

Memorandum

Date: August 1, 2024
To: The City of Brisbane
From: Fehr & Peers
Subject: **Baylands Safe Routes to School Study**

SF19-1036

Background

The proposed Baylands development includes a proposed Baylands Middle School (“Baylands School”), located near Main Street within the Specific Plan’s Roundhouse or Icehouse Hill District west of Roundhouse Park and Ecological Park (shown in **Figure 1**). The Baylands School will serve all Bayshore School District grade 6-8 students, which includes the Baylands development in Brisbane and the Bayshore Heights neighborhood of Daly City. The Baylands School is estimated to accommodate a minimum of 283 students, including 128 Baylands residents. All elementary students would attend the Bayshore School, which is currently the only school operated by the Bayshore District.

As the result of Baylands development and establishment of a second school for the Bayshore School District, some district students would live within walking or bicycling distance and would need to cross roadways with high traffic volumes and speeds to reach their schools. Both Bayshore Boulevard and Geneva Avenue are designated as regional arterials and do not currently have low stress walking and bicycling facilities. All Baylands elementary school students and Daly City middle school students would need to cross Bayshore Boulevard, which currently functions as a regional arterial with a speed limit of 45 miles per hour. Many of these students would also need to use the 500-foot portion of Main Street west of Bayshore Boulevard within the City of Brisbane that currently lacks sidewalks. For students residing in the Baylands development, those residing north of Geneva Avenue would need to cross Geneva Avenue on their route to both the existing Bayshore school in Daly City and the new middle school within the Baylands.

The City of Brisbane asked Fehr & Peers to review access to the proposed Baylands School and provide guidance on physical and programmatic safe routes to school interventions within the City of Brisbane’s portion of the Bayshore School District (study area shown in **Figure 1**). This memorandum provides a baseline assessment of access to the Baylands School, a review of relevant Safe Routes to School plans and guidelines, and recommendations for how the Baylands Specific Plan can provide access that meets this guidance in the study area.

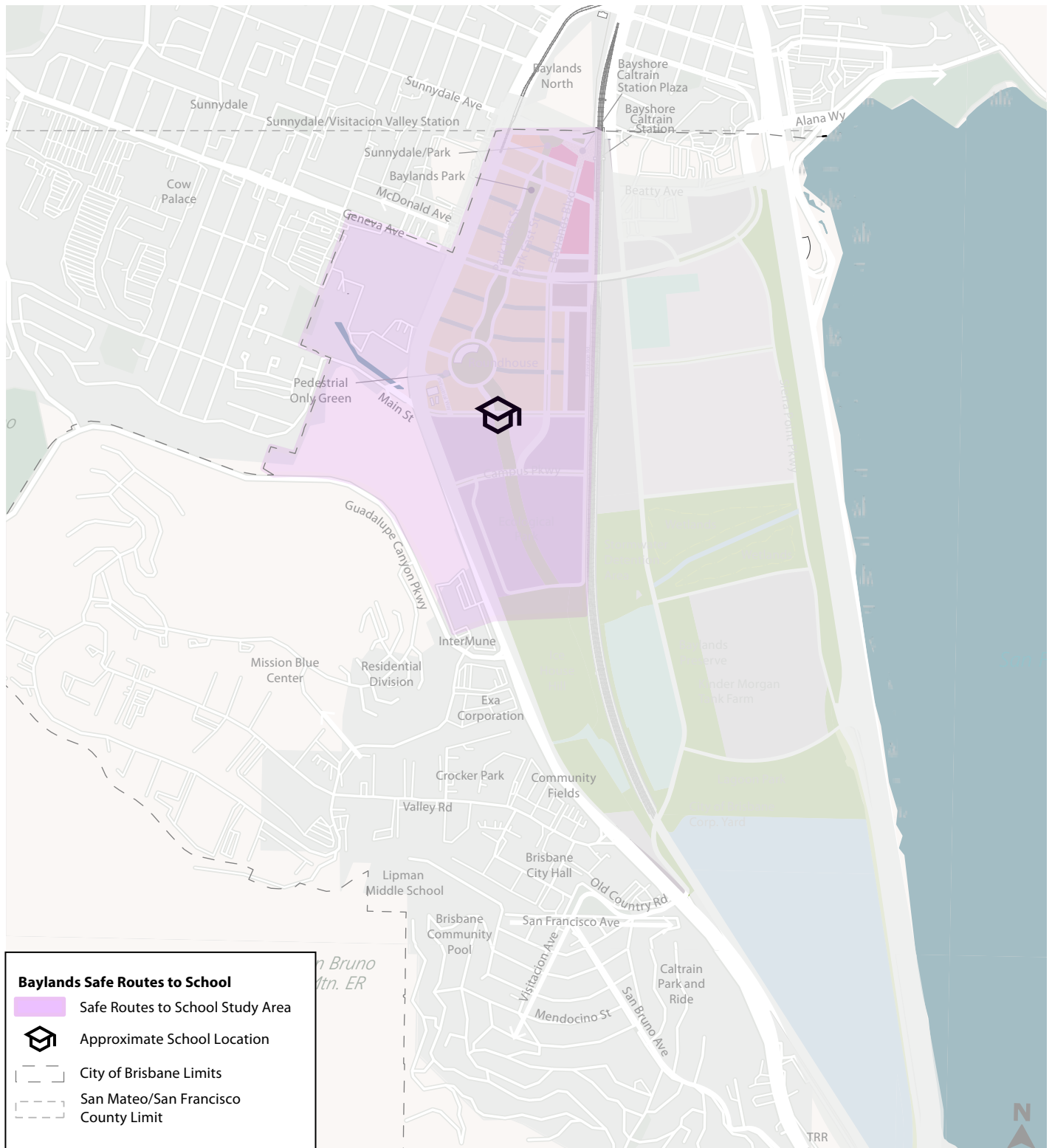


Figure 1





Data Review

This section presents the baseline collision and level of traffic stress data related to safety and comfort for students walking and biking within the Safe Routes to School Study Area. The collision data presented in this section presents recent collisions on existing roadways within the study area. The level of traffic stress metric is based on the baseline condition for opening day when the school children would be traveling, including the land use and roadway network changes proposed as a part of the Baylands Specific Plan, including the Bayshore Corridor Mobility Plan.

Collision Data

According to the Transportation Injury Mapping System (TIMS)¹, a database of statewide injury collisions, in the five-year span from 2017 to 2021, there were a total of 122 injury collisions, including 19 resulting in a severe or fatal injury within the area of the Bayshore School District. Of all 122 collisions, 5 involved someone biking, resulting in one severe or fatal injury, while 17 collisions involved pedestrians, with 7 of those resulting in severe or fatal injuries. Only one collision involved an individual under 15, in which two children were crossing Bayshore Blvd outside a crosswalk after dark. Most collisions, about 90 percent, did not involve a driver driving under the influence. 16 percent of these collisions occurred between 6:00 am and 9:00 am, and 23 percent between 3:00 pm and 6:00 pm, displaying the importance of school and work commute hours. Unsafe speed was the main cause in 33 collisions, improper turning in 25, and vehicle right-of-way violations in 13. Among pedestrian-involved collisions, 6 occurred at intersections, 5 while pedestrians were crossing a roadway outside of a marked crosswalk, and 5 occurred in the roadway or shoulder. These statistics highlight the need for speed management and improved crossing infrastructure in the study area; additional data is presented in C/CAG's LRSP, as described below in the document review.

Level of Traffic Stress

The "level of traffic stress" (LTS) is a metric used to assess the perceived safety and comfort of a roadway for people walking and bicycling. It evaluates the degree of stress experienced by people walking and bicycling based on factors such as traffic volume, vehicle speed, roadway design, and the presence of physical infrastructure. LTS typically ranges from low stress (LTS 1) to high stress (LTS 4), with lower LTS indicating safer and more comfortable conditions for people walking and bicycling. In the context of safely getting to school, the level of traffic stress is crucial for assessing the suitability of routes for students who walk or bike. Fehr & Peers' analysis of LTS in the Safe Routes to School Study Area is shown in **Figure 2**.

¹ <https://tims.berkeley.edu/>

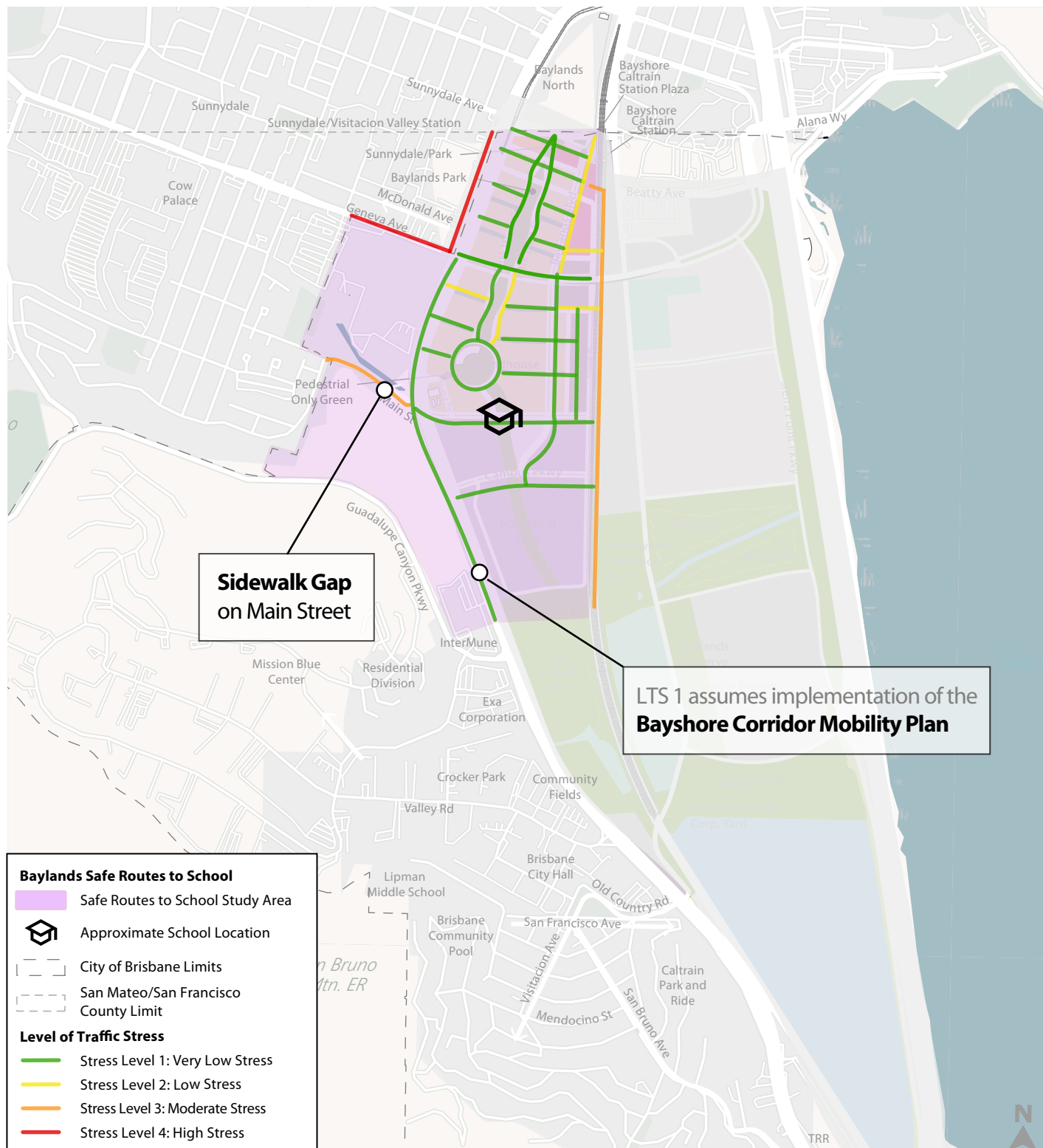


Figure 2





The LTS analysis presented in Figure 2 accounts for the existing infrastructure in the Safe Routes to School Study Area and the roadway network that is proposed as a part Baylands Specific Plan, including the Bayshore Corridor Mobility Plan. The vehicle volumes are those that are forecasted for the midterm plus Baylands project scenario to reflect opening day conditions.² Given the overall similarity in outcomes of LTS calculations for people walking and bicycling, the quantitative LTS analysis shown in Figure 2 is based on factors that influence the LTS for people bicycling. The primary difference between the two methodologies is that LTS for people walking accounts for the presence of sidewalks, which are present on all roadways in the Baylands Specific Plan, while LTS for people bicycling accounts for existing bicycle facilities, including bike lanes, separated bike paths, or shared roadways with designated bike markings. The presence and quality of these bicycle facilities directly influence the perceived safety and comfort of cycling, and thus the LTS, on a particular route.

Figure 2 also details barriers and obstacles to safely walking and bicycling. Sidewalk gaps in the roadway network have been identified separately as these are critical gaps in the network for people walking and locations where the LTS for people walking is the highest. Notably, Main Street operates at LTS of 3 and is missing sidewalks in the City of Brisbane.

Document Review

Several countywide safety plans and studies have been conducted or are in the process of being developed within the project area. These plans detail the state of pedestrian and bicyclist safety across San Mateo County and the project area and present various analyses of collision data. The Safe Routes to School Program by the San Mateo County of Education is an ongoing program to educate, encourage, and implement various tools to increase safety on roadways for students going to and leaving from school by way of active transportation.

This section provides a summary of relevant plans, reports, and projects that affect roadway safety in the project area.

San Mateo County Office of Education Safe Routes to School Program

The San Mateo County Office of Education (SMCOE) began their Safe Routes To School (SRTS) initiative in 2014, in an effort to encourage and enable school children to walk or bike to school safely. The program, funded by the City/County Association of Governments of San Mateo County (C/CAG) and the California Transportation Commission, has the goal of engaging with students and the overall community through programs, activities, and small-scale infrastructure improvements to generate excitement and confidence in students' ability to get to school safely

² Cumulative plus Baylands conditions would not substantially change this analysis given that the buildout of Phase 1 on the westside of Caltrain tracks would be complete, and thus there would not be substantial changes to volumes on the roadways within the project site. Arterial roadways would continue to operate in a similar manner with respect to the level of traffic stress for people walking and bicycling.



via active transportation. The program has seen increased school participation throughout its existence, and schools are able to participate in a wide variety of events and educational programs. The program releases an annual report on the activity the program had throughout the year. The most recently released report details school year 2020-2021, reporting on school engagement and what specific programs were implemented throughout San Mateo County. The Brisbane School District participated in various activities, including Bike Skills Presentation, Community Events, and Walk and Roll to School Days, however the Bayshore School District has not participated in any activities, according to this annual report.

San Mateo County Creating Safer Streets Near Schools Report

This report, created by the organization "Get Healthy San Mateo County," highlights priority areas of concern and schools within areas that have experienced a history of high bike and pedestrian collisions, noting where these areas coincide with neighborhoods that have high rates of poverty. The report identifies specific opportunities for action as well as policies that could be implemented to increase safety around school zones.

The report underscores the importance of inclusive and equitable transportation design to create streets that allow all to safely travel, stating "*Equitable transportation investments in street design, traffic calming measures, and programs such as Safe Routes to School ensure that all communities have healthy transportation options*". It asserts that, on average, more than one collision per day occurs involving a cyclist or pedestrian in San Mateo County, totaling 470 per year. Additionally, 27 percent of the people involved in a collision near the schools identified by the report are children. Bayshore Elementary School has been identified as a priority Public Elementary School as well as a school that has a history of high bike and ped collisions. The school is in the Bayshore Heights neighborhood where 30 percent of residents live below the 200 percent Federal Poverty Line. The following are stated to be actions that could be undertaken to improve safety within the transportation network focused around schools:

- Prioritize infrastructure improvements for student drop-off and pick-up zones, high collision intersections, and mid-blocks.
- Implement consistent street design guidelines to accommodate walking, biking, and driving.
- Increase knowledge of existing grant opportunities available for transportation safety improvements.
- Improve collaboration across schools, cities, and San Mateo County.
- Prioritize existing funding for schools in high collision and high poverty area

City/County Association of Governments of San Mateo County Local Roadway Safety Plan (C/CAG LRSP)

C/CAG is in the process of developing an LRSP to improve safety on roadways across San Mateo County. This plan is identifying areas that are most in need of design improvements and has



provided a list of draft priority location maps which show the different priorities areas within a vicinity broken down by travel mode and road type. The City of Brisbane has several priority areas identified, including along Main Street, Bayshore Boulevard, and Tunnel Avenue.³ The LRSP is expected to be adopted by the County of San Mateo in 2024. A draft plan was published in April 2024.⁴ The draft plan identifies the intersections of Bayshore Boulevard and Main Street, Bayshore Boulevard and Industrial Way, and Main Street and Hill Drive as priority locations within the school district. The plan identifies a set of engineering countermeasures that should be implemented across the city and specifically at these locations, which are consistent with those recommended by the Bayshore Corridor Mobility Plan.

Daly City Vision Zero Action Plan

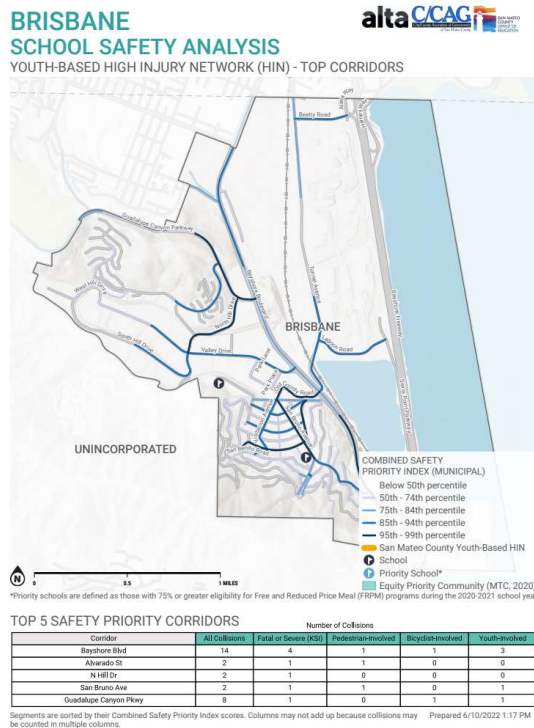
Daly City adopted its Vision Zero Action Plan (VZAP) in 2016, which details the goal of eliminating fatalities and serious injuries by 2035. Utilizing a Safe Systems Approach, the city aims to prioritize human life and health first in transportation planning. This plan presents a High Injury Network and details trends in collisions, noting that a majority of serious injuries and fatalities occurring on roadway segments (not intersections) and most collisions occurring on arterials. 44% of fatalities and serious injuries involved a pedestrian, with a majority of these occurring with a person crossing a crosswalk. Most of the schools and parks within the city are within a quarter mile of the identified HIN, with 70% of fatal or serious injury crashes occurring within a quarter of a mile from a school. Of note for the proposed school, Geneva Avenue is on the High Injury Network (HIN).

San Mateo County Safe Routes to School High Injury Network Report

C/CAG published its Safe Routes to School High Injury Network (SRTS HIN) Report, detailing demographic trends and geographic data on who is being injured or killed in crashes countywide, as well as other information breaking down collision trends. **Figure 3** shows the results from the report's analysis within the City of Brisbane. While most streets included in this analysis are not within this school's catchment area, Main Street and Bayshore Boulevard are identified as part of the SRTS HIN.

³ <https://ccag.ca.gov/wp-content/uploads/2023/12/Brisbane.pdf>

⁴ https://ccag.ca.gov/wp-content/uploads/2024/04/28717_CCAG-Countywide-LRSP-Brisbane-Chapter.pdf



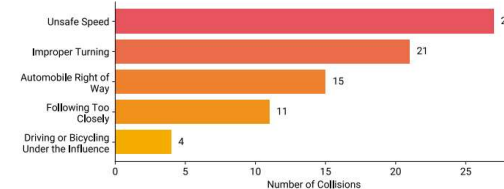
COLLISION STATISTICS FOR BRISBANE, 2014-2020

See the San Mateo County SRTS High Injury Network Report for additional context and guidance on countermeasures.

COLLISION TYPES BY LOCATION

	City-Wide				Within 1/4 Mile of a School			
	All	KSI	Youth	Active	All	KSI	Youth	Active
All Collisions	96	14	6	12	11	4	0	2
Alcohol Involved	7	3	1	1	1	0	0	0
Speeding Involved	27	4	1	0	3	1	0	0
Mid-Block Collision	56	8	3	8	5	2	0	1

TOP 5 COLLISION FACTORS, ALL COLLISIONS



ALL COLLISIONS BY TIME OF DAY

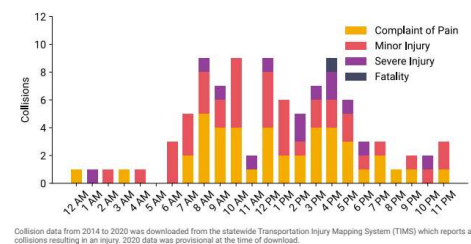


Figure 3: San Mateo County Safe Routes to School High Injury Network Report for Brisbane

Brisbane General Plan

The Brisbane General Plan, adopted in 1994, is the blueprint for development in the City and addresses all aspects of development, including land use, housing, traffic, natural resources, open space, safety, and noise. The Circulation Element was amended in September 2015 and January 2020. The amendment identifies that Bayshore Boulevard, with Highway 101, serves as “the main transportation corridor to, through, and within the City.”⁵ Applicable circulation goals, policies, and programs related to safe routes to school programs are included below.

Roadway Performance

- Policy C.1** Design the City’s roadway system to emphasize mobility for Brisbane residents and businesses, accommodate bicycle and pedestrian in addition to vehicular movement, and provide for comfortable and safe travel within the community to shopping, employment, and recreation, as well as to transit and the Highway 101 freeway.

⁵ City of Brisbane, *Circulation Element General Plan*, Amended January 2020.

https://www.brisbaneca.org/sites/default/files/fileattachments/community_development/page/2401/006_c_haptervi-circulationelement.pdf.



- **Policy C.3** Design turning movements and traffic signal timing at intersections so as to avoid the queueing of vehicles at intersection from backing up and adversely affecting operations at another intersection. Design turning movements and traffic signal timing at freeway interchanges cause queueing of vehicles from the intersection onto the freeway mainline.

Street Standards

- **Policy C.8** Implement established City street standards to provide for adequate traffic flow and safe vehicular, bicycle, and pedestrian movement along both existing and new streets.
- **Policy C.17** Maintain traffic flow and continue to improve arterial streets to accommodate vehicular, bicycle, and pedestrian movement.

Complete Streets

- **Policy C.21** The City shall provide for the development of Complete Streets consistent with Government Code Sections 65040.2 and 65302 and subsequent applicable Complete Streets legislation) to meet the needs of all users of "streets, roads and highways". Such users include bicyclists, children, youth, families, persons with disabilities, motorists, movers of commercial goods, pedestrians, users of public transportation, seniors, and first responders.
- **Policy C.22** Integrate Complete Streets infrastructure and design features, such as sidewalks, bikeways and transit stops, into street design and construction to create safe and inviting environments for people to walk, bicycle and use public transportation.
- **Policy C.23** Seek to retrofit existing roadways to create Complete Streets.
- **Policy C.24** For new multifamily, mixed use or commercial development projects subject to discretionary review that would affect the public right-of-way, incorporate and implement Complete Streets elements at each stage of the development process as determined reasonable and practicable by the City.

Bicycles & Pedestrians

- **Policy C.26** Continue to connect Brisbane's bikeway and pedestrian system to the County and regional networks.
- **Policy C.28** Maximize bicycle access to all areas of the City, as practicable.
 - Program C.28.a Identify areas of the City where bikeways may be constructed, as both recreational and transportation amenities, with the aim of connecting all areas of the City with a network of bikeways.



- Program C.28.b Design and install bikeways to meet best current engineering practices.
- **Policy C.29** Provide for the safety of bicyclists by dedicating bikeways where practicable, by installing appropriate signing and striping, and by maintaining the pavement.
 - Program C.29.a Install as many bikeways as can safely be accommodated and are economically feasible.
- **Policy C.30** Require new development and redevelopment to plan for and construct bikeways and/or bicycle parking facilities, as determined reasonable and practicable by the City.
- **Policy C.31** All new arterial streets and any existing arterials that are improved should provide for bicycle transportation.
- **Policy C.32** Provide or require bicycle parking facilities at major destination points.
- **Policy C.33** Provide public information on bicycle transportation.
- **Policy C.34** Maximize safe pedestrian facilities and access to all areas of the City, as reasonable and feasible.
- **Policy C.35** Require pedestrian amenities with new development and expansion of existing uses, as appropriate.

Transit

- **Policy C.36** Seek opportunities to install and improve transit facilities, establish multi-modal connections and increase the service network.

Challenges and Opportunities

The network of safe pedestrian crossings throughout northern San Mateo County is a general source of concern, with a high percent of severe injuries and fatalities happening on roadway segments rather than at intersections, indicating that safe crossings may be inconvenient. Northern San Mateo County primarily has shared road bicycle facilities rather than dedicated and protected separated facilities. These types of bike lanes often leave gaps in connectivity and may not be adequate for students traveling to and from school if they have to leave a residential area and cross an arterial. Finally, speeding is identified as one of the leading factors of severe injury or death around the project area, which indicates that speed management will be an important intervention throughout the project area. These safety plans all point to a similar High Injury Network, with Geneva Avenue and Bayshore Boulevard providing access for school students in the study area. This highlights the importance of interventions on these corridors, such as those proposed as a part of the Baylands Specific Plan. These infrastructure interventions include the



separated Class 1 path and protected intersections on Bayshore Boulevard as a part of the Bayshore Corridor Mobility Plan and the Class IV protected bicycle facilities on Geneva Avenue.

Safety Best Practice Strategies and Project Recommendations

Based on a review of the above plans, documents, and data, several projects and strategies were identified to increase comfort and safety in the study area. **Table 1** presents the results of the synthesis of national best practice policies for Safe Routes to School by the SRTS National Partnership non-profit organization. The SRTS National Partnership focuses on improving infrastructure and growing the ability for local governments to win funding to increase walking and biking among school-aged children.

Table 1: Recommended Safe Routes to School Policies

National Best Practice Policies ¹	Responsible Party
Increase Investments in the SRTS program	City of Brisbane / Bayshore School District
Offer comprehensive bicycle and pedestrian safety education to all children	Baylands Development / Future Baylands School
Invest in strategies to reduce speeding and reduce speed limits around schools	Baylands Development: Design features described in Table 2
Adopt a SRTS local Policy	City of Brisbane / Bayshore School District
Engage Community Groups in Vision Zero and SRTS	City of Brisbane / Bayshore School District
Build and Sustain a SRTS Task Force	City of Brisbane / Bayshore School District
Develop and Sustain a Paid SRTS Coordinator Position	Baylands Development / Future Baylands School

Notes:

1. SRTS National Partnership; Vision Zero and Safe Routes to School: Partners in Safety

Source: SRTS National Partnership, Fehr & Peers

Table 2 presents the results of the synthesis of safe routes to school implementation actions developed by San Mateo County or nearby jurisdictions in northern San Mateo County. Examples from Daly City and San Bruno are cited to reflect best practices in nearby jurisdictions. **Figure 4** presents the Safe Routes to School recommended routes and the actions the Baylands development will be responsible for to support the safety and comfort for students traveling on these routes within the Safe Routes to School Study Area. This includes the provision of physical infrastructure along and crossing the high-injury network roadways of Bayshore Boulevard and Geneva Avenue and a low stress connection along Main Street to connect the proposed Baylands School to Daly City neighborhoods. Other infrastructure changes within Daly City or programmatic measures led by the Bayshore School District could enhance the Safe Routes to School routes outside of the City of Brisbane and would be the responsibility of these entities.



Table 2: Recommended Local Safe Routes to School Actions

Safe Routes to School Principles	Source	Specific Actions to be Taken
Prioritize infrastructure improvements for student drop-off and pick-up zones, high collision intersections, high-injury corridors, and mid-block crossings along recommended safe routes to school	San Mateo County Creating Safer Streets Near Schools Report; San Mateo County Countywide Local Roadway Safety Plan	Design safe student drop-off and pick-up zones consistent with the Baylands Supplemental Roadway Design Guidelines ¹ .
		Provide high visibility crosswalks and protected intersection designs at the intersections along the Safe Routes to School Route crossing the high-injury corridors of Bayshore Boulevard and Geneva Avenue (see Figure 4)
		High visibility crosswalks at all intersections on Geneva Avenue
		High visibility crosswalks installed in neighborhood around the Baylands School
Implement consistent street design guidelines to accommodate walking, biking, and driving	San Mateo County Creating Safer Streets Near Schools Report	Implement the complete street design guidelines contained in the Baylands Supplemental Roadway Design Guidelines for roadways within the Baylands.
Establish A Connected Network of Facilities for Bicyclists and Pedestrians	San Mateo County Comprehensive Bike and Pedestrian Plan	Baylands Development provides a connected network of low-stress facilities for bicyclists and pedestrians within the project, as shown in Figure 4 . As presented in Figure 19 and described in Mitigation Measure 3b of the Brisbane Baylands Transportation Impact Assessment, a Class 1 multi-use pathway on Main Street will be provided to close the gap between the Linda Vista neighborhood in Daly City to the project site.
Advance Complete Streets Principles and the Accommodation of All Roadway Users	San Mateo County Comprehensive Bike and Pedestrian Plan	Baylands Supplemental Roadway Design Guidelines present consistent complete street design guidelines to be implemented within the Specific Plan area.
Install Actuated Beacons (RRFB/PHB) and Speed Humps & Tables	San Mateo County Safe Routes to School High Injury Network	Baylands Supplemental Design Guidelines present complete street design guidelines that include this feature.
Reduce Speeds through Operations and Design ³	Daly City Vision Zero Action Plan	Implement the Bayshore Corridor Plan to reduce traffic speeds and level of traffic stress for people walking and bicycling along Bayshore Boulevard



Focus Enforcement on High-Risk Behaviors and Locations ⁴	Daly City Vision Zero Action Plan	School guard crossing locations identified on Figure 4 along high-injury network crossing locations on Bayshore Boulevard and Geneva Avenue
Lower School Zone Speed Limits ⁵	San Bruno SRTS	Speed limits will be limited to 15 miles per hour within 500 feet of school when children are present.
Lower Threshold for implementing all-way stop control within 500 feet of School	San Bruno SRTS	Baylands Development provides stop signs and other crossing features consistent with Baylands Supplemental Roadway Design Guidelines.
Prioritize adding street trees and other pedestrian-scale greening within school zones	San Bruno SRTS ⁶	Baylands Development will provide street trees and greening on all streets surrounding school.

Notes:

1. Brisbane Baylands Transportation Impact Study: Supplemental Roadway Design Guidelines (Fehr & Peers, July 2024)
2. As noted in Daly City Vision Zero Action Plan, "work with agencies throughout Daly City, the Bay Area, and the national Vision Zero community to identify best practices and leverage resources."
3. As noted in Daly City Vision Zero Action Plan, "prioritize new traffic signals and signal timing modifications along the High Injury Network and promote roadway designs that reduce vehicle speeds." <https://www.dalycity.org/DocumentCenter/View/6688/Vision-Zero-Action-Plan-2020>
4. As noted in Daly City Vision Zero Action Plan, "focus patrols and traffic citations on streets within the High Injury network and work with schools to allocate crossing guards where they are most needed"
5. As noted in San Bruno SRTS, "School zone speed limits should be lowered from 30 miles per hour to 15 miles per hour, encompassing all two-way residential streets under the City's jurisdiction within 500 feet of the school." The San Bruno SRTS program does not apply to the Bayshore School District. These actions are presented as best practices from the nearest comparable SRTS program to the City of Brisbane with actions not identified elsewhere (https://sanbrunosaferroutes.altaplanning.cloud/storage/app/media/San%20Bruno-SRTS-Plan_v7-compressed.pdf).

Source: Local plans noted in table, Fehr & Peers

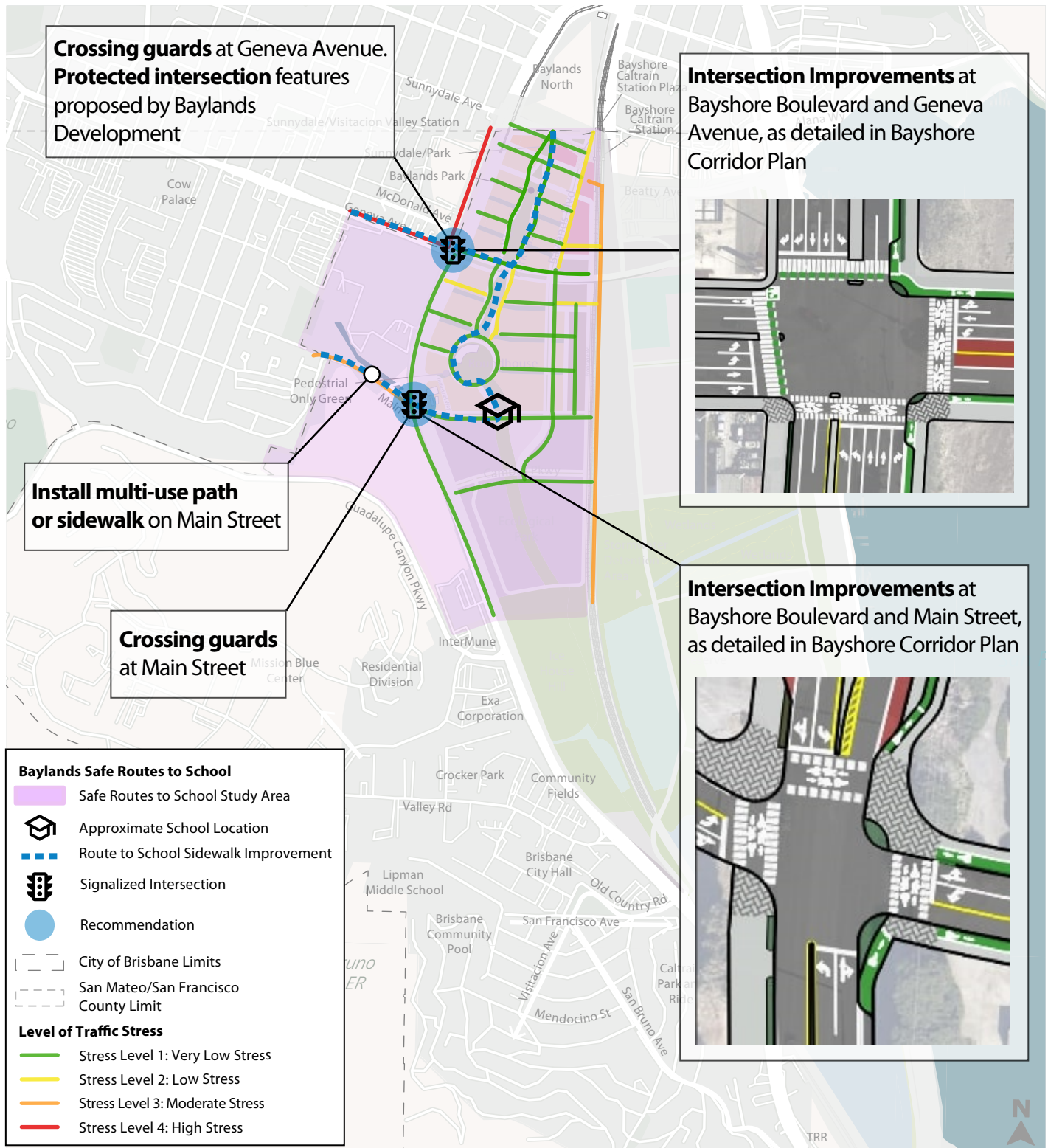


Figure 4

