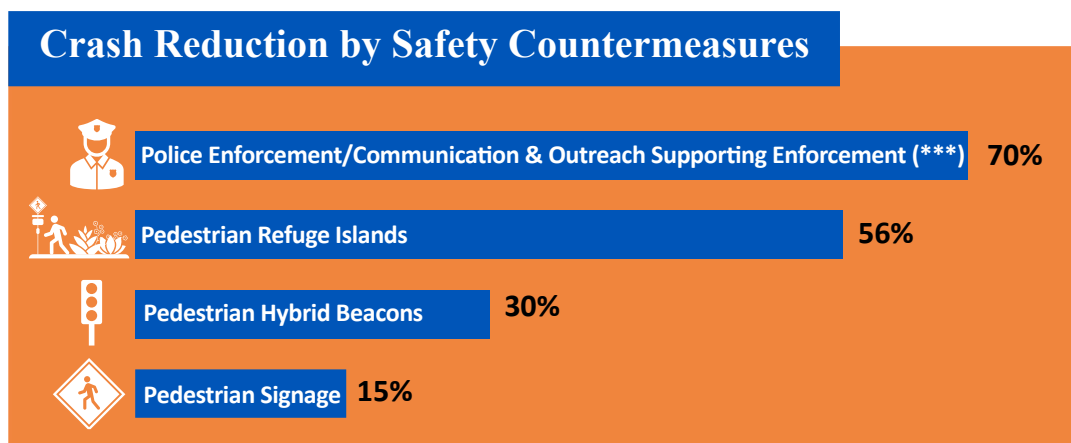


Figure 11: Crash Reduction by Safety Countermeasures





Implementation Costs

The cost to implement the eight (8) mid-block crossing will vary by size and design based on existing conditions and will include elements as illustrated in Figure 8. The costs associated with data and performance reporting are already captured in the evaluation element of VZSA program budget. The proposed cost of the project is also available in Figure 12.

| Safe Streets and Roads 4 All Grant Zarzamora Corridor | | | | High Injury Network Corridor Safety Campaigns | | | |
|---|---------------------|--------------------------|-------------|---|---------------------|--------------------------|-------------|
| Task | Number of Locations | Approximate Per Location | Total | Task | Number of Locations | Approximate Per Location | Total |
| Design | 8 | \$125,000 | \$1,000,000 | Safety Campaigns | 10 | \$125,000 | \$1,250,000 |
| Construction | 8 | \$406,250 | \$3,250,000 | Sub-total | | | \$1,250,000 |
| | | Sub-total | \$4,250,000 | Total SS4A Grant Request | | | \$5,500,000 |
| | | | | *20% Match | | | \$1,100,000 |

Figure 12: Implementation Costs

Equity, Engagement and Collaboration

Equitable Investment in Underserved Communities

One of the key components the City’s 2023 VZSA Action Plan will address is the disparity in the higher number of serious injuries and fatalities within low-income and communities of color who are disproportionately impacted by roadway crashes. Through data provided from the San Antonio Metro Health Department and other state and county stakeholders, the City will integrate additional initiatives, including the City’s new partnership with the Municipal Courts. The VZSA collaboration with the court system will help educate ticketed unlicensed drivers, ages 17 to 24, on the rules of the road and how to model their driving behaviors behind the wheel to reduce crashes and improve safety for pedestrians.

Meaningful Engagement Activities

San Antonio’s Vision Zero program uses an equity approach on all of its outreach and project prioritization efforts. Since its inception in 2016, the VZSA team has participated in over 400 outreach events reaching over 65,000 people, especially in the underserved communities of the City. These events ranged from focused [virtual town halls](#) and small-scale discussions to city-wide events such as [Siclovía](#) and [Safe Kids Day](#). In addition, the VZSA team engaged local delivery and fleet businesses in discussions with their staff regarding safe commercial vehicle operation.

Throughout the summer of 2019, a VZSA public service announcement was shown on 42 movie theater screens, sharing a message of driver and pedestrian safety with 42,840 people. In addition to community outreach, VZSA and partner agencies also gave safety presentations to school children in grades K-12 (Figure 13). The presentations included real traffic signals and situations, as well as active participation from students on how to walk and bike to school safely.

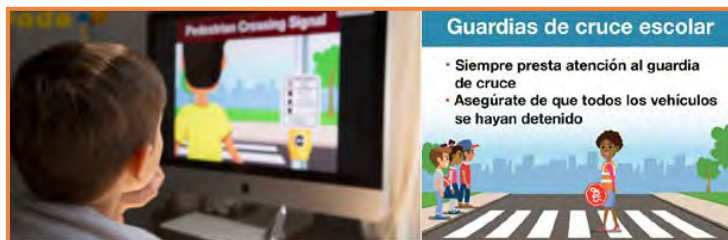


Figure 13: Child Watching a VZSA Safety Video/VZSA Video (Spanish version)



Leveraging Partnerships

A VZSA Stakeholder Group (Figure 14) was established to lead partner agencies in initiating actions to achieve Vision Zero by reviewing crashes with serious injuries, the root causes, and any potential solutions to mitigate future injuries. For the projects proposed, the City is additionally seeking partnerships with neighborhood associations, local schools and businesses, Bexar County agencies, adjacent municipalities, and local non-profits within each of the 10 HIN corridors to address any unique safety needs of a specific corridor. These collaborations will include not only the sharing of information and educational materials but also joint partnerships/events to provide outreach to the communities affected by high-risk crashes.



Figure 14: VZSA Stakeholder Group

Effective Practices and Strategies

Safe System Approach (SSA)

San Antonio’s Vision Zero program uses [FHWA’s Safe System Approach \(SSA\)](#) as the guiding paradigm to address roadway safety. The Zarzamora Street Mid-block Crossings and the 10 HIN Safety Campaigns address three of the five SS4A principles highlighted in light blue in Figure 15.

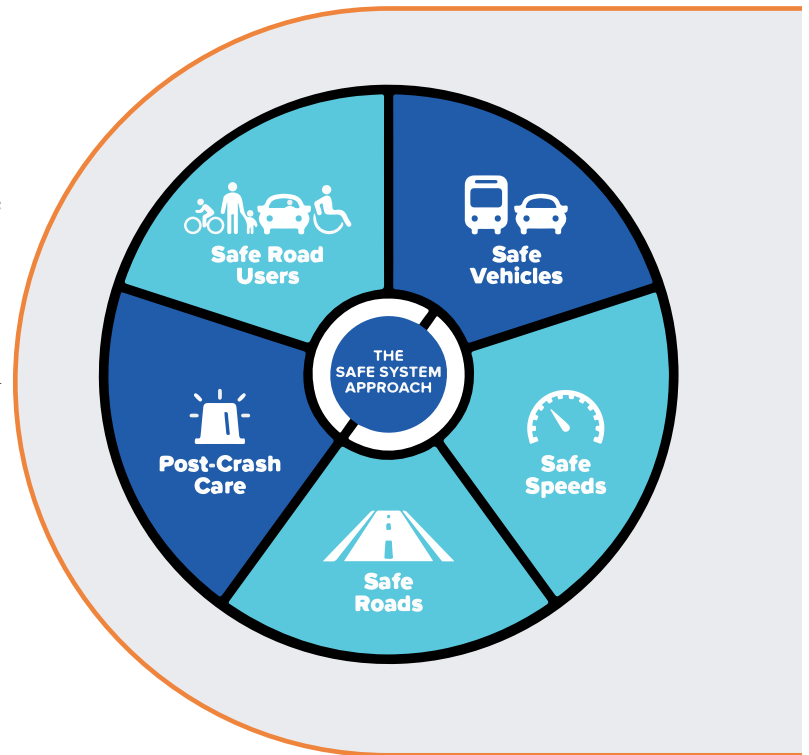


Figure 15: FHWA Safe System Approach





Climate, Sustainability and Economic Competitiveness

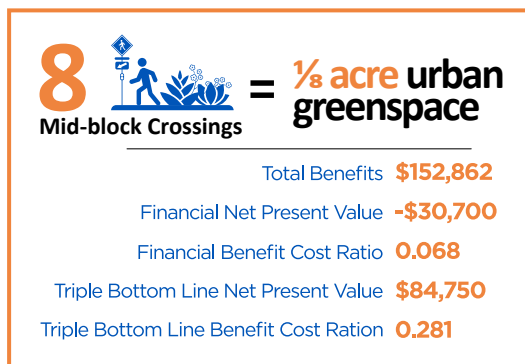
The City’s first Climate Action & Adaptation Plan (CAAP), [SA Climate Ready](#), was completed in 2019 and provides a roadmap to the City’s goal of achieving zero net emissions by 2050 while improving the health of its residents. One of the environmental strategies introduces urban agriculture into roadway infrastructure to reduce the urban heat island effect. Urban agriculture is a key feature of the Zarzamora Street Mid-block Crossings.

One recent report, The City of [San Antonio in 2036: The Impacts of Climate Change on Public Health](#), produced in partnership with the Bexar County Community Health Collaborative, indicates that Zarzamora Street, located in zip codes 78207 and 78411 (Figure 16), has the highest concentration of risk factors leading to poor health outcomes. The report specifically indicates that this “at-risk region” in the Westside, is “...the most likely to suffer the most harm, while the least equipped to recover from the damage” from environmental factors such as elevated temperatures and flood risk in these sections of the City. In July 2022, in his New York Times article, [“In San Antonio, the Poor Live on Their Own Islands of Heat”](#), Journalist Edgar Sandoval captured the health challenges experienced by members of these communities.



Figure 16: Most At-Risk Zip Codes

In a climate that often eclipses 100 degrees on a summer day, urban agriculture within the City’s streetscapes will play an important role in achieving the City’s net carbon neutrality goals. According to the [City’s 2021 Cost-Benefit Analysis of Key Climate Ready Strategies](#), in a scenario where an asphalt or concrete impervious cover is replaced by landscaping, the resulting mid-block crossing provides not only safety for foot traffic, but also enhances the health and environment for the residents who live around the mid-block crossing. Social and environmental benefits include: urban heat island mitigation, carbon emission reduction, flood risk reduction, and pollination. When combined with the



traditional financial reporting framework (such as capital, operations, and maintenance costs), the installation of the Zarzamora Street Mid-block Crossings will have a total benefit of \$152,862.50 at a 3% discount over 30 years. The triple bottom line-benefit cost ratio is .281, meaning that \$.28 cents is generated for every dollar spent, summarized in Figure 17.

Figure 17: Mid-Block Crossings Cost Benefit Analysis





IV. PROJECT READINESS

The City of San Antonio is capable and ready to complete the projects outlined in this grant proposal within five (5) years of when the grant is executed. As referenced above, the City recently completed similar projects on other streets within the City and is committed to implementing the Zarzamora Street Mid-block Crossings and the 10 HIN Safety Campaigns upon being awarded funding. The City has encumbered the necessary \$1.1 million in local funding for the match. The City has also hired a consultant to begin the planning, analysis and preliminary engineering needed to complete the improvements.

Project Timeline

Each mid-block crossing location’s implementation will be staggered and take 15 months to complete. The activity schedule for the planning, design, and construction of an individual mid-block crossing with important milestones is available in Figure 18. The HIN Safety Campaign for Zarzamora Street will begin during the planning stage and continue through post evaluation. The remaining HIN Safety Campaigns will be conducted biannually with all campaigns completed by December 2027.

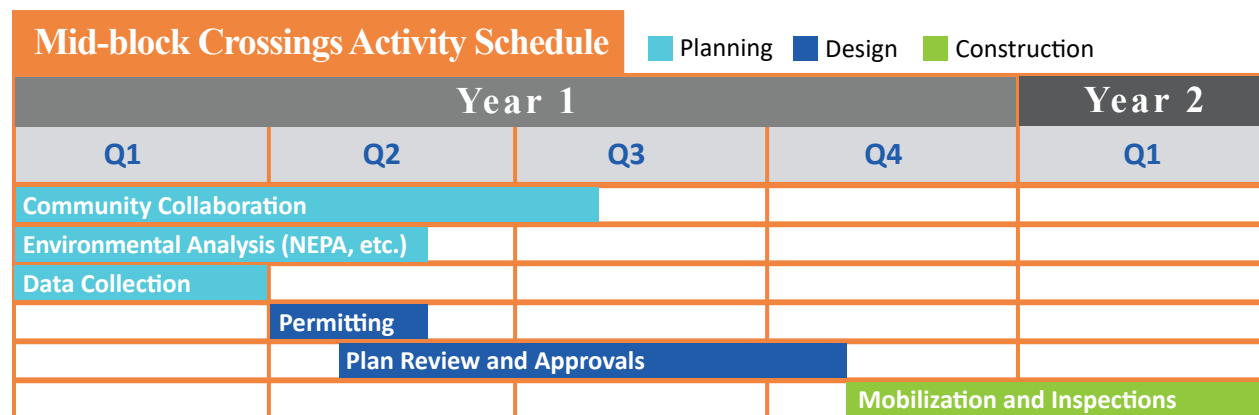


Figure 18: Mid-Block Crossing Activity Schedule

We thank you for your consideration of the City of San Antonio’s application. Through the support of this SS4A grant, San Antonio stands prepared to meet the challenges of its growing population and create safeguards for some of its most vulnerable residents as they walk, bike, or drive to their destinations. With your help, our San Antonio Vision Zero program is poised to take its Action Plan to the next level in making zero severe injuries and fatalities a reality in our community.

