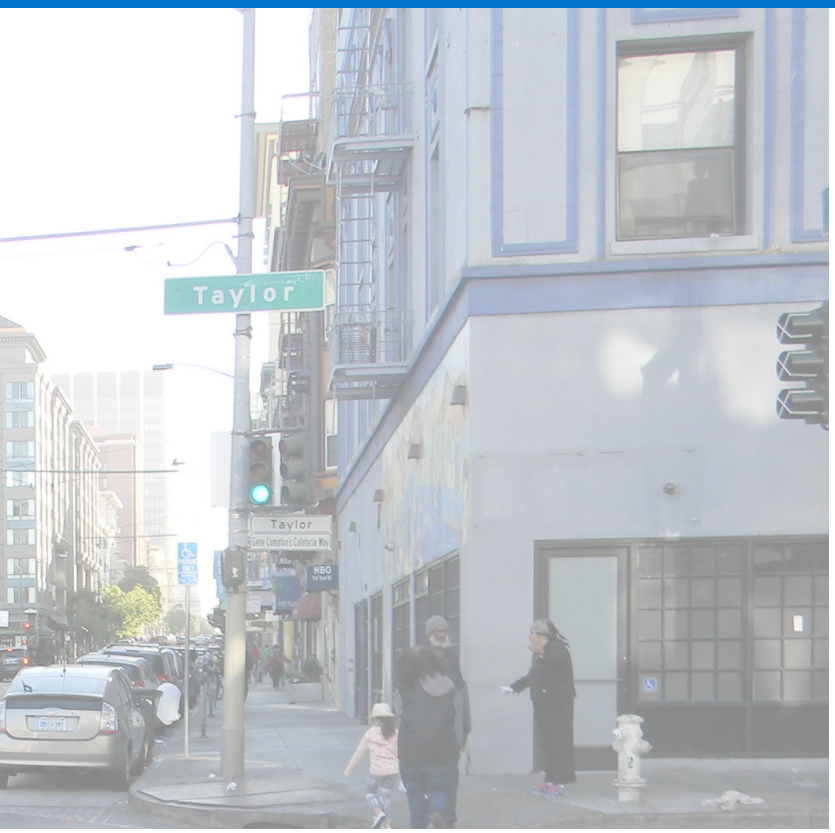
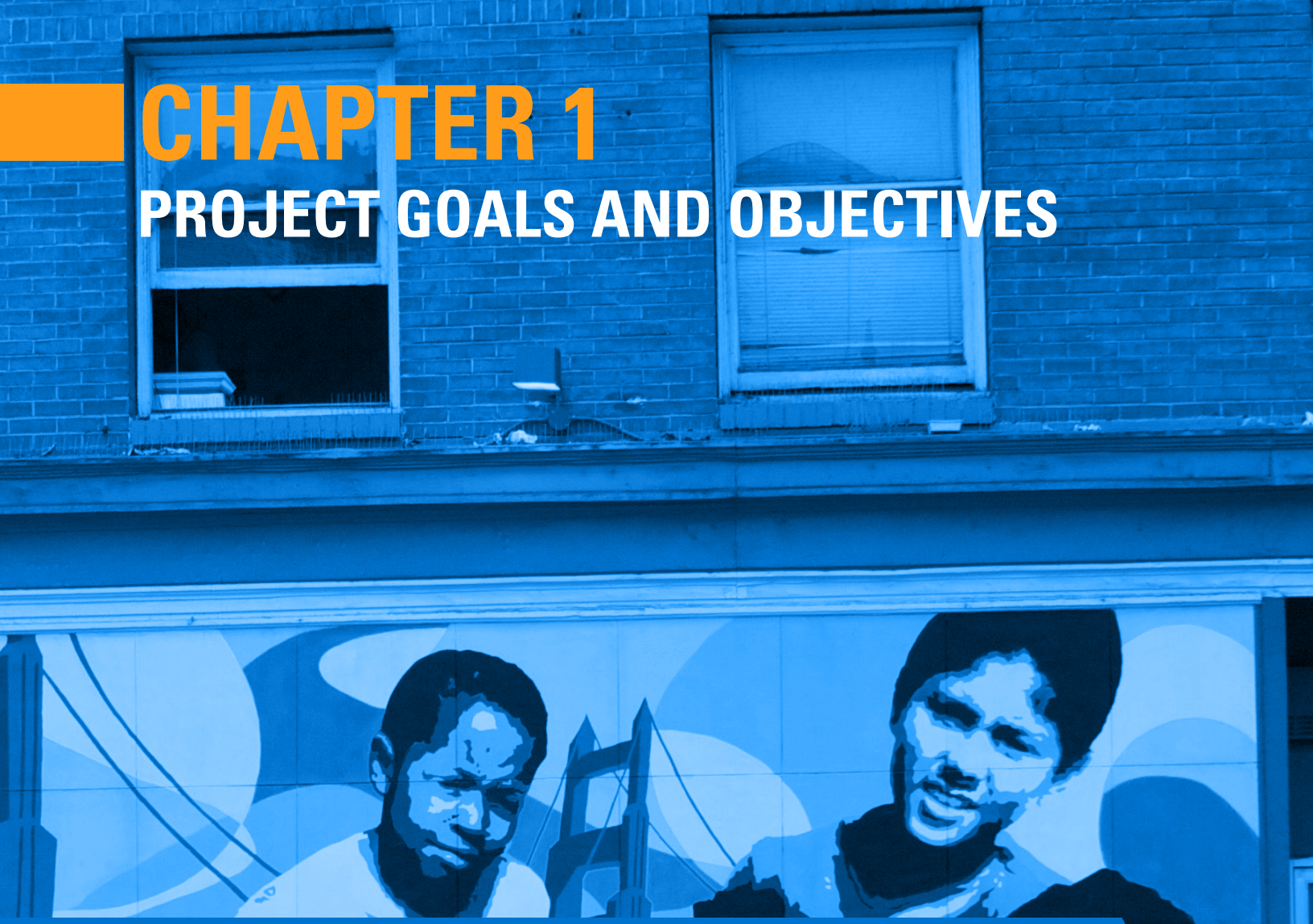
SAFER TAYLOR STREET

FINAL REPORT
June 2018



SFMTA Municipal Transportation Agency · Public Works · Alfred Williams Consultancy, LLC · San Francisco Department of Public Health · WALK San Francisco · Vision Zero SF · Safe Passage Tenderloin Community Benefit District · Fehr & Peers

Table of Contents



CHAPTER 1
PROJECT GOALS AND OBJECTIVES

ABOUT THE PROJECT

SAFER TAYLOR STREET

The Safer Taylor Street Project is a community-centered effort focused on developing a comprehensive study of safety improvements for Taylor Street between Market and Sutter Streets. The City and County of San Francisco adopted Vision Zero as a policy in 2014, committing to building better and safer streets, enforcing traffic laws and implementing lifesaving policy changes. The WalkFirst initiative, which prioritizes pedestrian safety in San Francisco, was developed in support of Vision Zero efforts. Through this initiative, Taylor Street was identified as a high priority corridor for pedestrian improvements given the number of collisions that have occurred on the street.

PROJECT GOALS AND OBJECTIVES

Safer Taylor Street will develop a plan for comprehensive pedestrian safety along Taylor, Market, and Sutter Streets. Specific project goals and objective are outlined below.

SAFETY

Develop a community-based plan for transportation safety improvements on Taylor Street

Through project implementation and measurable data, **improve transportation safety for all users on Taylor Street in support of Vision Zero**:

- Reduce pedestrian, cyclist, and driver collisions
- Reduce inequities between rate of collisions in the Taylor Street corridor of the Tenderloin and other San Francisco communities
- Reduce driver speeding
- Improve health outcomes for Taylor Street and the wider Tenderloin community

COMMUNITY

Ensure the final **plan represents community interests and is responsive to its needs**

- Support and leverage the ongoing work of local community-based organizations (CBOs)
- Recognize the diversity of residents, businesses, users, and organizations of the corridor through a robust and intensive public participation plan
- Engage vulnerable and at-risk populations that may not typically participate in transportation planning processes

LIVABILITY

Use the expertise of City partners, including the SF Department of Public Health and the SF Planning Department, to **integrate public health and public space best practices**

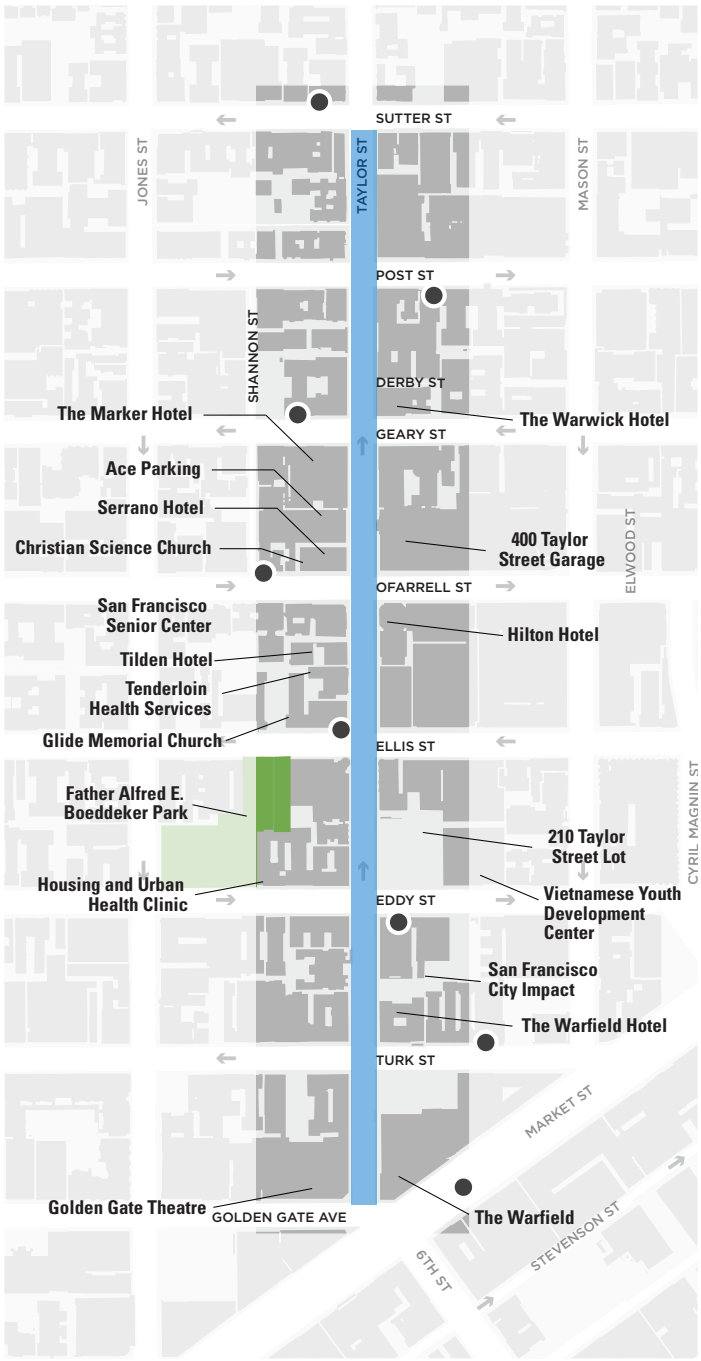
Integrate national and international best practices and develop innovative approaches to community engagement, design, and evaluation of the project

CHAPTER 2
EXISTING CONDITIONS

PROJECT CONTEXT

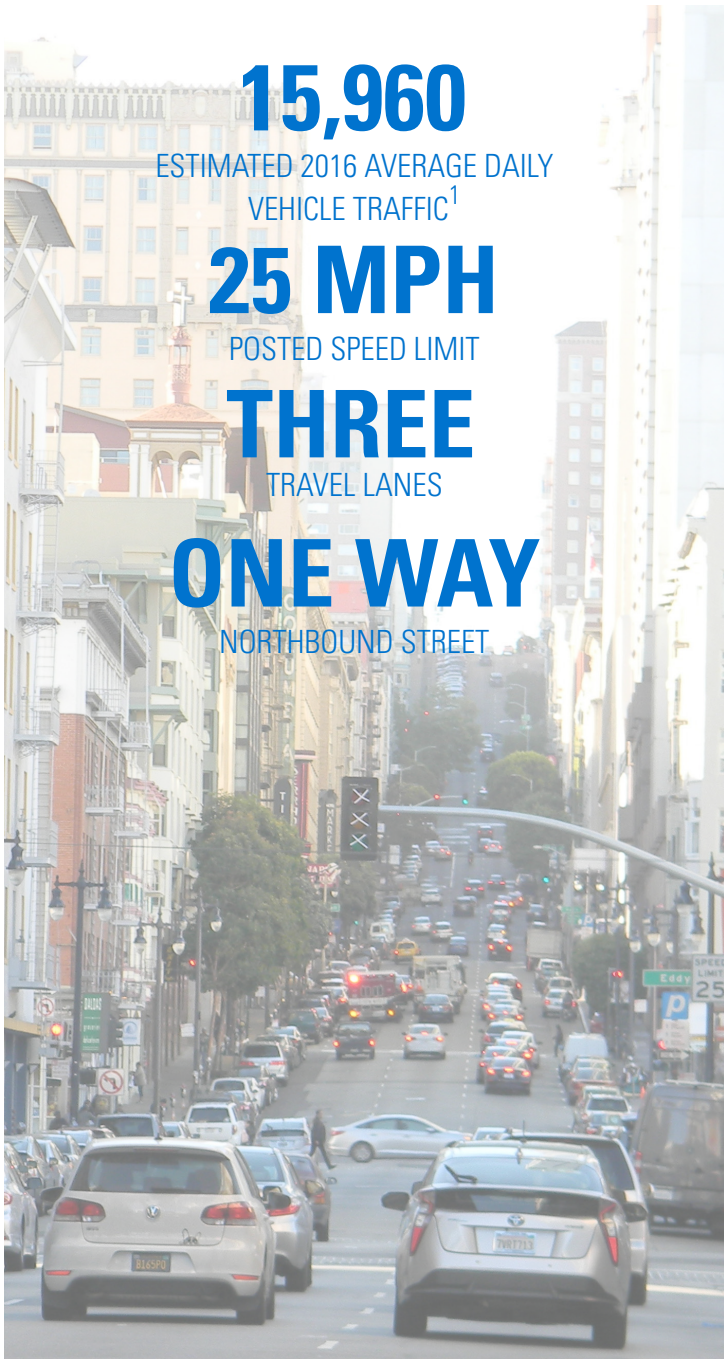
TAYLOR STREET BY THE NUMBERS

Taylor Street is located in the Tenderloin neighborhood, two blocks west of Union Square. It provides an important northbound connection between Market Street to the Tenderloin and Lower Nob Hill. The Safer Taylor Street Project study area extends along Taylor Street between Market Street and Sutter Street.



Study Area

Bus and/or LRT Stop



15,960

ESTIMATED 2016 AVERAGE DAILY VEHICLE TRAFFIC[1]

25 MPH

POSTED SPEED LIMIT

THREE

TRAVEL LANES

ONE WAY

NORTHBOUND STREET

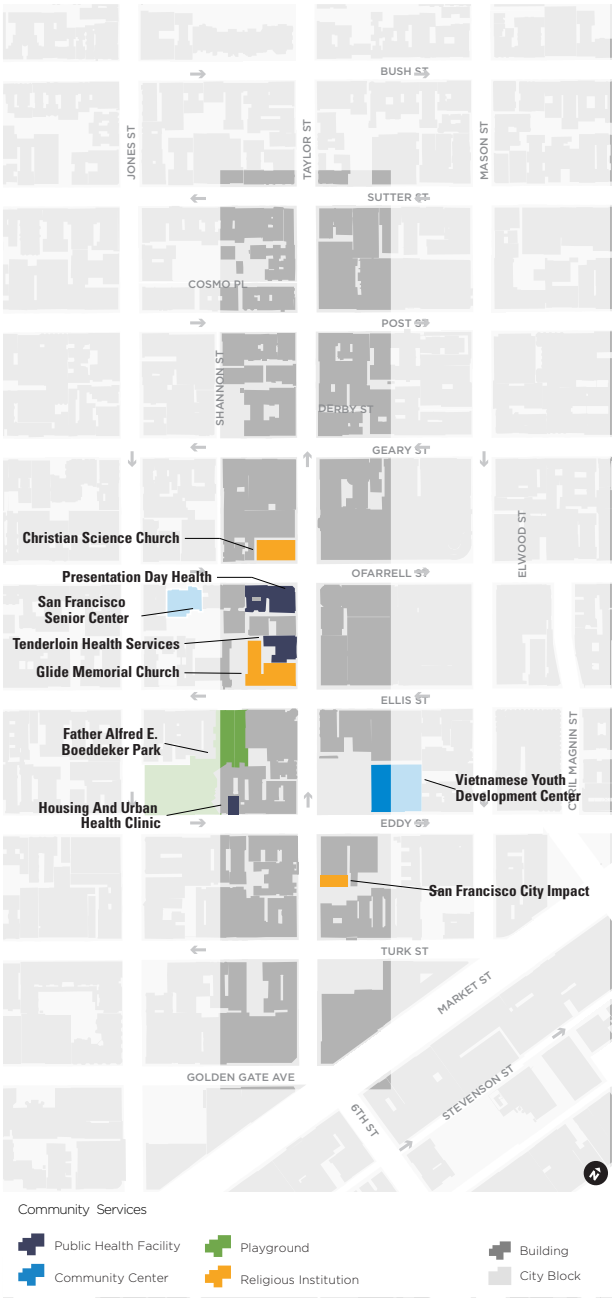
1. BASED ON PEAK INTERSECTION VOLUME

PUBLIC HEALTH INDICATORS

COMMUNITY PROFILE

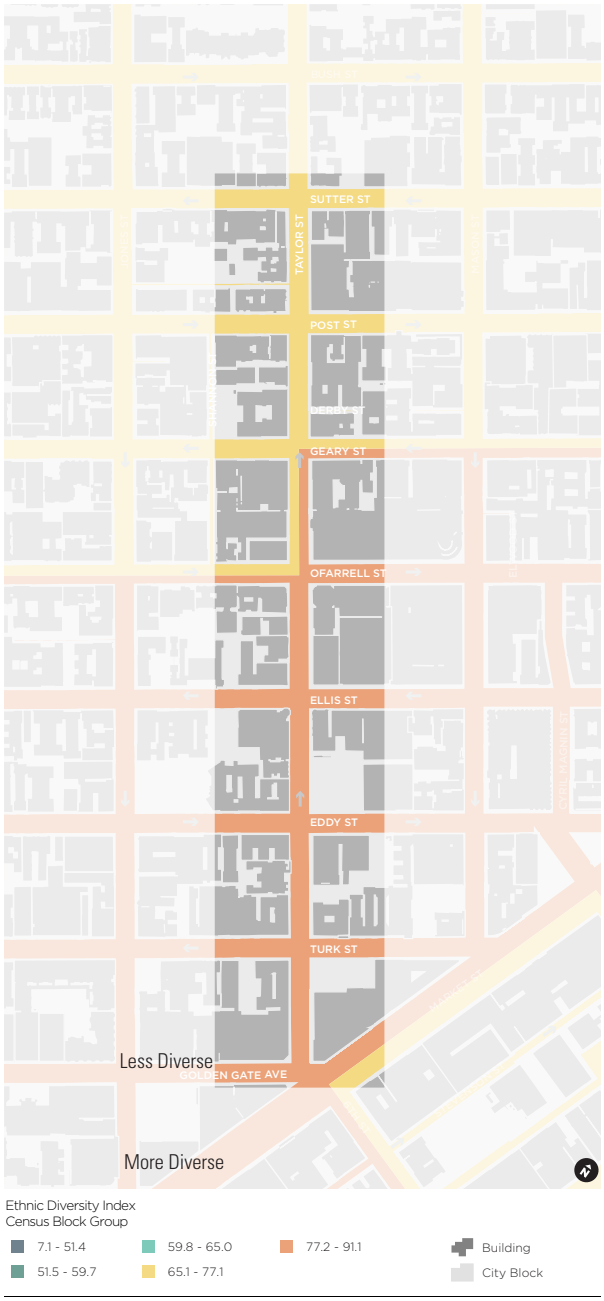
The San Francisco Department of Public Health (DPH) identifies certain demographic variables, such as diversity, income, and age, as predictors of public health outcomes. Taylor Street is home to one of the densest and most diverse concentration of residents, businesses, and community organizations in the city.

COMMUNITY SERVICES



Eight public health facilities, 17 community centers, six playgrounds, and seven religious institutions are within a quarter mile radius of the Taylor Street study area.

ETHNIC DIVERSITY[1]



Source: US Census 2010
1. The diversity index reports the percentage of times two randomly selected people would differ by race/ethnicity

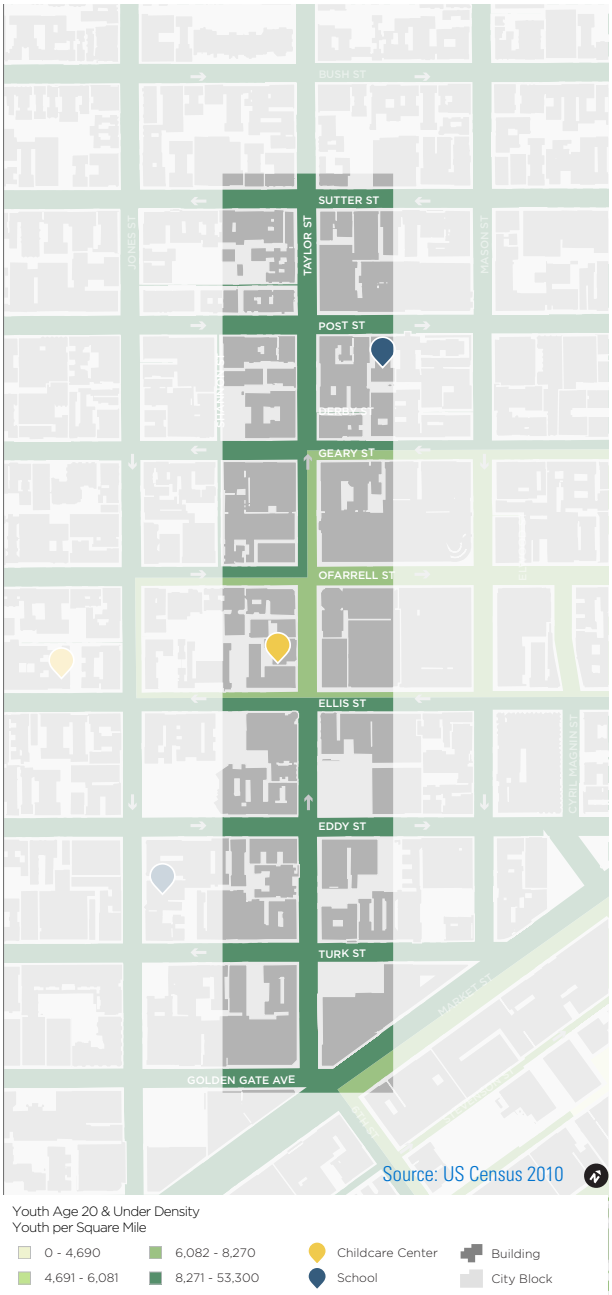
The cultural and ethnic diversity of Taylor Street is a major asset. Understanding ethnic composition can help cities address health disparities that impact diverse communities. The residents living in Census blocks surrounding Taylor Street are about 21% more ethnically diverse when compared to San Francisco as a whole.

PUBLIC HEALTH INDICATORS

COMMUNITY PROFILE

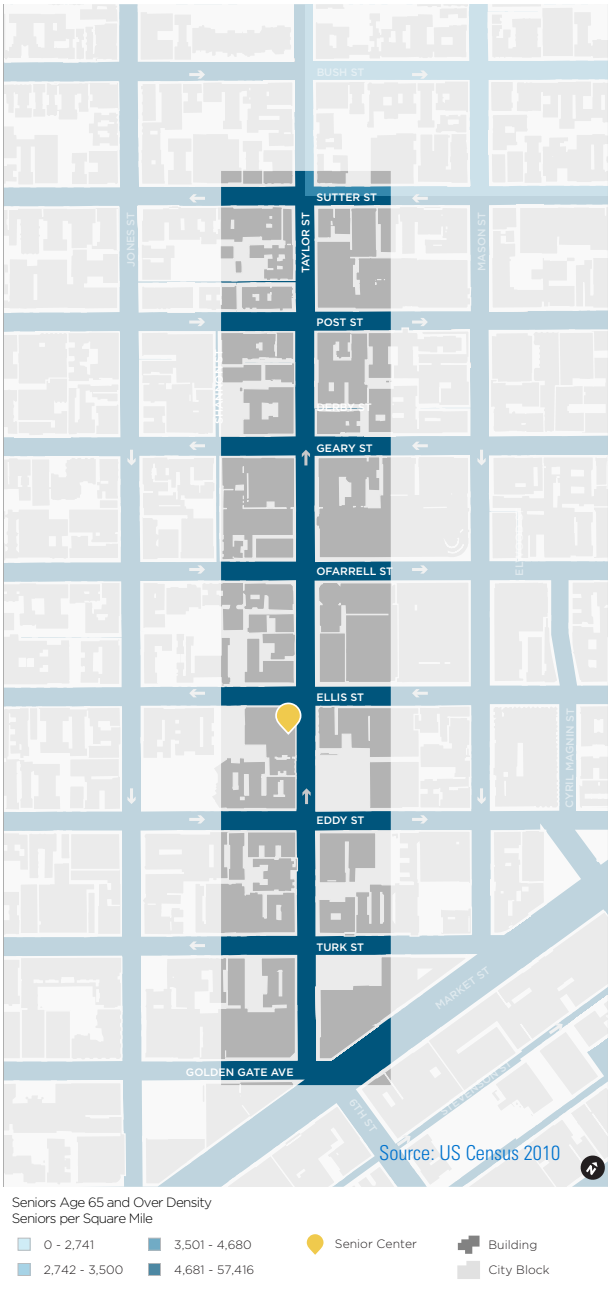
Different age groups have different social service and health needs. Age distribution in the community can be used to ensure that available resources match demand and need. As vulnerable populations, seniors and youth are particularly susceptible to pedestrian injuries.

YOUTH AGE 20 AND UNDER



With an average density of 19,120 youth per square mile in the surrounding Census blocks, Taylor Street has a youth (under age of 20) population that is three times the City's average.

SENIORS AGE 65 AND OVER



With an average density of 18,100 seniors per square mile, Taylor Street has a senior (age 65 and over) population that is four times the City's average.

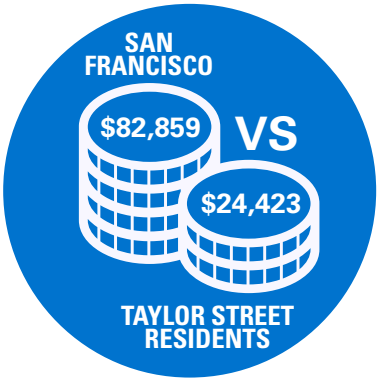
PUBLIC HEALTH INDICATORS

COMMUNITY PROFILE

With a high proportion of violent crime, street cleaning requests, and economically disadvantaged residents, Taylor Street is located in one of San Francisco's most challenging neighborhoods. DPH considers these factors to be strong predictors of health outcomes and overall community health. For example, income influences food access, neighborhood environmental quality, and stress. Crime is also a useful indicator of public health. According to DPH, higher crime rates can reduce incentive to participate in outdoor activities and induce stress.

According to the US Census, the median household income of residents in Census blocks surrounding Taylor Street was $24,423 in 2010. The reported median income of these residents in 2010 was 70.5% less than San Francisco overall with some residents having annual incomes as low as $9,300.

ANNUAL MEDIAN INCOME



Taylor Street has a significant concentration of violent crime. The average of violent crimes per 1,000 persons reported by the San Francisco Police Department from 2012 to 2014 was 2.6 times higher than SF overall.

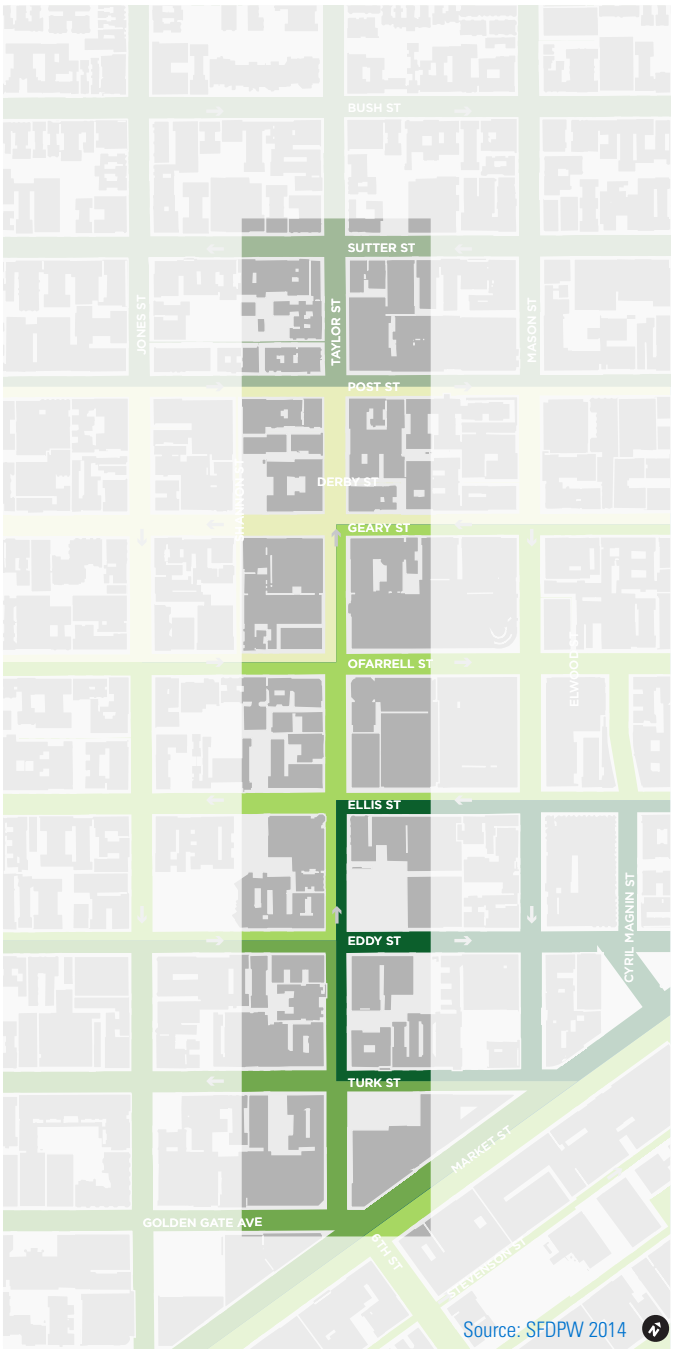
TYPES OF CRIME REPORTED

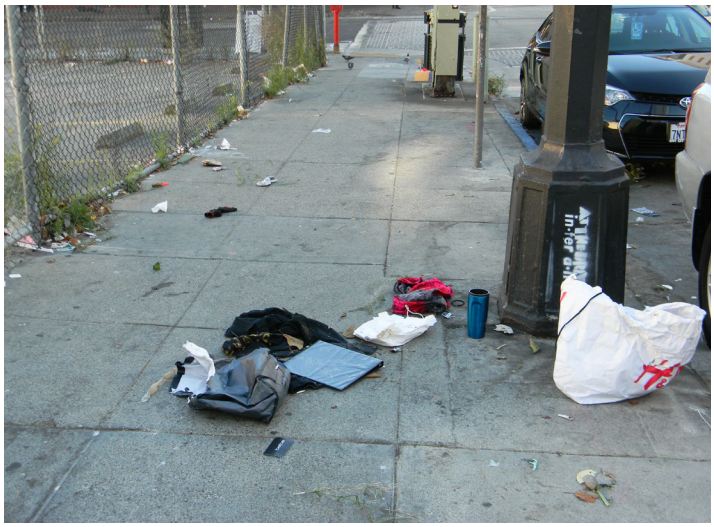
Almost 1/3 of San Francisco's SRO housing stock is located within a quarter mile radius of the Taylor Street study area.

PUBLIC HEALTH INDICATORS

311 STREET CLEANING REQUESTS

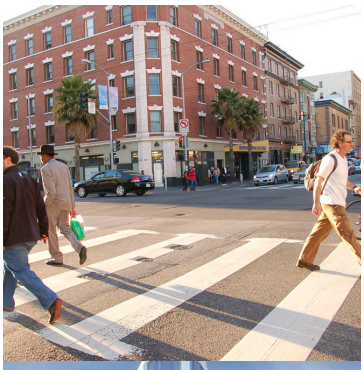
The City's 311 system provides information on public reports of neighborhood physical disorder such as dumping, needles, and trash on the sidewalks. Cleanliness of public spaces can have a direct impact on health through increased exposure to communicable and infectious diseases.





Average 311 street cleaning requests per 1,000 people are 9.1 times higher along the Taylor Street corridor than San Francisco overall.

COORDINATED PROJECTS + PLANNING EFFORTS



6th Street Improvement Project

The 6th Street Pedestrian Safety Improvement Project, which has a focus area on 6th Street just to the south of the Taylor Street study area, has the following goals:

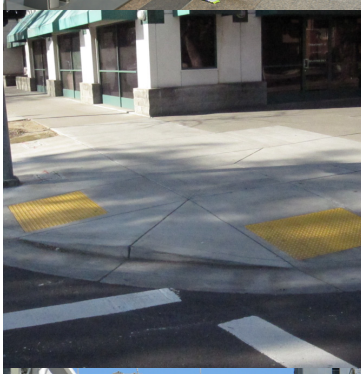
- Reduce pedestrian collisions on 6th Street
- Improve pedestrian crossings of 6th Street at all intersections
- Calm motor vehicle traffic
- Improve safety and comfort for people on bikes
- Create a safe and inviting public space

950 Market Street Project

The 950 Market Street Project is a new mixed-use development occupying the majority of a triangular parcel where San Francisco's Union Square, Tenderloin and South of Market districts meet. The project may include a curb extension on the southeastern corner of the Golden Gate Avenue/Taylor Street/Market Street intersection.

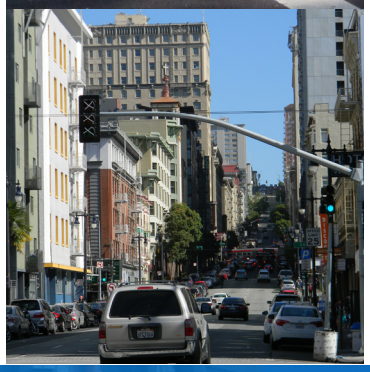
Bay Area Bikeshare Expansion

Bay Area Bike Share is expanding tenfold from 700 to 7,000 bikes starting in June 2017. This expansion will roll out in phases and is expected to be complete by 2018. A bikeshare station at Taylor Street and Post Street is proposed for Phase 3 of the expansion.



Department of Public Works Curb Ramp Program

Through its Curb Ramp Program, Public Works is committed to providing equal sidewalk access to all city residents. Through this program a new curb extension and ADA compliant curb ramp is currently planned for the southeast corner of Taylor Street and Sutter Street.



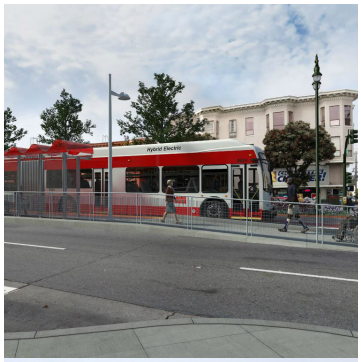
Ellis/Eddy Traffic Calming Improvement Project

The Ellis/Eddy Traffic Calming Improvement Project includes traffic calming and pedestrian safety improvements on Ellis and Eddy Streets as proposed in the Tenderloin-Little Saigon Neighborhood Transportation Plan. As of April 2017, outreach and modified legislation is still under way. Proposed improvements include:

- The one to two-way conversion of Eddy Street (from Leavenworth to Cyril Magnin Streets);
- Full signal upgrades at the Eddy Street/Taylor Street and Ellis Street/Taylor Street intersections, including pedestrian countdown signals; and
- Bulb-outs at the Ellis Street/Taylor Street intersection

Geary Bus Rapid Transit Project – Phase 1

The Geary Boulevard Bus Rapid Transit (BRT) Project features dedicated transit lanes, utility upgrades and other streetscape improvements. The installation of the Geary BRT may include new curb extensions and ramps at selected intersections along Geary Boulevard. New and refreshed painted safety zones are currently planned for the Taylor Street/O'Farrell Street and Taylor Street/ Geary Boulevard intersections in the interim.



NOMA/SOMA Signal Retiming & Upgrade Project

The NOMA/SOMA Signal Retiming & Upgrade Project includes the retiming of 350 intersections in the city. Analysis and optimization for the project is anticipated to be completed from June/July 2017 to summer 2018. Signal retiming and upgrades will commence in 2019. Traffic signals along Taylor Street will be upgraded as a part of this program.

MuniForward – 27 Bryant

Muni Forward's plans to enhance safety for people walking, create a Rapid Network, and improve Muni reliability will be achieved through two key programs: service changes and transit priority projects. Through MuniForward new bus bulbs and shelters are planned for stops along the 27-Bryant muni bus route.

PCS3/WalkFirst Quick & Effective

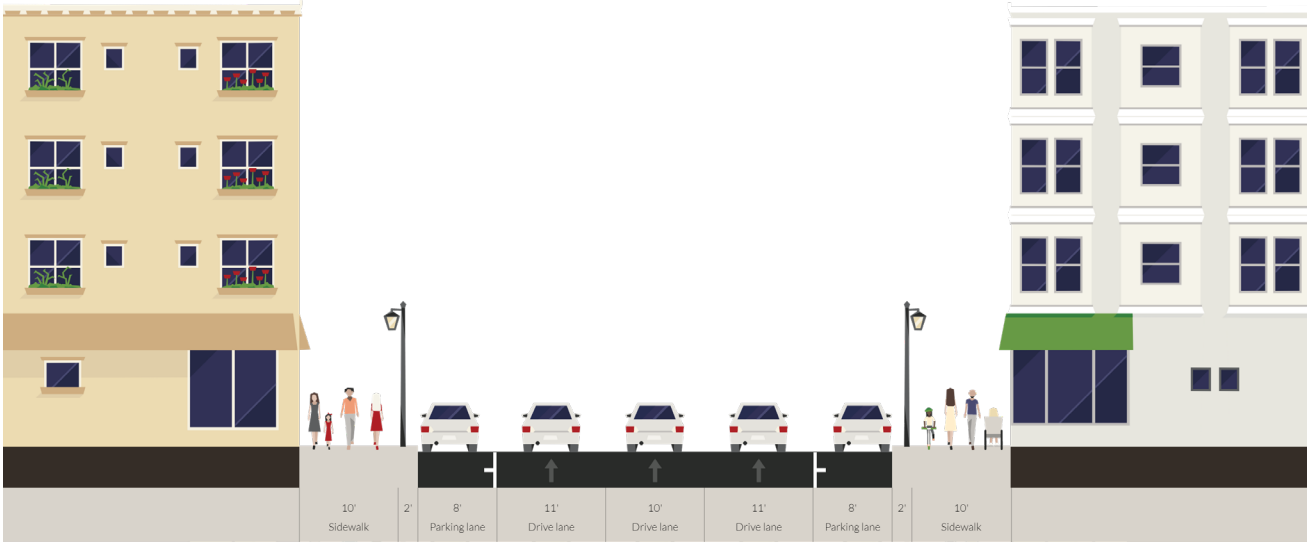
The WalkFirst initiative, which prioritizes pedestrian safety in San Francisco, was developed in 2014 in support of Vision Zero efforts. Through this initiative, a protected left turn will be established for northbound vehicles on Taylor Street turning at Turk and Sutter Streets. The protected left will help separate left turning vehicle traffic and pedestrian crossing phases. Also, signal poles along Taylor Street will be upgraded to include mast arms.

Tenderloin Pedestrian Lighting Project

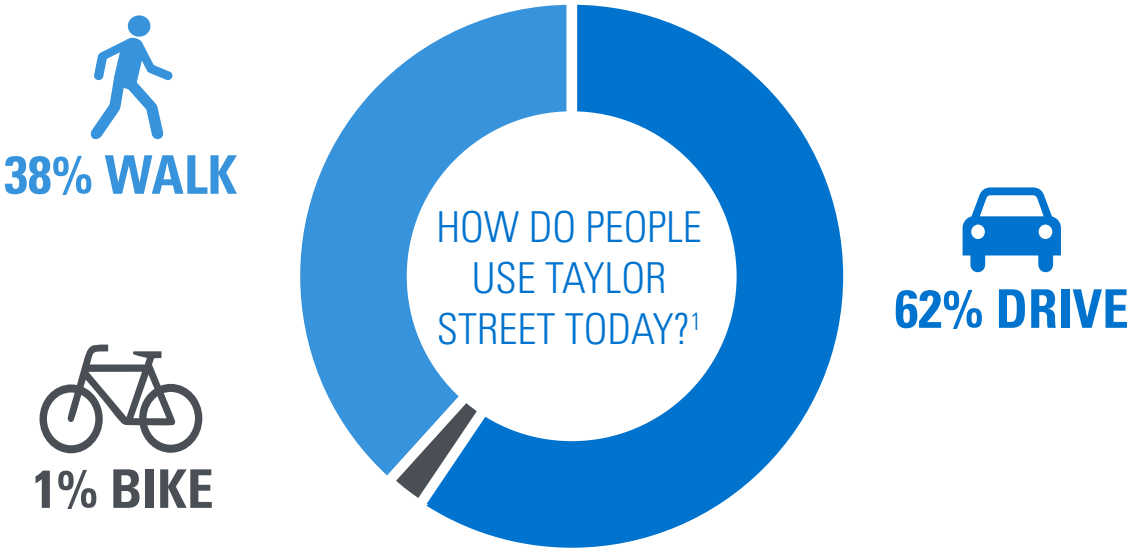
The Tenderloin Pedestrian Lighting Project aims to improve pedestrian safety and beautify Tenderloin streetscapes. Through this project existing lighting along Taylor Street will be upgraded. Upgrades include the installation of decorative "teardrop" fixtures and LED street lights to provide improved light distribution and better visibility on the street and sidewalk.

STREET ELEMENTS
ROADWAY CHARACTERISTICS

Taylor Street is one-way and has three-lanes of northbound vehicle traffic. Parking and sidewalk are provided on both sides. No transit operates along Taylor Street and the street does not have a designated bikeway.



TYPICAL TAYLOR STREET CROSS SECTION



1. Per person vehicle occupancy calculated using 2016 intersection counts and 2002 Transportation Impact Analysis Guidelines for Environmental Review
Source: 2016 Intersection Counts

STREET ELEMENTS

STREETSCAPE ELEMENTS

Pedestrian environments are usually areas of the street where people walk, shop, sit, play or interact. The *Better Streets Plan* serves as a blueprint for the design and maintenance of pedestrian environments in San Francisco. The Better Streets Plan defines Taylor Street as a Downtown Commercial street between Market and Turk Streets and between Ellis to Sutter Streets. Taylor Street between Turk and Ellis Streets is defined as a Downtown Residential Street.

Downtown Commercial streets have high pedestrian volumes and high levels of activity throughout the day. Downtown Commercial streets should have generous sidewalks, abundant pedestrian amenities, and distinctive design treatments. Downtown Residential streets have high residential densities and large buildings. Street elements for Downtown Residential streets should be appropriate for residential living with generous sidewalks, landscaping, and street furnishings. Downtown Residential should also include places for neighbors to gather relax and play.

The following graphic highlights whether relevant standard improvements specified for Downtown Residential and Commercial Street types are found along Taylor Street.

STREET ELEMENTS
CROSSWALKS

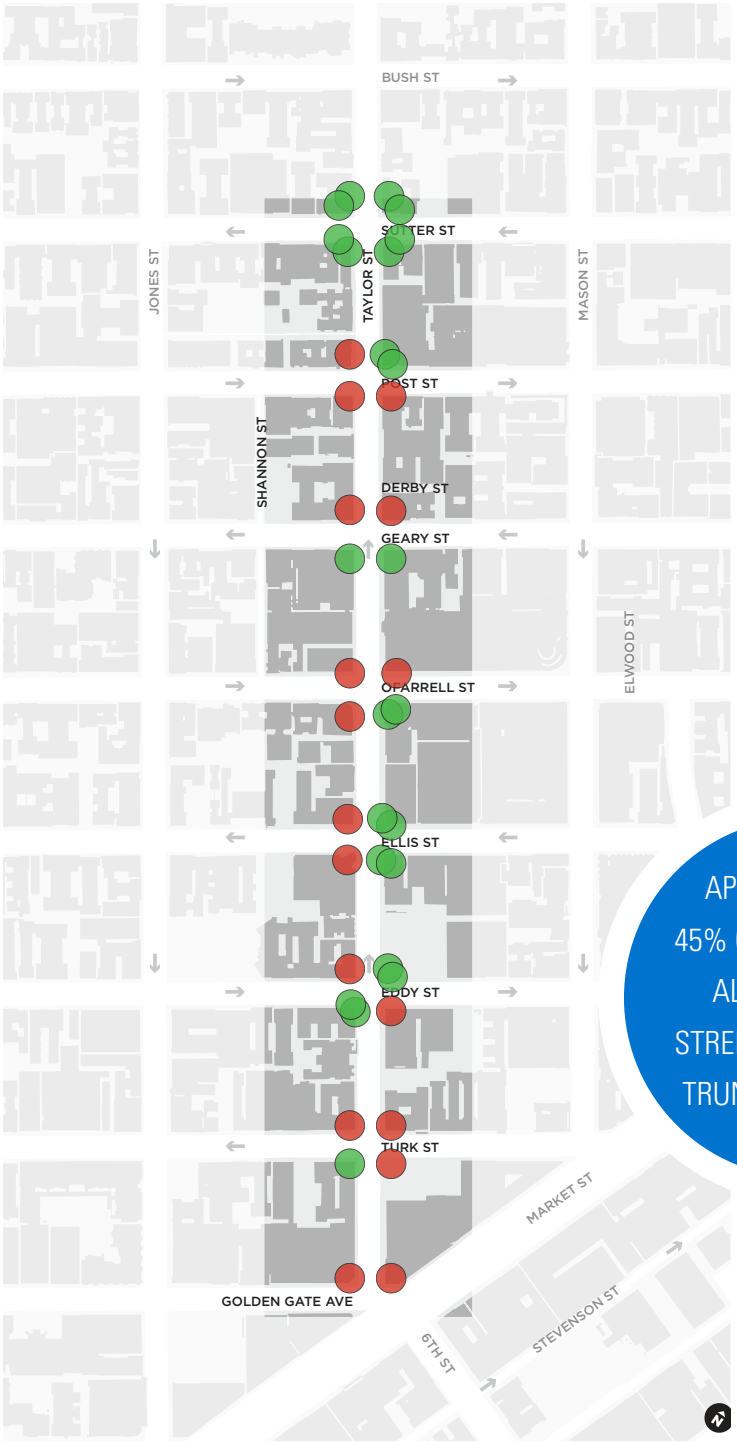
Crosswalks are marked at each intersection on the corridor, and all intersections are traffic signal controlled. Past construction has broken the pattern of many of the decorative crosswalks, and about 24 of the marked 30 crosswalks along the corridor are faded or discontinuous.

OF THE 30 MARKED CROSSWALKS LOCATED ALONG CORRIDOR, 24 ARE FADED OR DISCONTINUOUS.

STREET ELEMENTS

ACCESSIBILITY

Convenient curb ramps are key to creating a comfortable, safe, and accessible crossing environment for pedestrians. Curb ramps provide an accessible crossing route for persons with disabilities, including wheelchair users and the visually impaired. Directional curb ramps align pedestrian with the crosswalk allowing them to cross without having to enter the street. Approximately 45% of curb ramps along Taylor Street are ADA compliant truncated domes.



ADA Curb Ramp Compliance

- ADA Compliant Curb Ramp
- Non-ADA Compliant Curb Ramp or No Curb Ramp

APPROXIMATELY 45% OF CURB RAMPS ALONG TAYLOR STREET ARE MISSING TRUNCATED DOMES

STREET ELEMENTS

TRAFFIC SIGNALS AND SIGHT DISTANCE

ALL OF THE INTERSECTIONS ALONG TAYLOR STREET ARE SIGNALIZED.

All of the intersections along Taylor Street, except the Sutter Street/Taylor Street intersection, are signalized with permitted turns. Northbound left turns at the Sutter Street/Taylor Street intersection are protected. Pedestrian countdown signal heads provided at Turk Street, O'Farrell Street, Geary Boulevard, Post Street and Sutter Street. Accesible Pedestrian Signals (APS) are located at the Market Street/Taylor Street intersection and are not present at other intersections along the corridor. Pedestrian crossing timings vary along the corridor and can present challenges for persons with a disability and seniors crossing at intersections.

The effective turning radii at most intersections along the corridor is approximately 16 to 18 feet, which allows passenger vehicles to turn quickly. Painted safety zones, which improve sight lines between drivers and pedestrians, are located at Turk Street, Eddy Street, Ellis Street and Geary Boulevard. Some of the painted safety zones along Taylor Street have faded paint and/or are missing soft-hit posts.

STREET ELEMENTS

SIDEWALKS

Sidewalks along Taylor Street vary in pavement conditions, width, and grade. Sidewalks between Ellis and Sutter Streets are narrow, but the sidewalk is smoother and more uniform. Sidewalk quality differs along Taylor Street between Golden Gate/Market Street and Ellis Street. Sidewalks on this portion of the corridor also have small cracks and breaks in several locations. Grade changes along Taylor Street also affect the slope of the sidewalk. Between Market and Eddy Streets, Taylor is relatively flat. The street grade increases five percent at Eddy Street and three percent at Geary Boulevard. Sidewalk sub-basements, litter, and informal gatherings reduce pedestrian travel space along the corridor.

SIDEWALKS ALONG TAYLOR STREET VARY IN PAVEMENT CONDITIONS, WIDTH, AND GRADE.

STREET ELEMENTS

BIKEWAYS

No existing designated bikeways are present on along Taylor Street. In 2018, SFMTA installed protected bikeways on Turk Street between Mason and Polk streets, which intersects with Taylor Street. Post and Sutter Streets are currently designated bicycle routes, with shared lanes between cars and bicycles. The *2009 San Francisco Bicycle Plan* recommends minor bicycle improvements on Sutter and Post Streets.

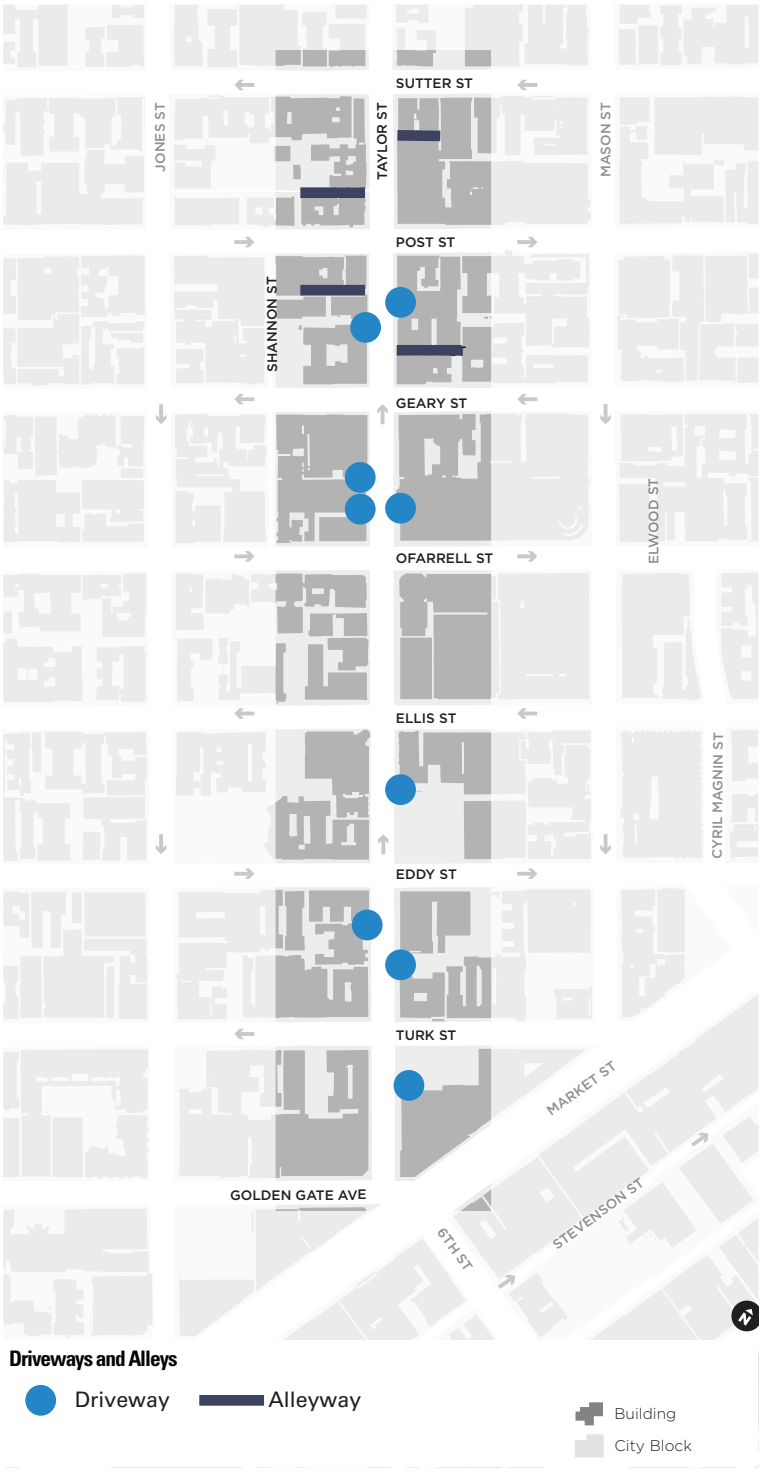
The corridor offers few opportunities to park bicycles though use of informal parking (e.g. sign poles or parking meters) was observed to be low. Two bike racks are located in the block between Turk and Eddy streets.

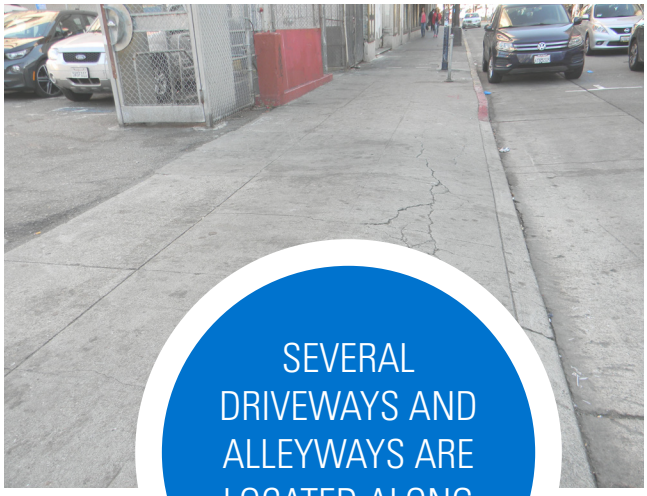
NO EXISTING DEDICATED BIKEWAYS ARE PRESENT ON ALONG TAYLOR STREET.

STREET ELEMENTS

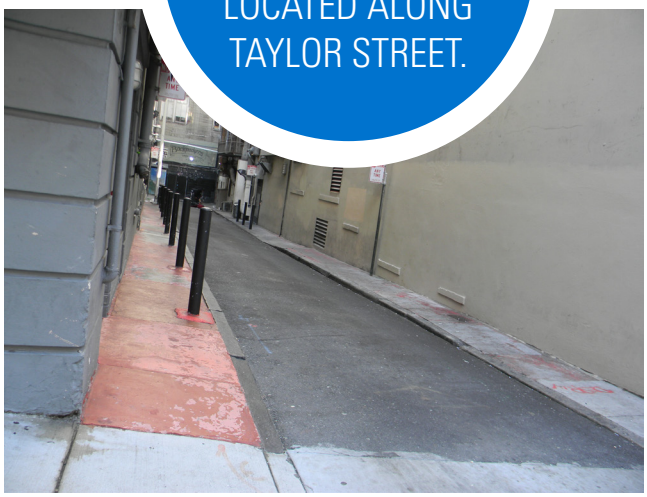
DRIVEWAYS AND ALLEYS

Most blocks have either a driveway and/or alleyway access. Driveways and alleys create conflict points between autos turning into/out of the streets and pedestrians on the sidewalk. Driveways typically access parking garages or surface lots. Continuous building structures along the garage driveways and narrow alleys with buildings built out the corners can reduce driver visibility of pedestrians.





SEVERAL DRIVEWAYS AND ALLEYWAYS ARE LOCATED ALONG TAYLOR STREET.



STREET ELEMENTS

CURBSIDE ELEMENTS

Common curbside uses along Taylor Street include parking and commercial or passenger loading zones. Passenger loading zones are designated in front of hotels along Taylor Street including the Warfield, Hilton, and Cliff. Additionally, a passenger loading zone is reserved for taxis on the east block of Taylor between Ellis and O'Farrell Streets. Metered, one to two hour parking is relatively continuous on both sides of Taylor Street between Market and Sutter Streets.

COMMON CURBSIDE USES ALONG TAYLOR STREET INCLUDE PARKING AND PASSENGER AND COMMERCIAL LOADING ZONES.

STREET ELEMENTS

LIGHTING

Cobra head lights are provided at intersection and a few mid-block locations along Taylor Street. The remainder of the corridor is lit by decorative twin teardrop light fixtures, which provides illumination for both the street and the sidewalk. Decorative post top lighting fixtures are located at the Sutter Street/Taylor Street intersection. Street trees, such as those located on the western block between O'Farrell Streets and Geary Boulevard, may limit the effectiveness of sidewalk lighting.

Twin Tear Drop Lighting

Cobra Head Lighting

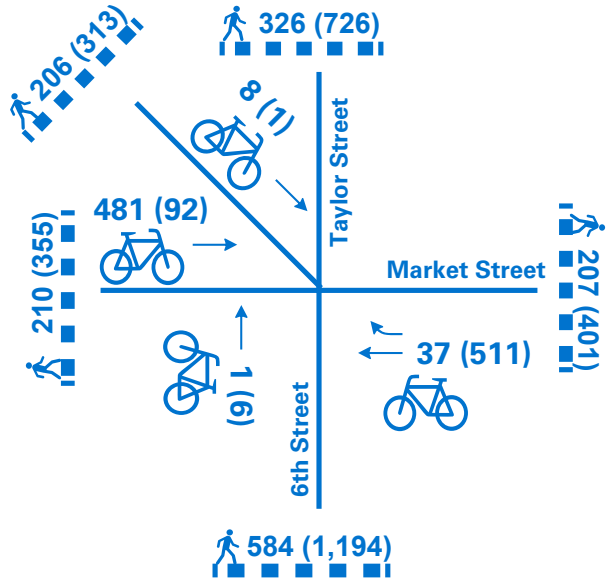
Post Top Lighting

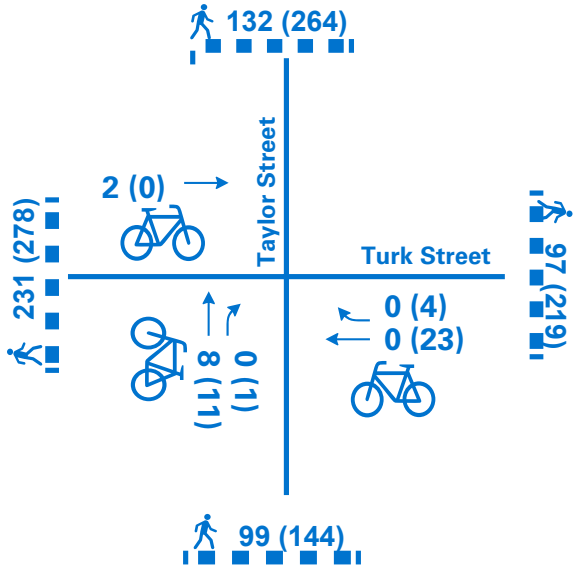
Twin Teardrop Lighting Fixtures between Turk and Eddy Streets

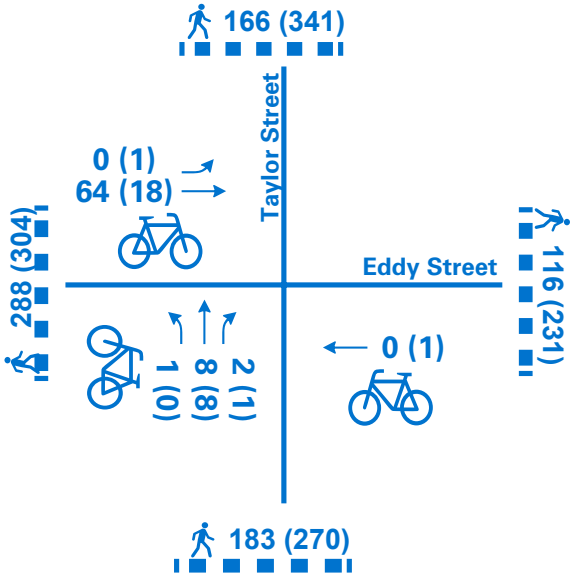
STREET ELEMENTS

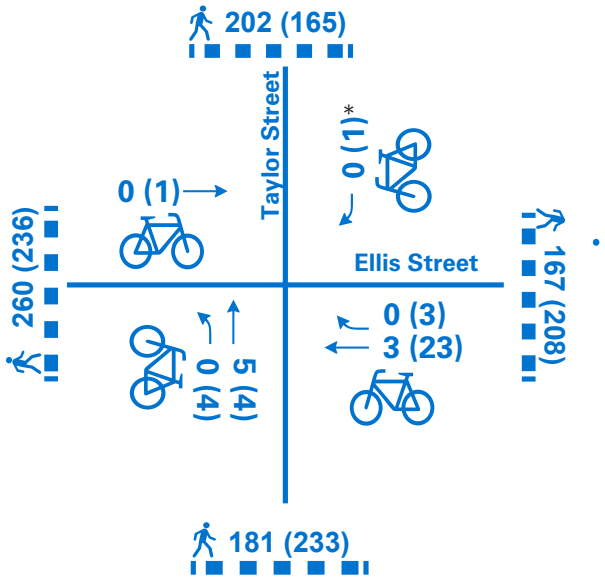
PEAK HOUR PEDESTRIAN AND BICYCLE VOLUMES

Pedestrians account for almost 40% of people traveling on Taylor Street, while cyclists make up about 1%. Pedestrian volumes along Taylor Street are generally lower than volumes on other Downtown streets, such as Market Street. The Geary Boulevard/ Taylor Street intersection had the highest pedestrian volumes during the morning (7:00 AM - 9:00 AM) and afternooon (4:00 PM - 6:00 PM) peak hours. The Eddy Street/Taylor Street intersection had the highest bicycle volumes in the morning peak hours and the Turk Street/Taylor intersection had the highest bicycle volumes during the afternoon peak hours.





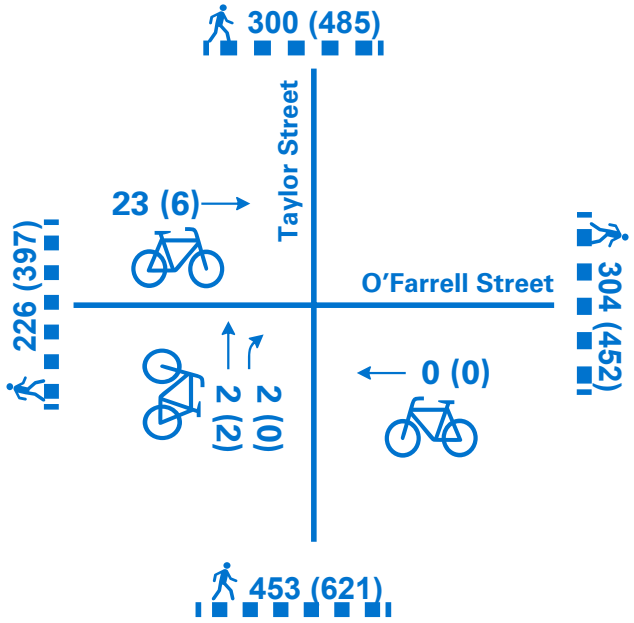


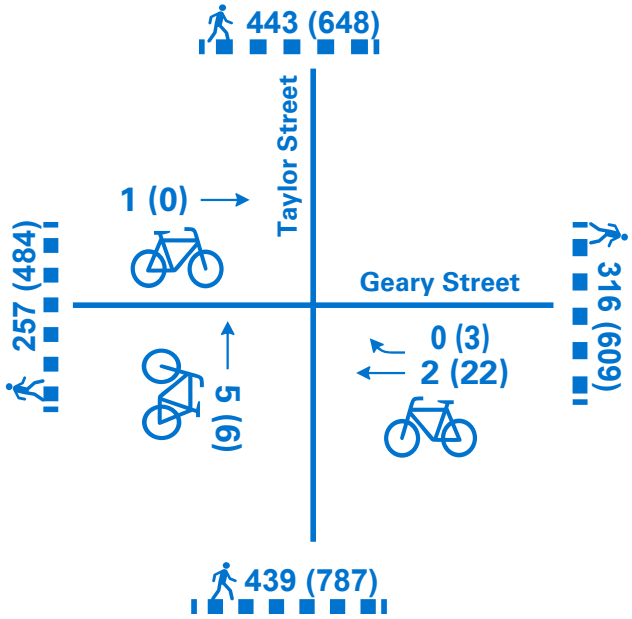


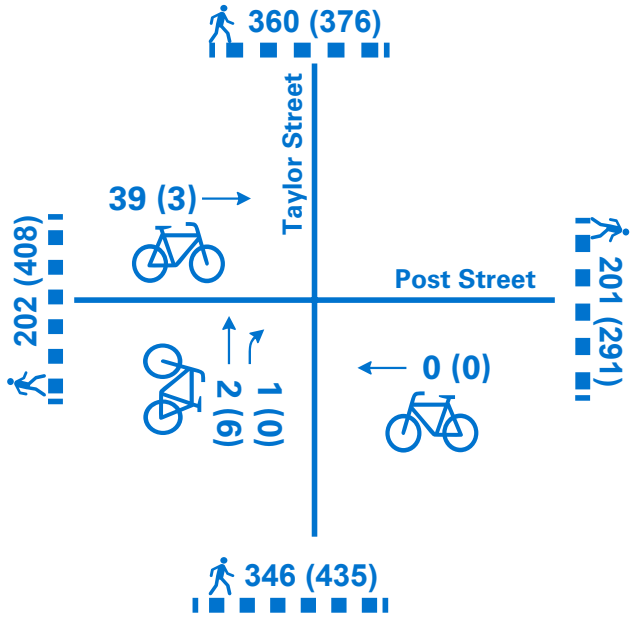
*Wrong way riding

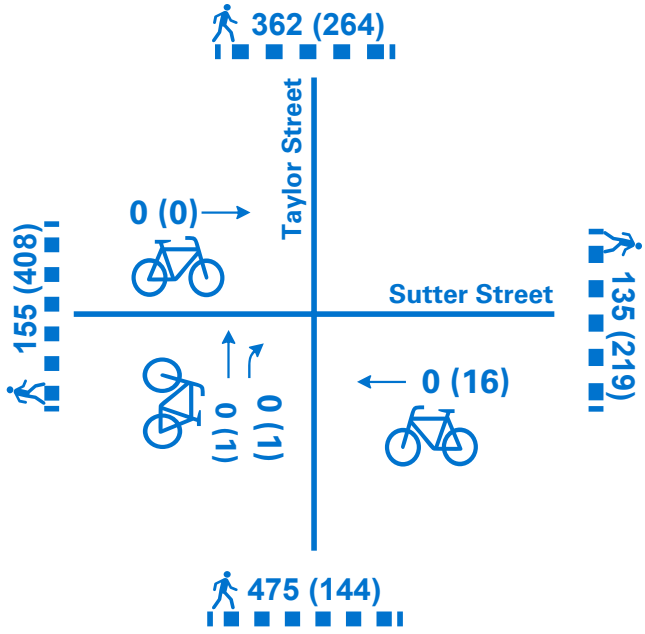
STREET ELEMENTS

PEAK HOUR PEDESTRIAN AND BICYCLE VOLUMES





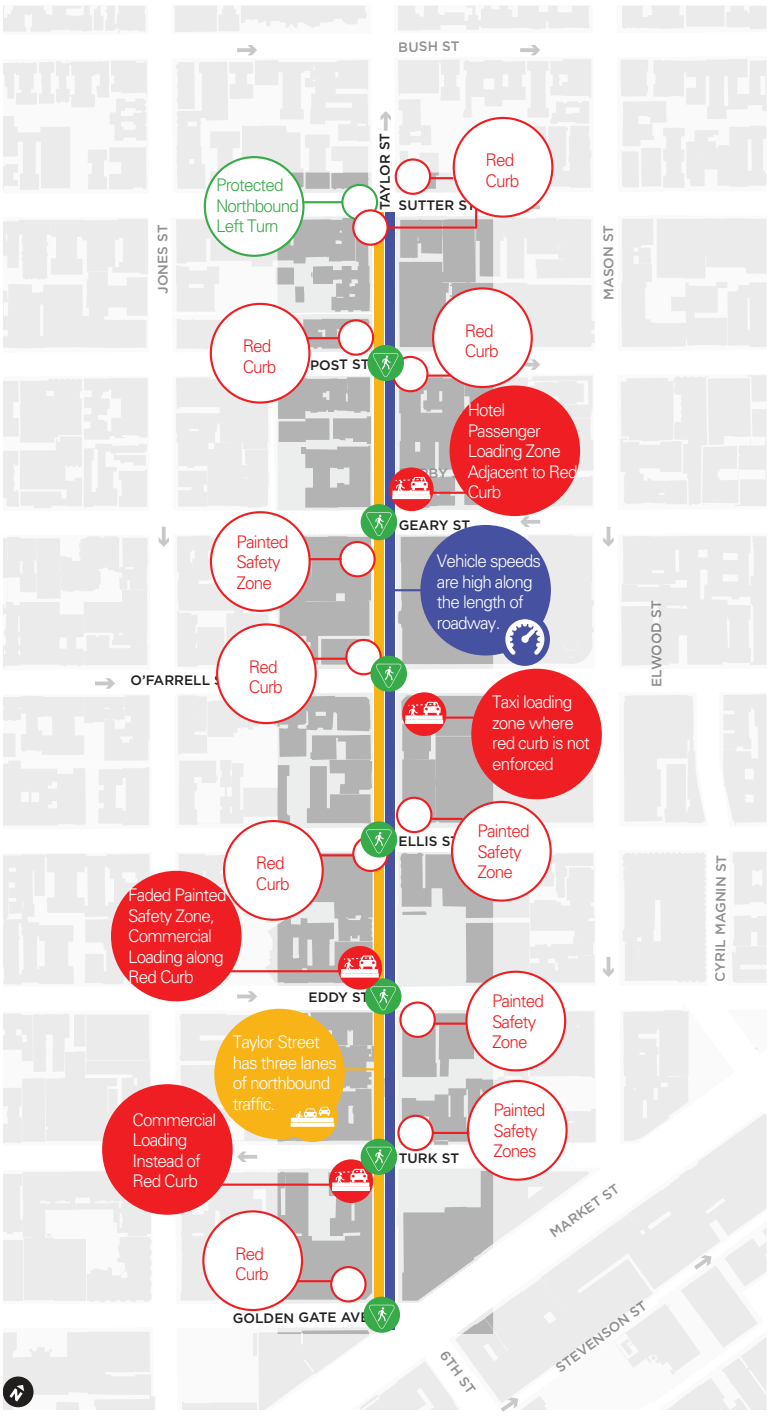




SAFETY

PEDESTRIAN SAFETY

Pedestrians are disproportionately involved in collisions on Taylor Street. Over 50 percent of injury collisions along the corridor involved pedestrians, although pedestrians account for 40 percent of people at intersections. The main safety issues for people walking on Taylor Street are high speed traffic, permitted turns, multiple threat collisions, and sight lines at intersections. Over 60 percent of pedestrian-auto collisions occurred when a turning vehicle failed to yield to a pedestrian.



COLLISION TRENDS

Cars often travel faster than the 25MPH posted speed limit on Taylor Street. Pedestrian injuries and deaths increase exponentially as vehicle speed increases. As a result, reducing speed is the most critical way to improve safety.

Permitted turn conflicts occur when drivers are allowed to make left and/or right turns when pedestrians have a walk signal. Protected turns and right-turn-on-red restrictions reduce these conflicts.

Multiple threat collisions occur on roads with multiple travel lanes. When a pedestrian crosses the street, a car yielding to the pedestrian may actually block the ability of a car in the second lane from seeing the pedestrian in the crosswalk.

Good sight lines between drivers and pedestrians allow both parties to make informed decisions about entering the intersection. Prohibiting parking and loading near to crosswalks and providing bulb-outs can help improve sightlines.

EXISTING SAFETY MEASURES

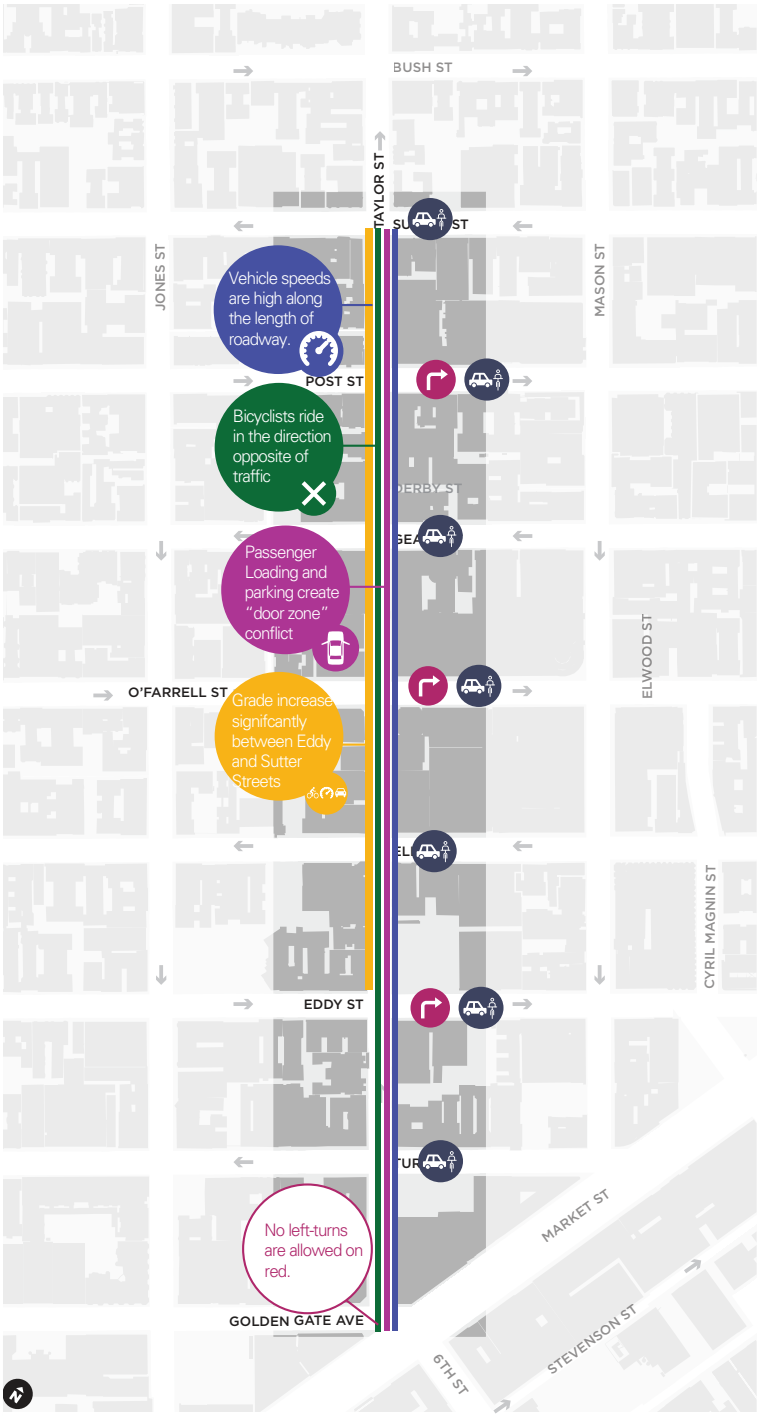
Intersections with Good Sight Lines

Intersection with Protected Turn

SAFETY

BICYCLE SAFETY

Of all injury collisions along the corridor, eight percent involved cyclists. Cyclist behavior accounted for two thirds of the bicycle-auto collisions. The main safety issues for people bicycling on Taylor Street are characterized by these collision profiles: high speed traffic, wrong way riding, right hook, broadside, dooring, and speed differential. Over half of the bicycle collisions occurred at the Taylor Street/Market Street/6th Street intersection.



COLLISION TRENDS

Cars often travel faster than the 25MPH posted speed limit on Taylor Street. Cyclist injuries and deaths increase exponentially as vehicle speed increases.

Dooring collisions occur when a cyclist is struck by a car door.

Differing travel speeds between bicyclists and vehicles can increase potential for collisions

Wrong way riding collisions occur when a cyclist is traveling in the street opposite the direction of vehicular traffic.

Right turns are permitted on Taylor Street. Right hook collisions occur when a vehicle turning right collides with a cyclist.

Broadside collisions occur when the front of a vehicle collides with a cyclist.

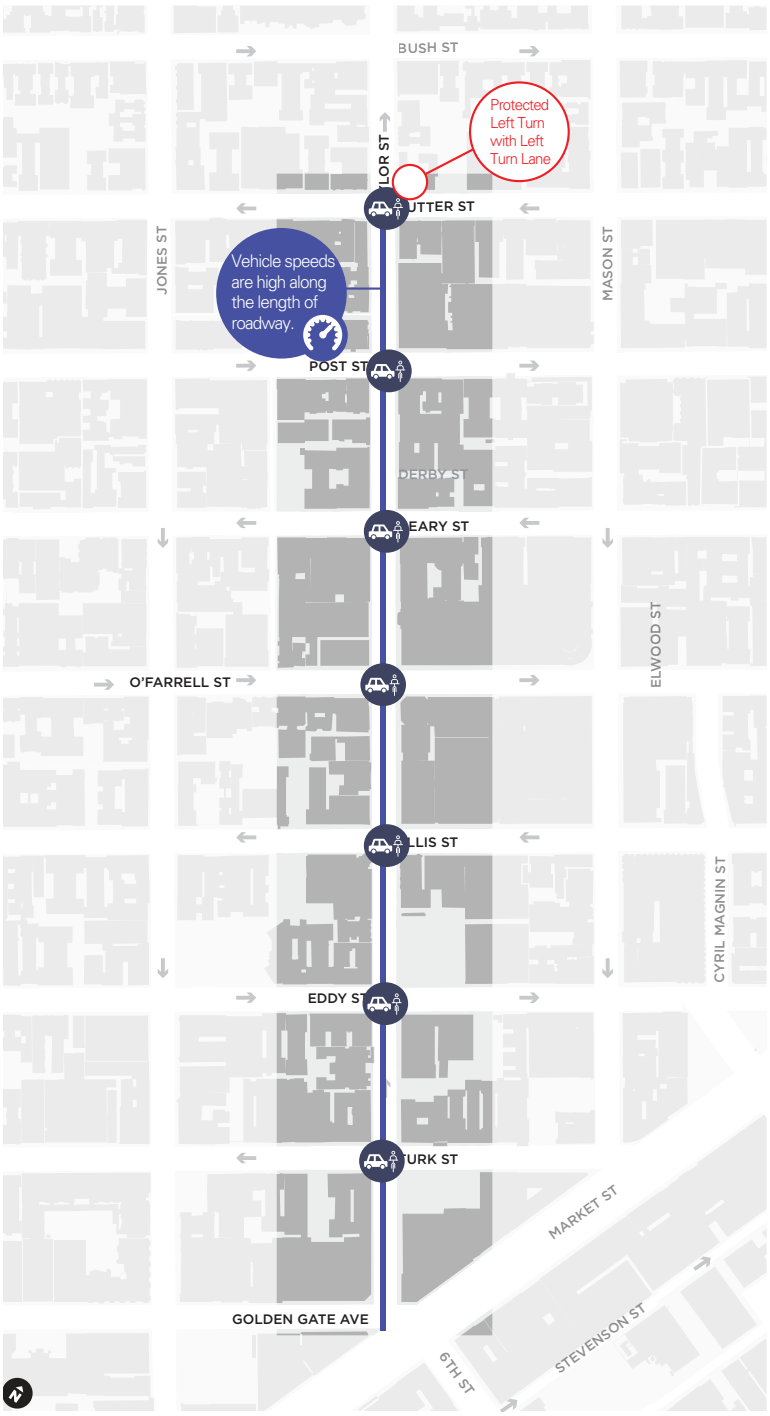
EXISTING SAFETY MEASURES

Intersections with Turn Restrictions

SAFETY

DRIVER SAFETY

Approximately 32% of all injury collisions on Taylor Street occurred between automobiles. Over half of auto collisions were caused by risky driver behaviors such as red light running and traveling at unsafe speeds. The main collision issues for vehicles traveling on Taylor Street are high speed traffic and broadside collisions.



COLLISION TRENDS

Cars often travel faster than the 25MPH posted speed limit on Taylor Street.

Broadside collisions occur when the front of a vehicle collides with the side of another vehicle.

EXISTING SAFETY MEASURES

Protected Left Turn

SAFER TAYLOR PUBLIC LIFE STUDY

WHAT IS A PUBLIC LIFE STUDY?

A public life study is an assessment of how public spaces function. A public life study uses observation surveys to understand if, and how, public spaces serve the needs of people. Common pedestrian needs include comfort, safety, and ease of movement for all ages and abilities. Surveys include counting of pedestrians and cyclists, as well as an inventory of stationary activities, movement activities, pedestrian behaviors, and nuisances.

WHY CONDUCT A PUBLIC LIFE STUDY?

Public life surveys provide key insights on when, where, and how pedestrians use public spaces. This information can inform ideas and designs for improvements that allow public space to function better communities. Gathering data on pedestrians at regular intervals can be useful to determine the times of the day where public space is in high demand. It can also provide information on pedestrian needs that may be undeserved. For example, large amounts of people sitting informally or on the ground may indicate a need for formal seating. A public life study is an important test for how public space performs for the people who use it and an useful indicator for where for focus future improvement efforts.

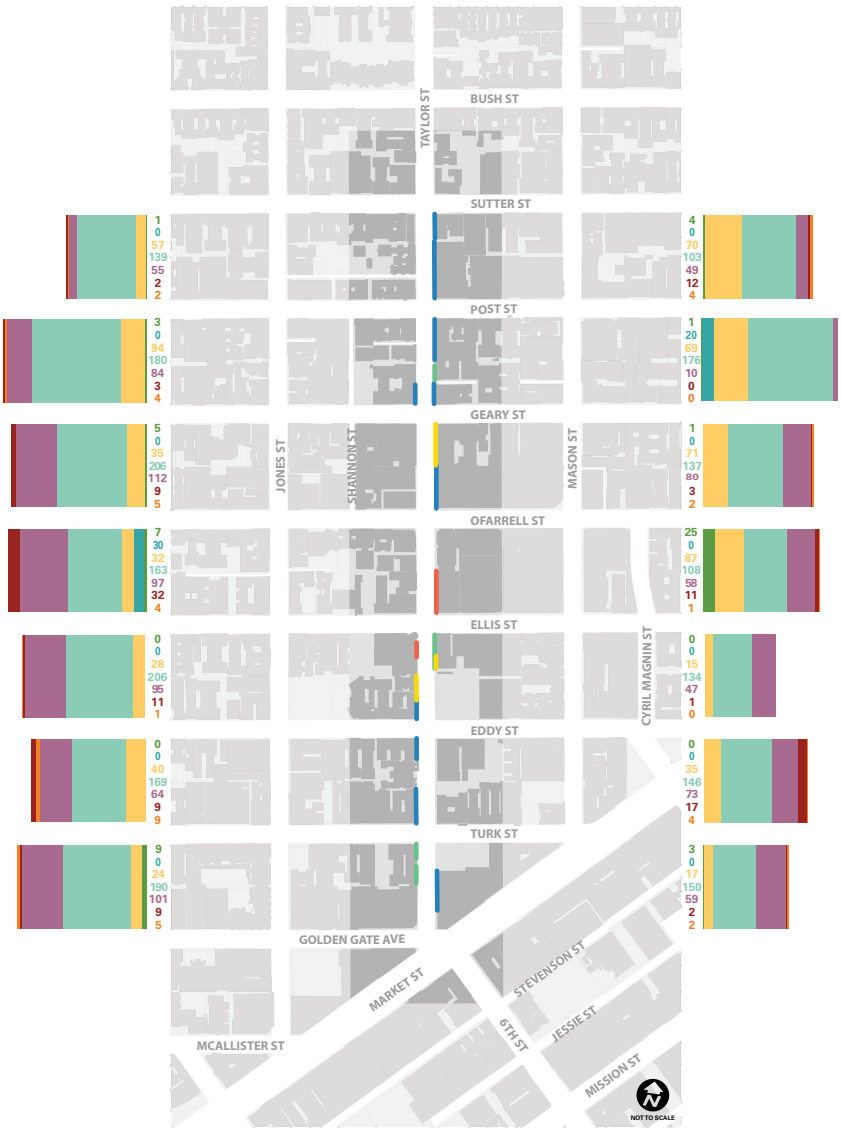
WHEN WAS THE SURVEY DONE?

Data for the Safer Taylor Street Public Life Study was collected in June 2017. Typical weekday patterns from 8AM to 8PM were studied, as well as weekend activity. Weekend data is important to collect as Taylor Street is home to a variety of art/music venues and religious institutions, which have different levels of activity on Saturdays and Sundays.

SAFER TAYLOR PUBLIC LIFE STUDY

MOVEMENT ACTIVITY

The block between Geary Boulevard and Post Street had the highest active movement



53% of active movement involved people walking down the street.

PEDESTRIAN MOVEMENT

Movement Type

JOGGING
BIKING
ENTERING OR EXITING A VEHICLE
ENTERING OR EXITING A BUILDING
WALKING DOWN THE STREET
WAITING TO CROSS THE STREET
WAITING TO ENTER A BUILDING
WAITING FOR TAXI OR RIDESHARE

Building Activation

- Walls with Limited Activation (e.g. murals/art)
- Walls/Unactivated Frontages
- Vacant Storefronts
- Construction/Boarded-Up Windows

Who Was Observed on Taylor Street?

Over 60% of observed pedestrians were male

About 4% of observed pedestrians had impaired mobility

About 9% of observed pedestrians were over 65 or under 15 years of age

SAFER TAYLOR PUBLIC LIFE STUDY

STATIONARY ACTIVITY

The block between Ellis Street and O'Farrell Street had the highest stationary activity

70% of stationary activity was people standing, not sitting

STATIONARY ACTIVITY

Movement Type

Building Activation

- Walls with Limited Activation (e.g. murals/art)
- Walls/Unactivated Frontages
- Vacant Storefronts
- Construction/Boarded-Up Windows

What Were People Doing on Taylor Street?

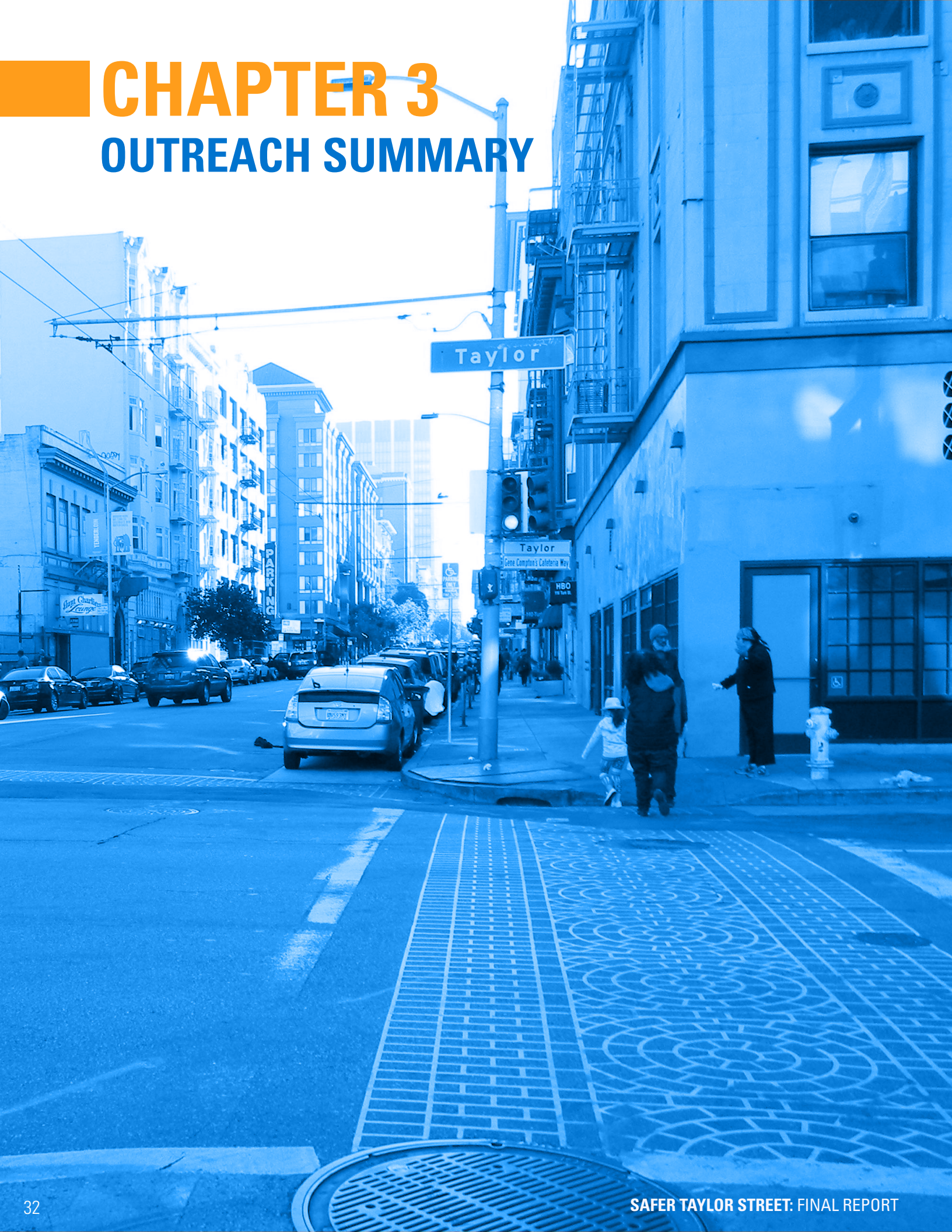
7% using their cell phones

5% smoking

4% gathering/ socializing

3% sleeping

CHAPTER 3
OUTREACH SUMMARY



OUTREACH SUMMARY

The MTA worked with Taylor Street residents, workers, community groups and advocacy organizations to develop a new vision for the street that meets the City of San Francisco's Vision Zero goals of ending traffic fatalities for all road users. Through more than 30 unique events and meetings, MTA received input from more than 1,500 Tenderloin residents, workers and community leaders. The outreach approach included many different types of opportunities to participate in formal and informal settings and in multiple languages to give all community members a voice.

The goal of public participation in this project was to create a plan for a safer Taylor Street that met the needs of the community and built support for a visionary, implementation-ready design alternative. The project used a multipronged approach that leveraged existing organizations and community groups with the goal of gathering input and expanding the influence of a broad and representative collection of community members.

COMMUNITY PARTICIPANT SUMMARY

Between Winter 2016 and Fall 2018 the MTA hosted more than 30 outreach events and meetings in the Tenderloin neighborhood, and gathered feedback from more than 1,500 participants.

WINTER 2016 – SUMMER 2017

EXISTING CONDITIONS

- Community Working Group #1
- Project Open House #1
- One-on-One Stakeholder Meetings
- Tabling at Community Events

FALL 2017 – SPRING 2018

DESIGN ALTERNATIVES

- Community Working Group #2 and #3
- Community Design Workshop #2
- Tactical Urbanism Pop-Up Event
- Photovoice Project with Boys and Girls Club
- One-on-One Stakeholder Meetings
- Tabling at Community Events
- Pop-Up Tables on Taylor Street

SUMMER 2018 – FALL 2018

FINAL RECOMMENDATIONS

- Community Working Group #4
- Project Open House #3
- Stakeholder Meetings

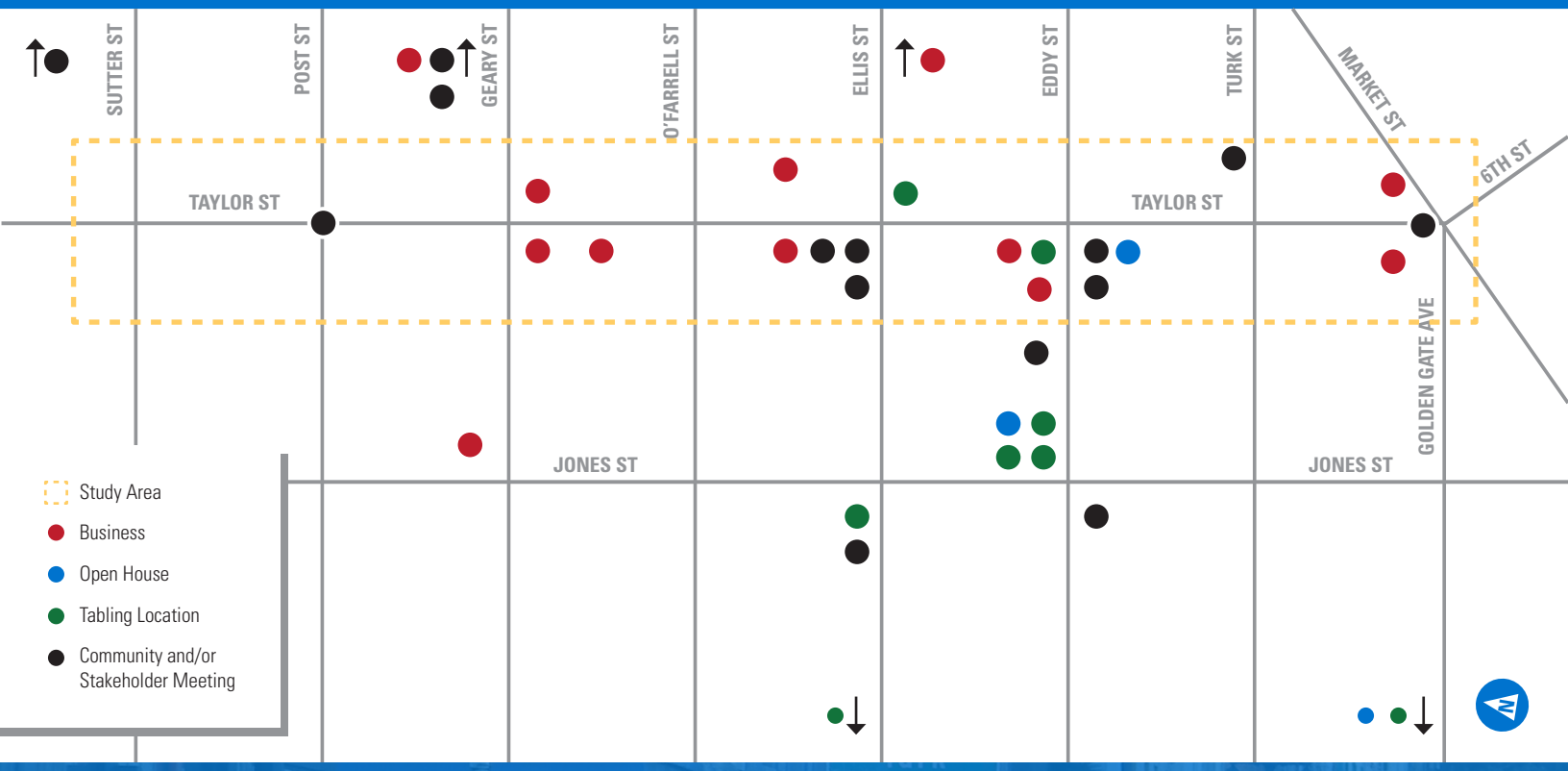
1,500 IN-PERSON PARTICIPANTS

34 OUTREACH EVENTS

14 OUTREACH TOOLS

15 NEIGHBORHOOD AND NON-PROFIT GROUPS

11 BUSINESSES ON THE CORRIDOR



COMMUNITY WORKING GROUP

Key community leaders and residents regularly with the SFMTA project team to learn about progress and make critical decisions collaboratively. This group is open for anyone to join. The group is composed of representatives from the Boys & Girls Club, TNDC, Tenderloin Economic Development Project, Central City SRO Collaborative, residents, merchants, as well as SFMTA staff and consultants (SFMTA, TLCBD, Alfred Williams Consultancy).

1ST WORKING GROUP MEETING

- Introduce project and review existing conditions
- Identify issues and opportunities
- Identify relevant stakeholders and ask participants to spread the project widely among their networks

2ND WORKING GROUP MEETING

- Gather feedback on design alternatives, especially on wider sidewalks and loading zones.
- Key Questions:
  - *Where would you like to see wider sidewalks?*
  - *What do you think is the best use for this new community space?*
  - *Are there specific places where you would recommend additional loading zones for passengers or goods?*

3RD WORKING GROUP MEETING

- Provide update on current design and outreach activities
- Gather feedback on schematic design
- Facilitate open discussion on the project's outreach process

COMMUNITY OPEN HOUSES & DESIGN WORKSHOPS

1ST OPEN HOUSE – JUNE 28, 2017 – PROJECT OVERVIEW + INTERACTIVE GAMES

- Introduced a range of opportunities and the toolkit of livability improvements and shared what the project will focus on:
  - Pedestrian safety and accessibility
  - Cyclist safety and mobility
  - Traffic, circulation and loading
  - A more livable Taylor Street for everyone
- Asked participants to use stickers to share where they live, work, play, walk, travel, and engage in other activities
- Asked where participants wanted to see improvements, what they could be, and what are the challenges they face
- Aasked people to vote on which performance measures matter to them most: Safety, User Experience, Community Engagement, Innovation, Neighborhood Needs
- Presented existing safety information for Taylor Street (e.g. its location on the Vision Zero High Injury Network, how many injuries by mode, the key contributors to crashes), mode split, existing conditions, maps and figures on the ethnic diversity and age distributions in the area

2ND OPEN HOUSE – AUGUST 30, 2017 – DESIGN ALTERNATIVES + LIVE DATA

- Asked participants for feedback and their preferences on:
  - Sidewalk widening and the best use of new community space
  - Street design models presented
  - Specific locations for passenger and commercial loading zones
  - Any other ideas on how to improve traffic safety
- Hosted an interactive exercise where participants could use 3D materials to build their own street model

3RD OPEN HOUSE – JUNE 19, 2018 – PROPOSED DESIGN + PHOTOVOICE GALLERY

- Hosted an open gallery to view the design proposal and unify community and technical input
- Introduced the next phase of the project focused on streetscape design for Taylor Street
- Presented the PhotoVoice gallery, a collection of stories showcased through photographs and essays by Tenderloin youth made possible by The Boys & Girls Club and 826 Valencia


THE MINEOLA TWINS
LIGHTING
SEATING

POP-UP WORKSHOP

In August 2017, the Safer Taylor Street team hosted a temporary, one-day pop-up event to demonstrate potential street design treatments. This innovative approach to public outreach allowed over 1000 participants to experience the full-scale complete street makeover and discuss the design with friends, co-workers, and neighbors while conducting their daily lives.

In collaboration with other City agencies and community based organizations (CBOs), such as SF Public Works, SF Parks & Recreation, Tenderloin Community Benefit District and Walk San Francisco, the MTA team:

- Installed two parklets, greenery, commercial and passenger loading spaces, and a parking protected bikeway
- Removed some on-street parking and one vehicle travel lane between Turk and Eddy streets
- Hosted an interactive community workshop, collecting community input on alternative concepts using 3D models and guided tours

The pop-up event created a fun and useful platform to gather detailed input from a broad cross-section of people who use the corridor daily, and allowed the design team to refine and test design concepts.

Parklets and greenery created public space for people to relax and enjoy the city around them.

Event organizers collected input on alternative concepts from people as they walked by in one of the parklets.

The pop-up tested parking-separated bikeways with active passenger and commercial loading zones to test a potential curbside management scheme.

CBOs and local businesses helped run fun and inviting programmming throughout the day, including a YMCA art class, games, an open mic, and live music.


Installed parking-protected separated bikeway
Provided commercial and passenger loading
Tested crosswalk over protected bikeway for loading activities
CBOs and local businesses hosted fun and interactive programming
Removed some parking and one vehicle travel lane
Offered greenery and landscaping
Installed parklet to host pop-up community workshop
Gathered feedback on design alternatives from broad cross-section of people who use the corridor daily

SAFER TAYLOR STREET YOUTH PHOTOVOICE PROJECT

PHOTOVOICE VISION AND MISSION

PhotoVoice's vision is for a world in which everybody has the opportunity to represent themselves and tell their own story.

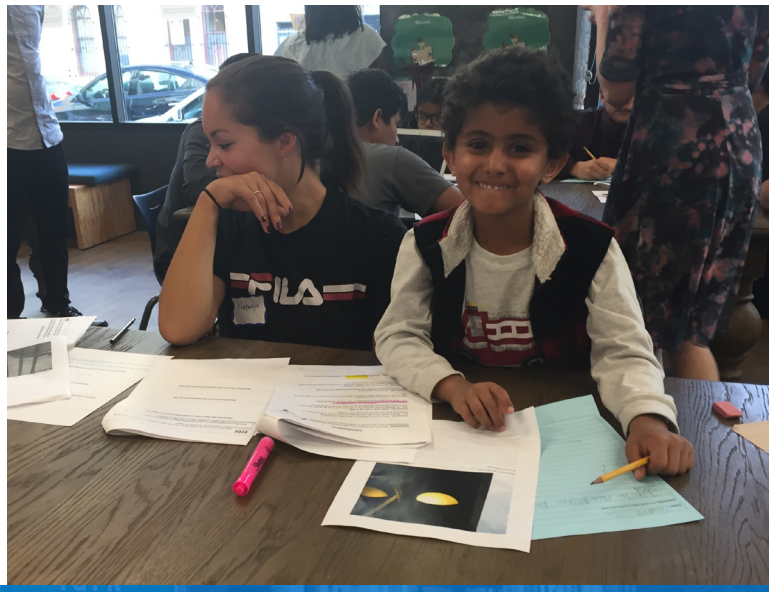
Our mission is promote the ethical use of photography for positive social change, through delivering innovative participatory photography projects. By working in partnership with organizations, communities, and individuals worldwide, we will build the skills and capacity of underrepresented or at risk communities, creating new tools of self-advocacy and communication.

Eleven participants (ranging from 9 years old to 17 years old) from the Tenderloin Boys & Girls Clubhouse collaborated with SFDPH and SFMTA to complete a project called PhotoVoice, which challenged them to think critically and communicate their perspective on traffic safety on Taylor Street through the use of photography. PhotoVoice provided opportunities to express oneself, build valuable communication skills, and advocate for change.

WHAT IS PHOTO VOICE?

With cameras provided by the city, the youth took to the street to record their likes, dislikes, and ideas of how to improve traffic safety on Taylor Street. They wrote accompanying messages to provide a narrative for their photos.

PhotoVoice fosters direct community engagement between the youth, their community, and city agencies. While the Tenderloin neighborhood has a high proportion of minorities and low income household, PhotoVoice generates stories that can be shared among all members of the community regardless of their age, language, economic or social background. Photographs can be understood regardless of language, culture or other factors.



SAFER TAYLOR STREET YOUTH PHOTOVOICE PROJECT

KEY FINDINGS: THEMES AND TOPICS

Sidewalk and Street Conditions: Need for more public bathrooms and trash cans, especially trash cans that double as artwork.

The youth photographed needles in the cracks of the sidewalk, feces randomly and frequently appearing on the sidewalks, potatoes splattered on the ground, dumpsters uncovered in the middle of the sidewalk, trash cans filled to the brim with overflowing trash surrounding it, and bags of trash and boxes abandoned in the middle of sidewalk, in front of store fronts and right next to trash cans. During discussions, the youth repeatedly reported that garbage, feces and needles on their streets and sidewalks were common occurrences seen on a daily basis. In their photographs and messages, the youth called for public bathrooms and more trash cans, especially trash cans that double as art work.

Figure 1 taken by Eric R.

"When I walk through the narrow, middle [sidewalk] that always reminds me of how clean [sidewalks] should be. I think to myself widening the[m] and cleaning it would be safer. How do I feel safe and get a feel of safer in an environment which always smells like trash and poop and looks messy."

- Eric R, Age: 17

SAFER TAYLOR STREET YOUTH PHOTOVOICE PROJECT

KEY FINDINGS: THEMES AND TOPICS

Green Infrastructure, Public Murals and Art: Need for more greenery, specifically trees and flowers, on the sidewalks plus more and better maintained murals and art including creative street lighting.

Taylor Street noticeably lacks greenery as there have been concerns about trees providing cover for drug crimes historically. In written messages and during discussions, the youth expressed a desire for greenery, specifically trees and flowers on the sidewalks.

When asking participants what they liked about Taylor Street, the most common answer was public art, whether it be murals or customized trash cans. They asked for murals and art to be better maintained and to also add more. Some participants also suggested adding holiday decorations and string lights like there is on Market Street.

Figure 2 taken by Paulina C.

"These murals bring life to this street making even the dirtiest and the darkest of the shadows come out and play. These murals bring joy and happiness to all, taking them from under the bridge to on the bridge and dancing. These artworks make this street better, brighter and more beautiful. They make me feel good and safe knowing someone out there wants to bring joy to a place that is pushed around and bullied by places that think they are better than us."

- Paulina C, Age: 13

SAFER TAYLOR STREET YOUTH PHOTOVOICE PROJECT

KEY FINDINGS: THEMES AND TOPICS

Safe Public Spaces: Need for ample and programmable public space with great public amenities.

Loitering, homelessness and drug use are prominent issues in the Tenderloin. The youth photographed needles in the cracks of the sidewalk, as well as groups of people loitering and blocking off entire sidewalks. They discussed how loitering and drug use make them feel unsafe walking on the sidewalk.

Figure 3 taken by Omar E.

"The people in the street act like they are cool and all that, but it just annoys me the way they show-off. It makes me want to go on the other street (which I do) because I don't feel safe around big groups of people playing poker or whatever."

– Omar E., Age 11

"The group of people with smoking and drinking should have seats."

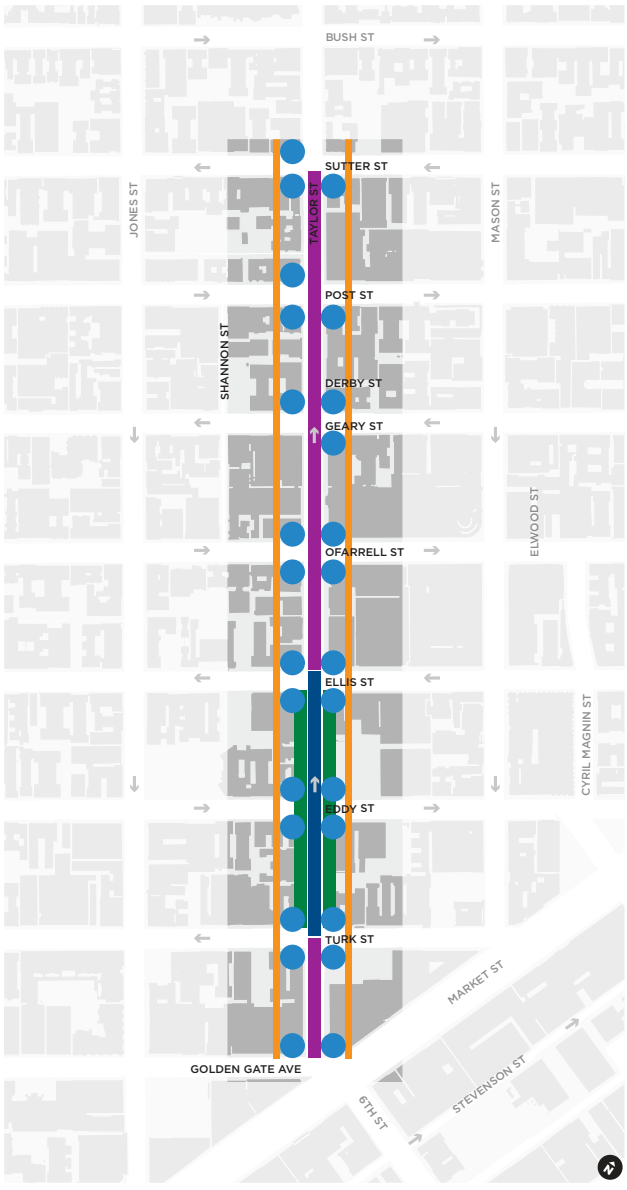
- Eric R, Age: 17

CHAPTER 4
PROPOSED PROJECT

PROPOSED PROJECT OVERVIEW

The project team refined preliminary design options to develop a single unified design proposal for Taylor Street, based on strong community input, technical analysis, and national and citywide best practices. Key elements of the Proposed Project include:

- Wider sidewalks (below Ellis Street) and bulb-outs at intersections to create more public space for walking safely, shorter crosswalks, landscaping, art, and neighborhood amenities
- Repurpose one of the existing three travel lanes to provide critical roadway safety improvements with minimal impacts to traffic congestion during most of the day
- Improving loading zones with up to 5 foot buffers from travel lanes, allowing for safer pickup and dropoff for tourist buses, large event trucks, mobile neighborhood services, and paratransit vans.




Sidewalk widening

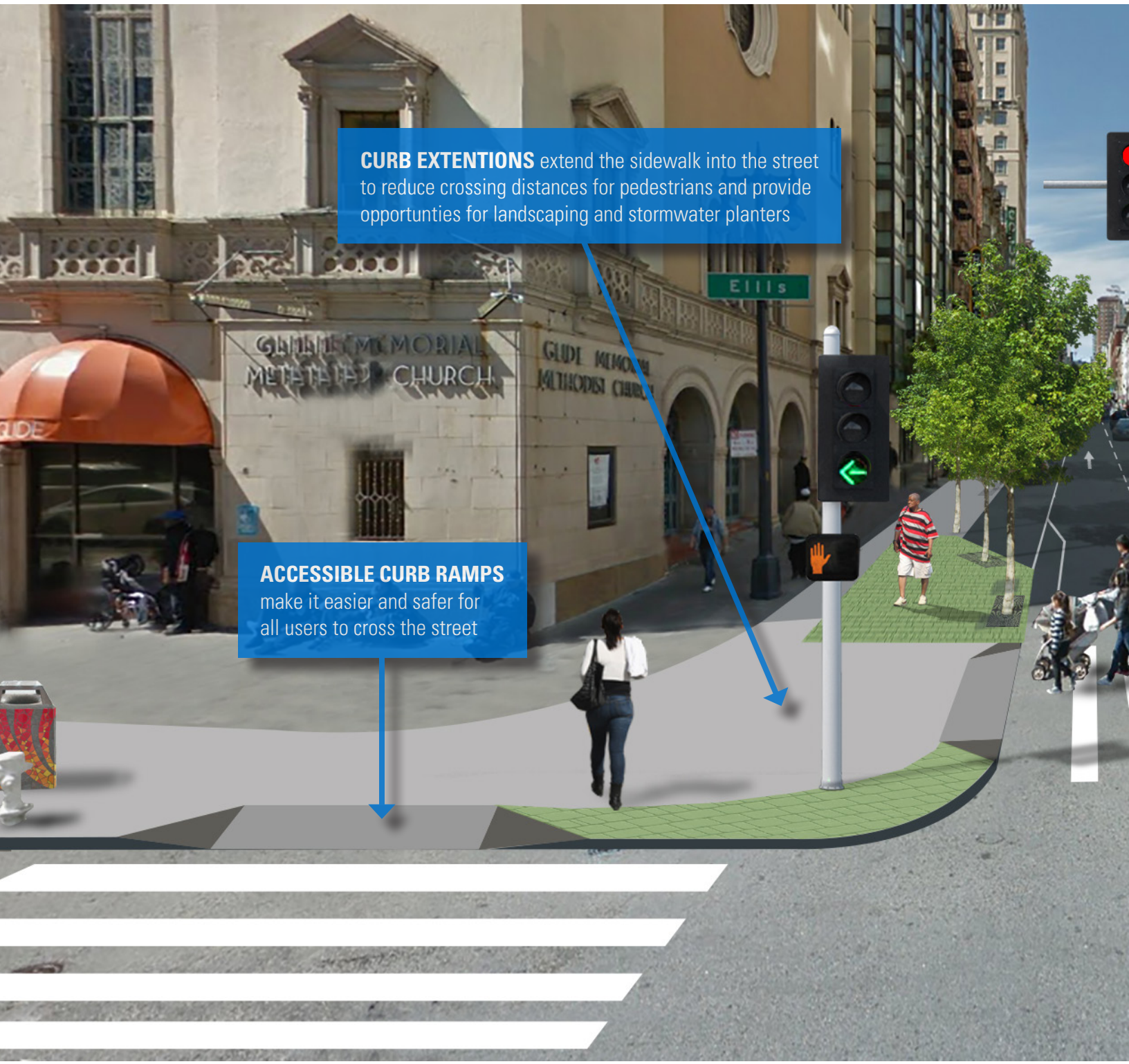

Bulb-out

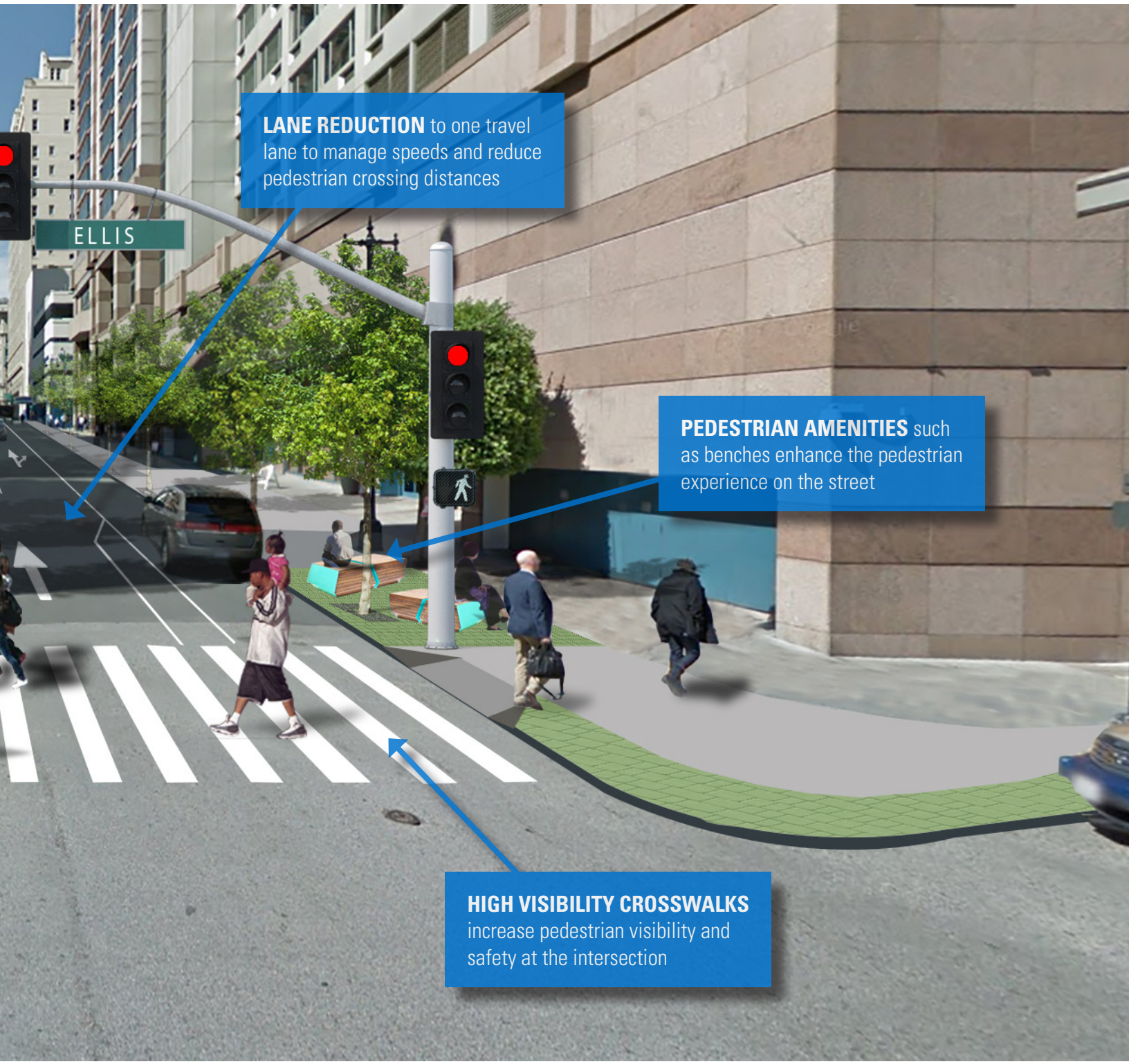

Accessible Loading Zone

TYPICAL TREATMENTS

INTERSECTION IMPROVEMENTS

At intersections along the corridor, recommended improvements seek to improve transportation safety for all road users. For example, people walking will have shorter crosswalks and more time to cross, while drivers will have dedicated turn signals separate from pedestrians. Key intersection improvements are highlighted below.



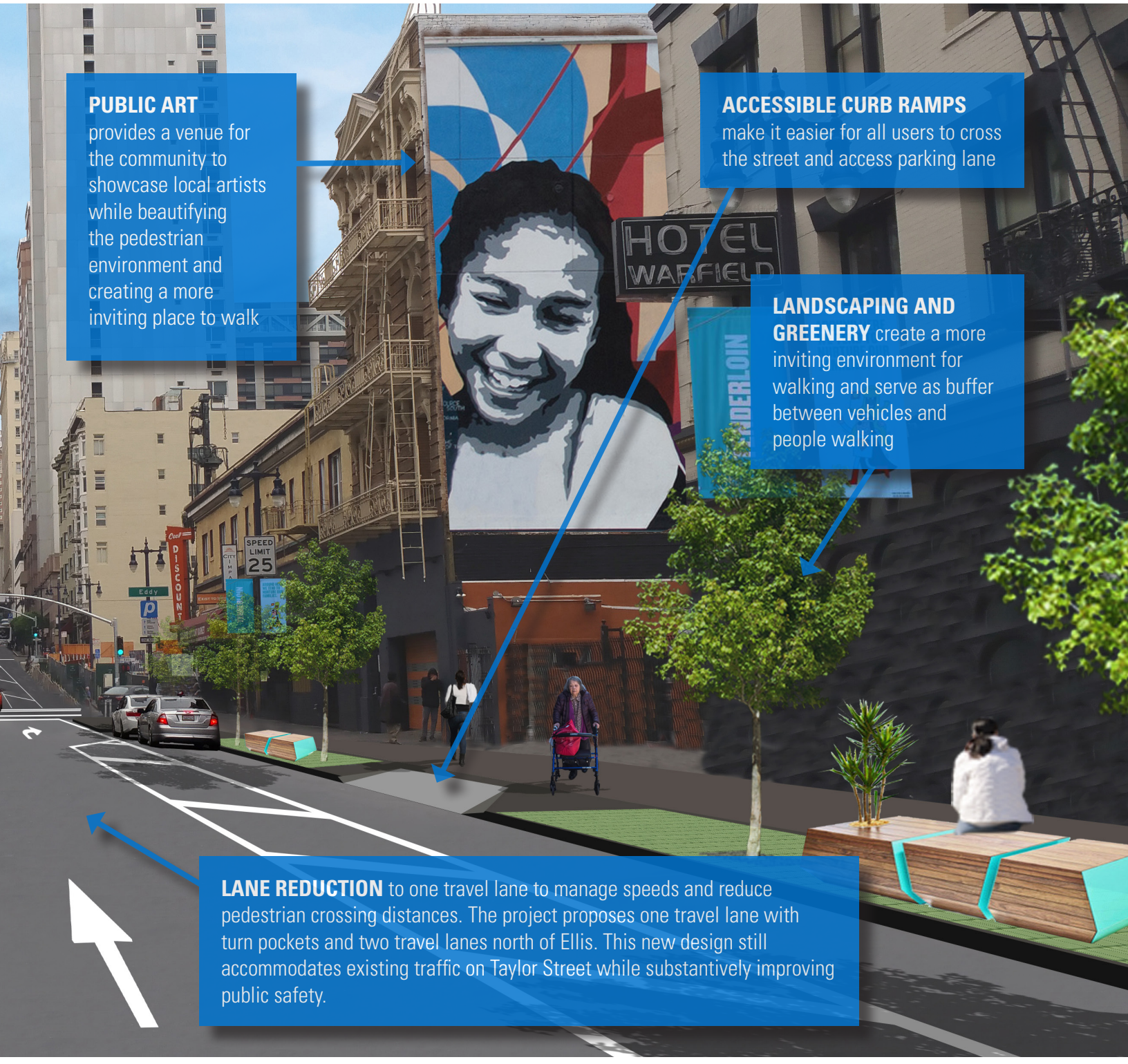

LANE REDUCTION to one travel lane to manage speeds and reduce pedestrian crossing distances
ELLIS
PEDESTRIAN AMENITIES such as benches enhance the pedestrian experience on the street
HIGH VISIBILITY CROSSWALKS increase pedestrian visibility and safety at the intersection

TYPICAL TREATMENTS

MID-BLOCK IMPROVEMENTS BETWEEN TURK AND ELLIS STREETS

This section presents the design vision for Taylor Street between between Turk and Ellis Streets, where sidewalk would be widened, which seeks to improve transportation safety and livability for all users of the corridor. Widening the sidewalk, and in turn reducing the number of travel lanes, provides critical roadway safety improvements with minimal impacts to traffic

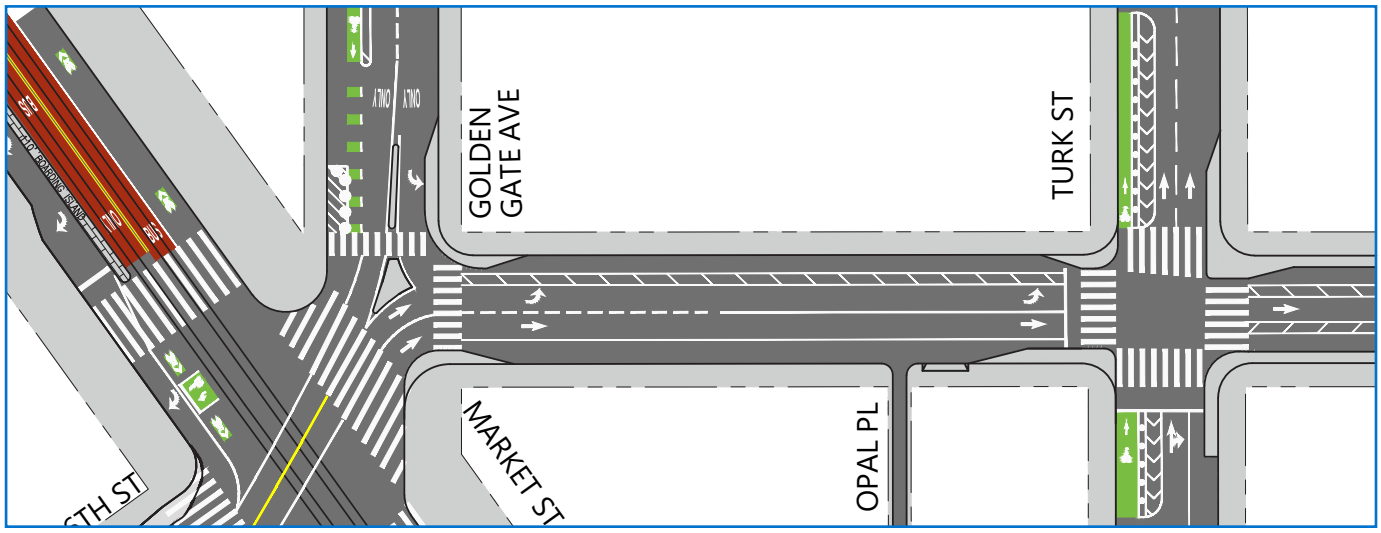
congestion during most of the day. Wider sidewalks will create more public space for walking safely, shorter crosswalks, landscaping, art, and neighborhood amenities. Key mid-block improvements are highlighted below.



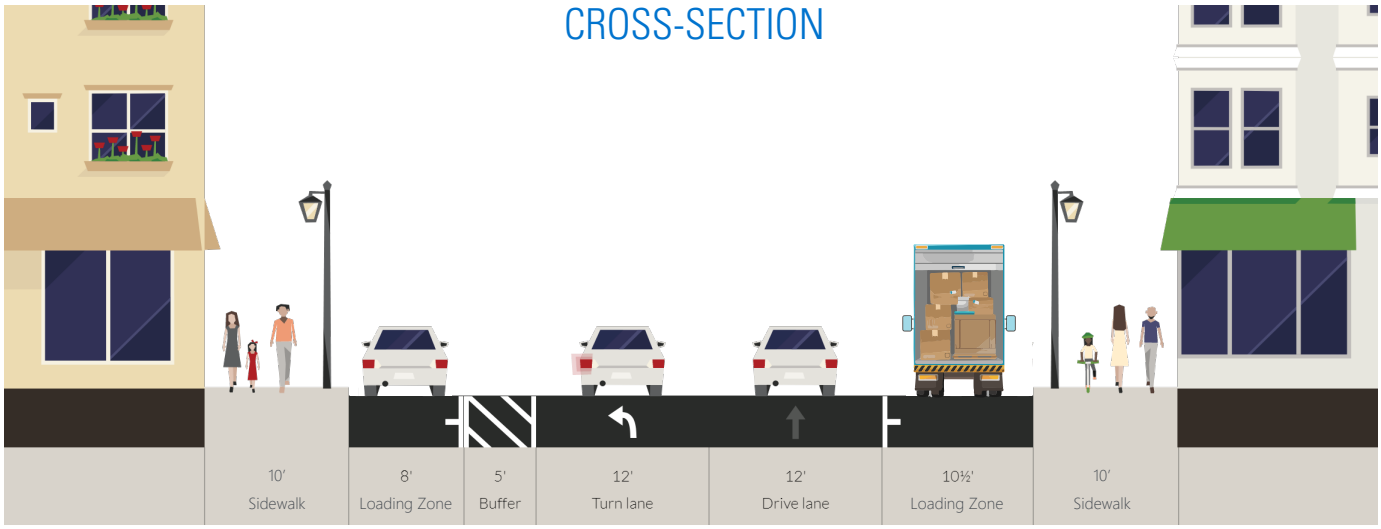
BLOCK-BY-BLOCK IMPROVEMENTS

BETWEEN MARKET AND TURK STREETS

The unit block is the southern extent of the project and extends between Market and Turk Streets. Golden Gate Theater and the Warfield have important commercial and passenger loading needs, which drive the design of this block. Coordination with the proposed 6th Street and Better Market Street projects is also important on this segment. The design allows for flexible passenger and commercial loading on both sides of Taylor Street to support those two event venues.



CROSS-SECTION



MAJOR IMPROVEMENTS

SAFETY

- Bulb-outs
- Lane Reduction

CURB MANAGEMENT

- Theater Commmercial Loading
- Theater and General Passenger Loading
- ADA Accessible Loading

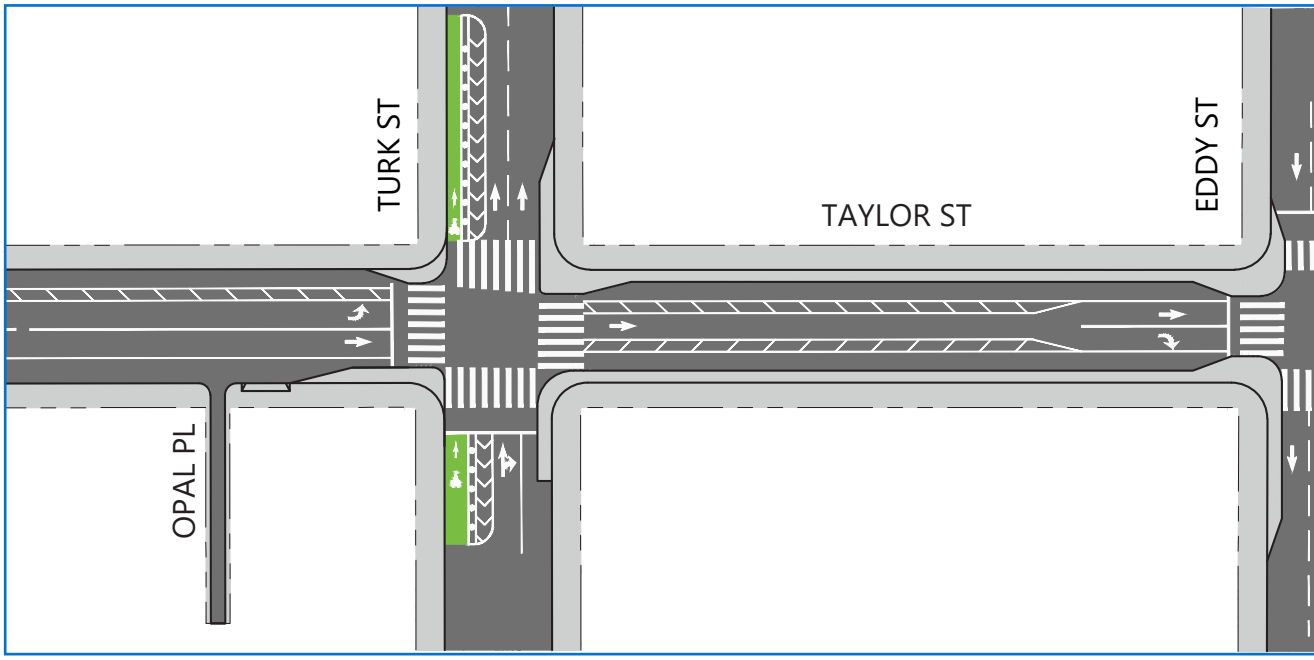
KEY STAKEHOLDERS

- Theaters

BLOCK-BY-BLOCK IMPROVEMENTS

BETWEEN MARKET AND TURK STREETS

Between Turk and Ellis Streets, the project proposes wider sidewalks and more passenger and commercial loading spaces, by reducing the number of travel lanes. This new design still accommodates existing traffic on Taylor Street while substantively improving public safety. Wider sidewalks will create more public space for walking safely and comfortably, landscaping, art,



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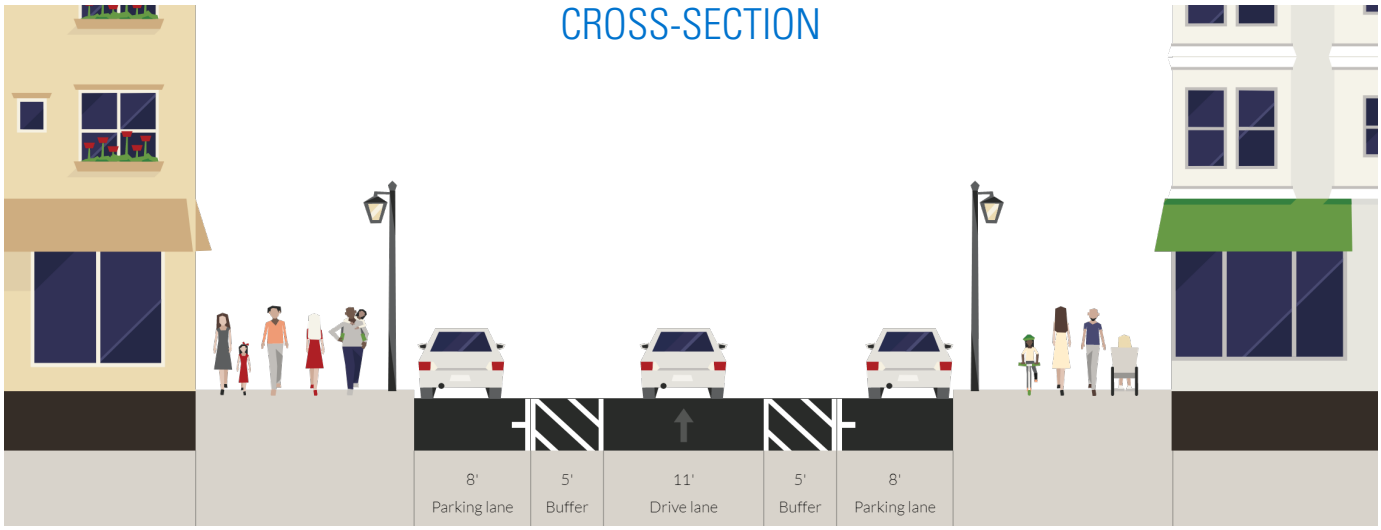
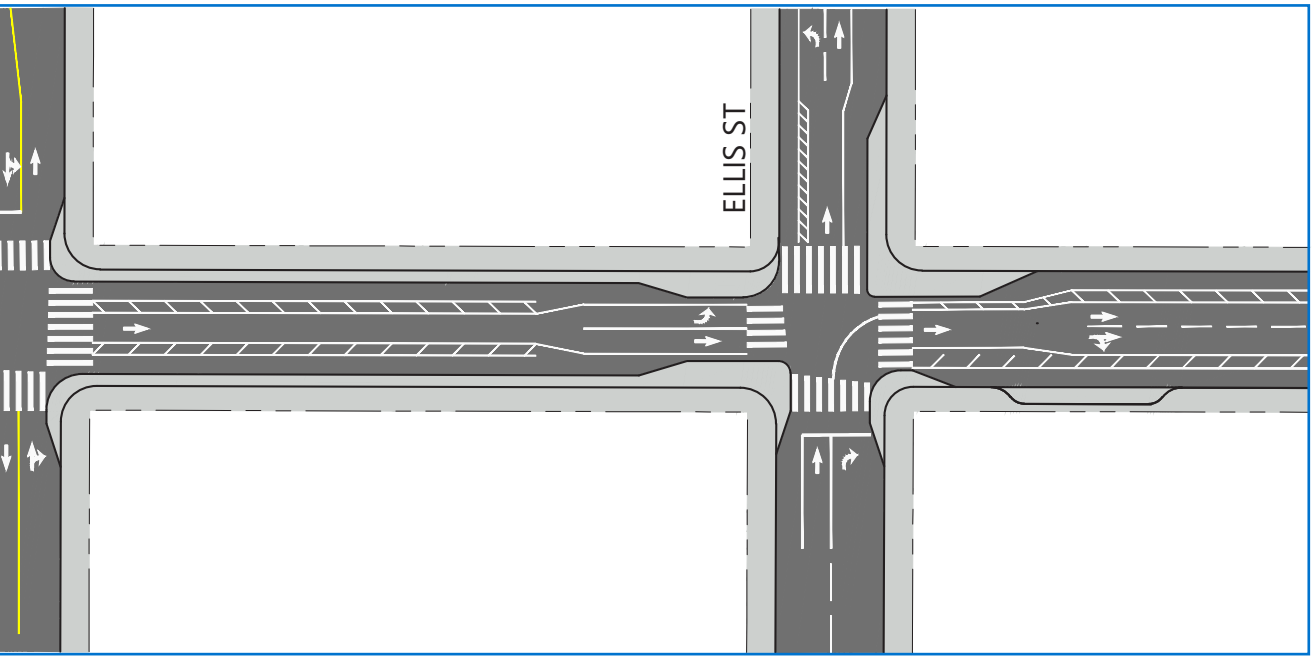


and neighborhood amenities. Expanded loading zones are critical for supporting residents and businesses on this segment, which include SROs, social service organizations, hotels, and event venues. Striped buffers between the curbside loading/ parking space and the travel lane provide flexible spaces for passenger and commercial loading on both sides of the street.



MAJOR IMPROVEMENTS

SAFETY

- Lane Reduction
- Widened Sidewalks
- Protected Left Turn
- Bulb-outs
- Transit Bulb on Side Street

CURB MANAGEMENT

- Theater and General Commmercial Loading
- Passenger Loading
- ADA Accessible Loading

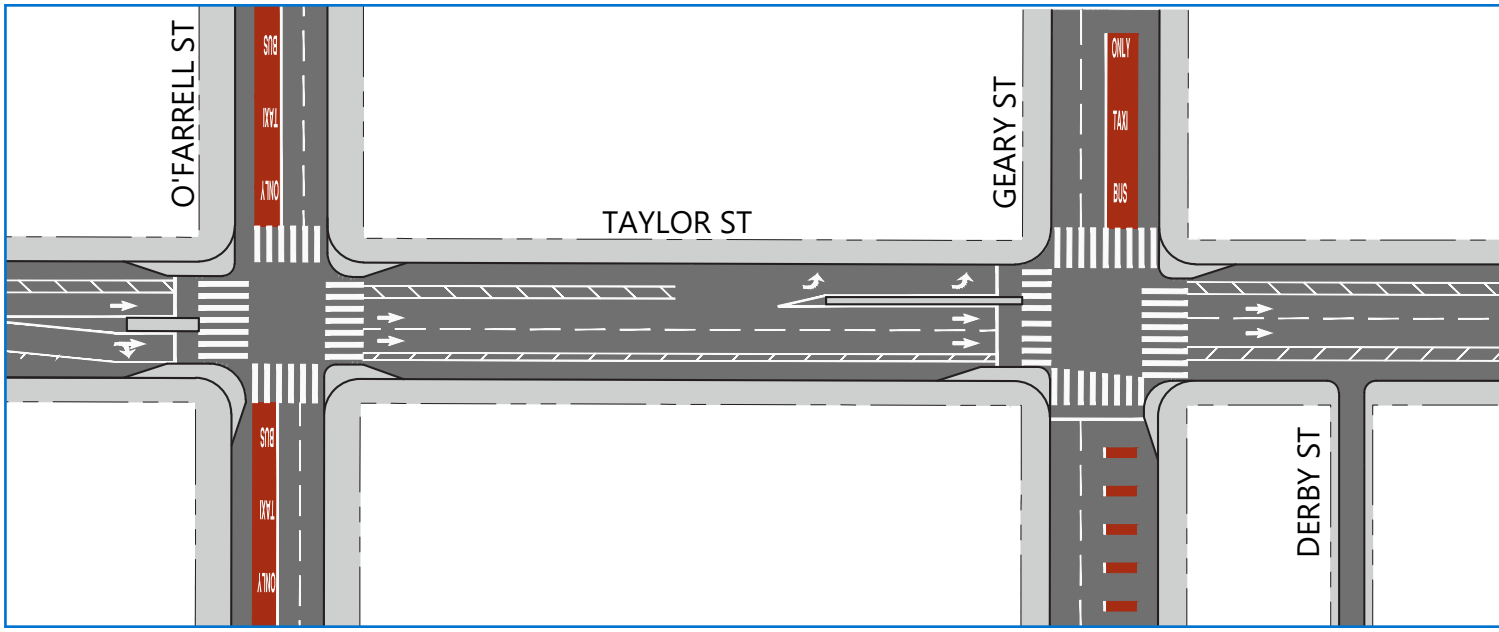
KEY STAKEHOLDERS

- SROs/Residential Buildings
- Theater
- Neighborhood Retail
- Hotels

BLOCK-BY-BLOCK IMPROVEMENTS

BETWEEN O'FARRELL AND SUTTER STREETS

North of Ellis Street the project proposes expanding Taylor Street to two travel lanes, and maintains the same curbside management scheme that reflects the uses of each block. At intersections, bulb-outs and vehicle turn pockets with protected left-turns lanes will improve pedestrian safety as well as safety for all people using Taylor Street.



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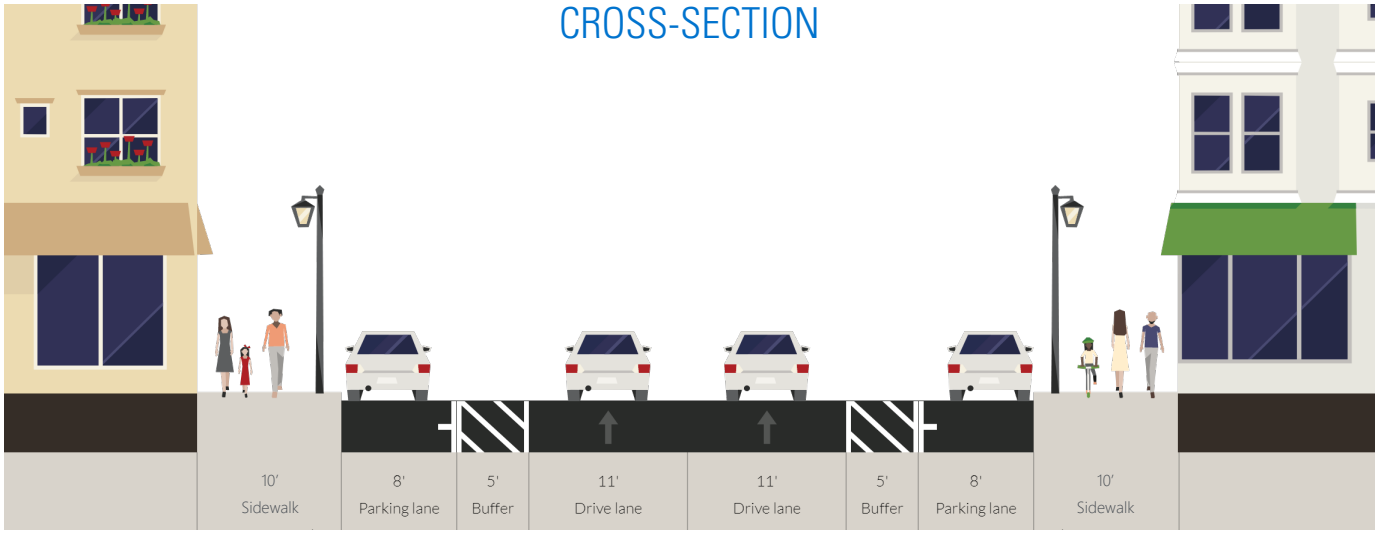
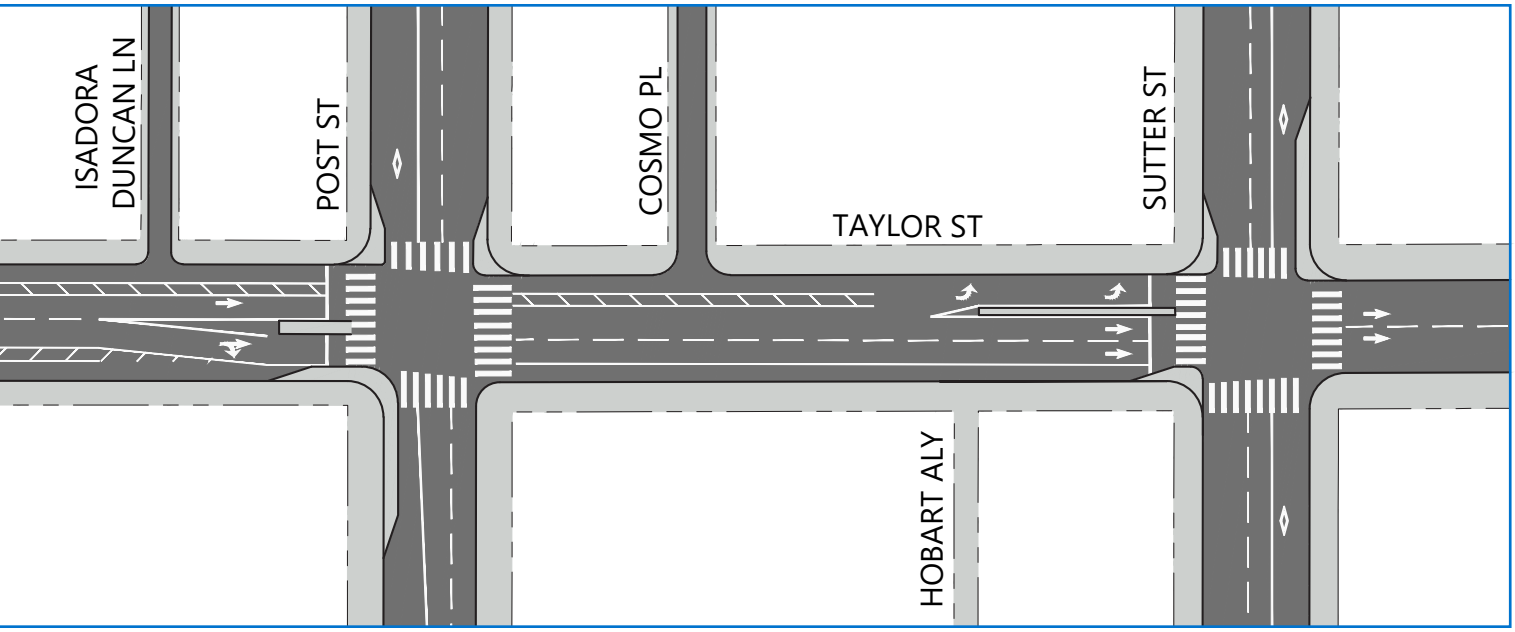




MAJOR IMPROVEMENTS

SAFETY

- Lane Reduction
- Protected Left Turn with Turn Pockets
- Bulb-outs
- Transit Bulb on Side Streets
- Pedestrian Refuge

CURB MANAGEMENT

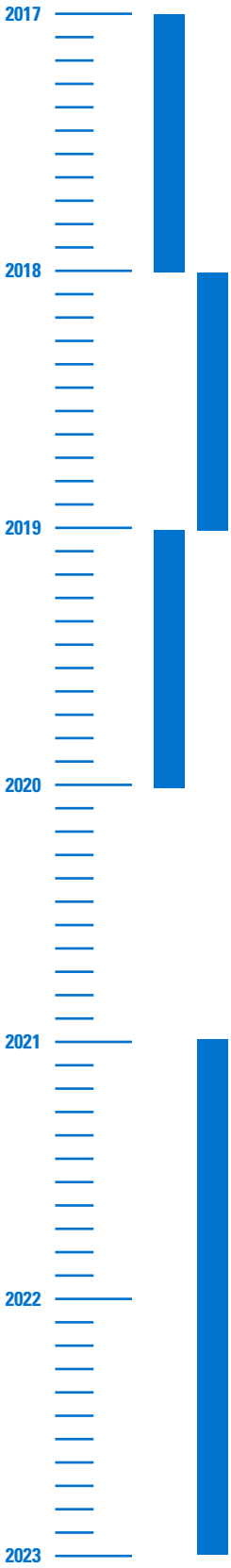
- Hotel and Passenger Loading
- ADA Accessible Loading
- Tour Bus and General Passenger Loading

KEY STAKEHOLDERS

- SROs/Residential Buildings
- Hotels
- Bars & Restaurants

CHAPTER 5
IMPLEMENTATION

IMPLEMENTATION SCHEDULE



TRANSPORTATION PLANNING: 2017-2018

- Led by MTA, DPH, Public Works, F&P, TSP, WalkSF, Al Williams, and Hood
- Focused on intersection and roadway design
- Analysis of existing transportation conditions
- Intensive outreach and community empowerment
- Development of transportation design options (remixes)
- Selection of preferred block-by-block transportation design
- Legislation of preferred transportation design

STREETSCAPE PLANNING: 2018-2019

- Led by MTA and Public Works
- Focused on streetscape (landscaping, art, cultural identity) and engineering details (design feasibility and underground utilities)
- Analysis of existing streetscape conditions
- Completion of civil engineering survey of Taylor Street
- Intensive outreach and community empowerment
- Development of streetscape design options
- Selection of preferred block-by-block streetscape design
- Finalization of overall corridor design

DETAILED DESIGN: 2019-2020

- Led by MTA and Public Works
- Engineering work for all corridor improvements

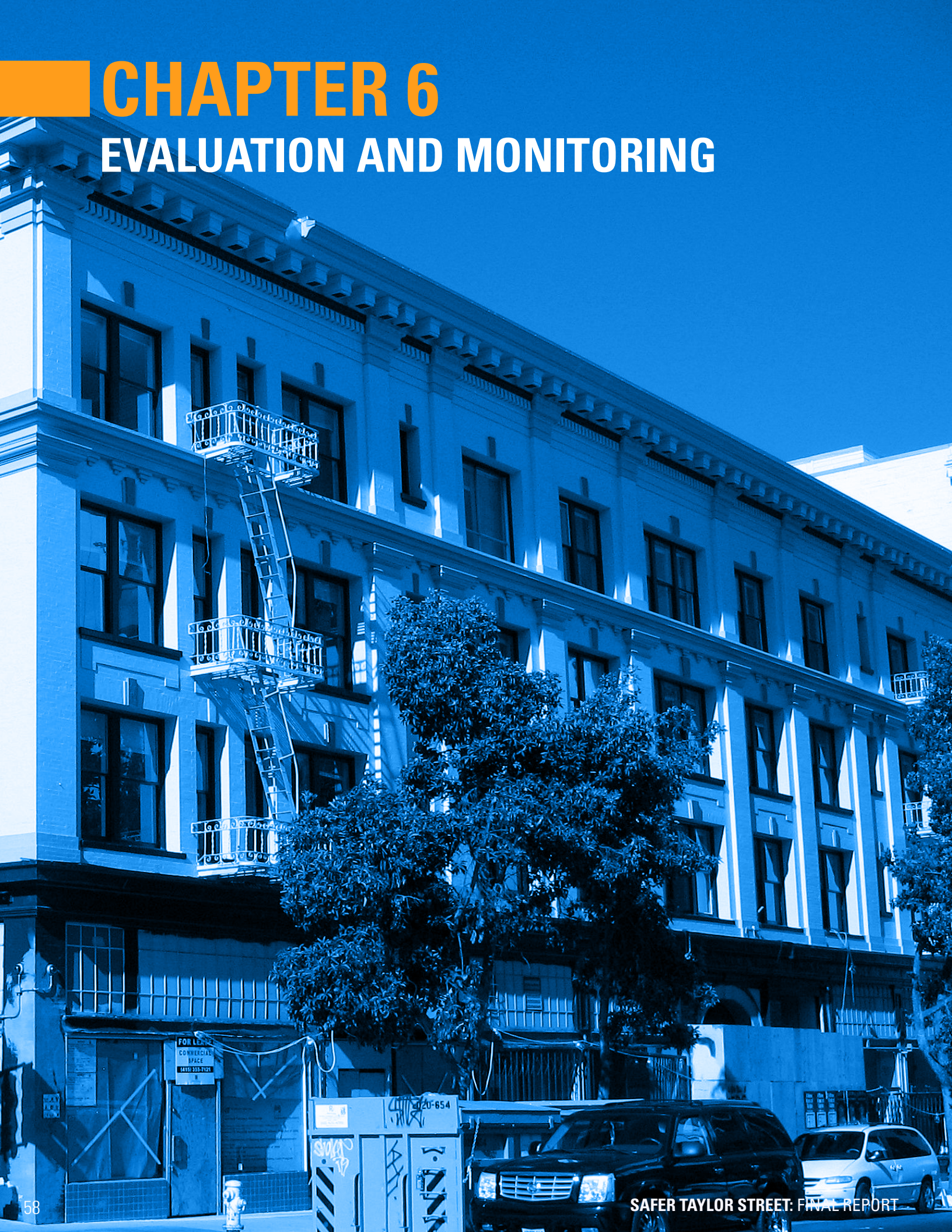
CONSTRUCTION: 2021-2023

- Led by MTA and Public Works
- Construction of corridor improvements with special attention to coordination with other projects and minimizing negative impacts to Tenderloin community

FUNDING

The project is fully funded through construction using Caltrans and SFCTA Prop K, Prop B funds. Public Works will develop detailed cost estimates in the Streetscape Planning phase and the project team will determine the best allocation of funds in collaboration with the community.

CHAPTER 6
EVALUATION AND MONITORING

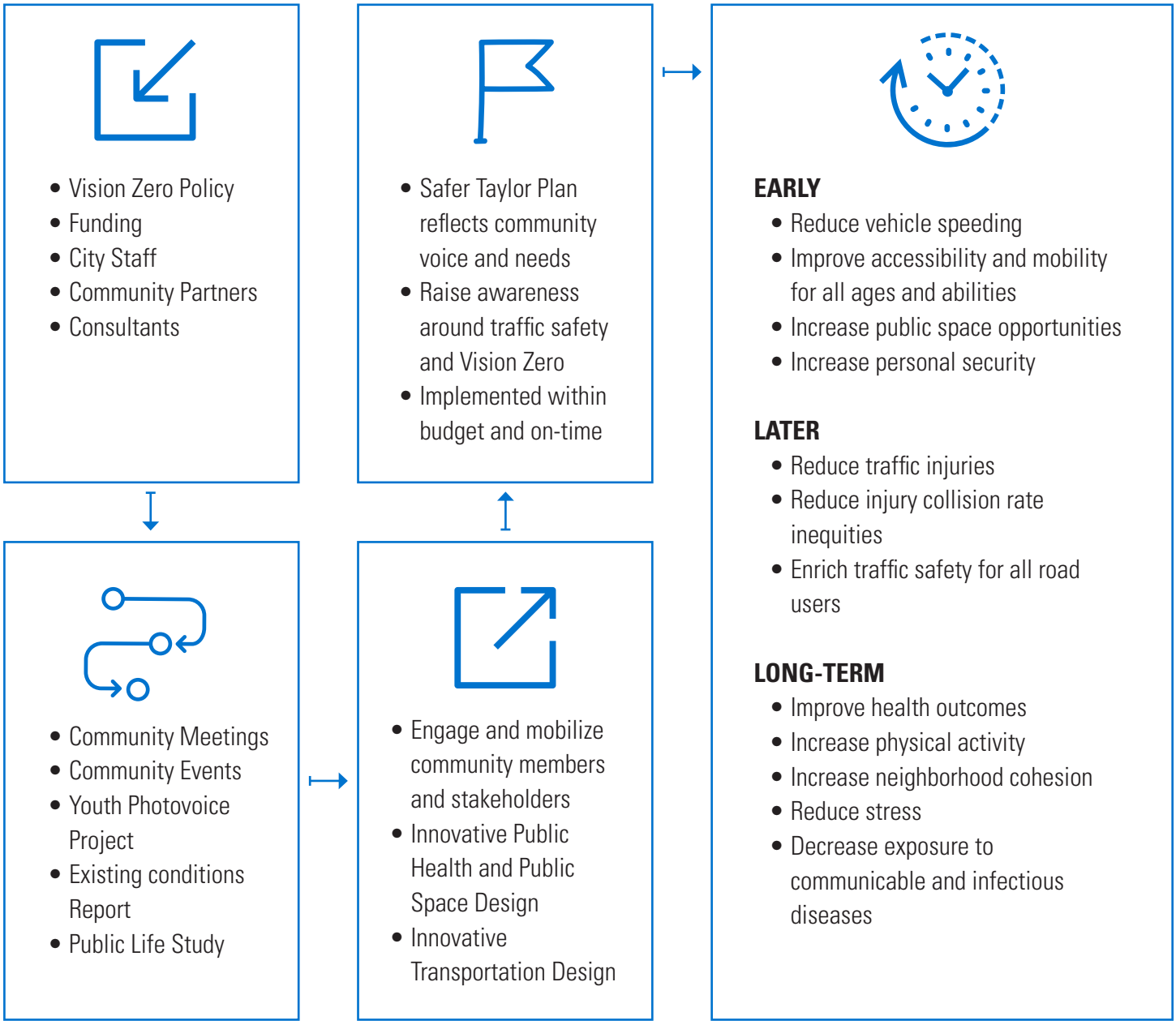


EVALUATION AND MONITORING PLAN

Taylor Street is a Vision Zero high injury corridor and thus prioritized for traffic safety improvements under San Francisco's Vision Zero initiative, the city's commitment to eliminating traffic deaths in San Francisco. To help evaluate progress towards this goal, the San Francisco Department of Public Health (SFDPH), in coordination with the San Francisco Municipal Transportation Agency (SFMTA), will be tracking progress and measuring project performance of the Safer Taylor Street capital project led by SFMTA.

SAFER TAYLOR LOGIC MODEL

SFDPH developed the logic model below to depict the relationship between Safer Taylor Street project activities and its intended outcomes. The logic model illustrates the pathways through which the Safer Taylor Street project is intended to improve health outcomes and sets the focus of the evaluation.



PROCESS EVALUATION FRAMEWORK

The Safer Taylor Street Evaluation and Monitoring Plan will focus on two types of evaluation: project and process. Project evaluation measures how the Safer Taylor Street activities impact traffic safety, public health and public space, and transportation design, as detailed in Table 1: Project Evaluation Framework. Data will be collected pre-project (prior to construction) and post-project (after construction is completed).

Goal	Objectives	Performance Measure	Data Collection Tool	Agency Lead	Data Collection Time Periods
TRAFFIC SAFETY	Reduce traffic injuries involving people who walk, bike and drive	Number of injuries by severity, user type, volume	Crossroads Collision Database	DPH	All reported collisions
		Number of near-misses between pedestrians-auto and bicyclists-auto	Video/Manual Observation	MTA	Weekday 4-6PM
		Conflicts between pedestrians/bicyclists and vehicles (type and location of conflicts, such as near misses)	Video/Manual Observation	MTA	Weekday 4-6PM
		Percentage of vehicles yielding to pedestrians and bicyclists	Video/Manual Observation	MTA	Weekday 4-6PM
	Reduce injury collision rate inequities	Injury rate inequities (compared to city) by mode, and for severe and fatal, particularly for youth and seniors	Crossroads Collision Database	DPH	All reported collisions 2011-2016, ACS 2011-2016
	Proactively manage and reduce vehicle speeds	85th percentile speed	Speed Survey	MTA	Off peak weekday
PUBLIC HEALTH AND PUBLIC SPACE	Increase public space opportunities	Sidewalk widening	PEQI	DPH	Weekday AM
	Provide ample and programmable public space with great public amenities	TBD - Need to work with city agencies, businesses, and residents to ensure sustainability	TBD	MTA	
	Increase personal security	Number and type of treatments (lighting, daylighting, parking removal)	PEQI	DPH	Weekday AM
		Crime rate	SF Police Department	DPH	All reported crimes
		Illegal graffiti	311	DPH	All reported illegal graffiti
		Presence of adequate lighting for pedestrians and bicyclists	PEQI	DPH	Nighttime
		Perceived safety	Intercept Surveys	MTA	Weekday 4-6PM, Weekend 12-2PM
TRANSPORTATION DESIGN	Allocate space more effectively for people who walk, bike, drive, load and use mobile community services	Walk/bike/drive volumes and mode split	Video/Manual Observation	MTA	Weekday PM
		Loading zone demand and compliance	Video/Manual Observation	MTA	Weekday PM
	Improve pedestrian and bike access and comfort	Presence of pedestrian and bike facilities	PEQI/BEQI/Bike Network Dataset	DPH	Weekday AM
	Improve accessibility and mobility for all ages and abilities	Accessible infrastructure (ramps, crosswalks, sidewalk conditions, crossing times, accessible parking spaces)	PEQI	DPH	Weekday AM
	Provide link in the All Ages and Abilities Bike Network	Dedicated bike facility	BEQI/Bike Network Dataset	DPH	Weekday AM
	Meet the Better Streets Plan Guidelines and Tenderloin-Little Saigon Plan	Y/N		MTA	

PROCESS EVALUATION FRAMEWORK

Process evaluation measures how Safer Taylor Street activities impact community voice and needs, as well as steps taken towards implementation, detailed in Table 2: Process Evaluation Framework. Historically, evaluation for traffic safety projects focused solely on project evaluation. For Safer Taylor Street, SFMTA worked extensively with community-based organizations, residents and business owners by using innovative means to engage with diverse stakeholders to better understand and address the community needs and wants in the project design.

Goal	Objectives	Performance Measure	Data Source
COMMUNITY VOICE AND NEEDS	Level of participation by community stakeholders and CBOs	Number of community stakeholders and CBOs involved in planning process	Record Keeping / Sign In Sheets
		Number of community outreach events held in collaboration with CBOs	Record Keeping / Sign In Sheets
		Participants of the Community Advisory Group (breakdown of business owners, residents, community organizations)	Record Keeping / Sign In Sheets
		Number of tasks led by community stakeholders and CBOs	Project Charter
	Diversity of outreach efforts	Number of meeting types held (design charrette, youth Photovoice, etc)	Record Keeping / Sign In Sheets
		Number of attendees at each meeting and their demographics when available (age, low-income, ethnicity)	Record Keeping / Sign In Sheets
		Number of outreach events with translation services available by language	Record Keeping / Sign In Sheets
	Community satisfaction with engagement	Responses from surveys administered at community events	• First Open House Survey • Tactical Urbanism Survey • Third Open House Survey (TBD) • Community Advisory Group Survey (TBD) • PhotoVoice Survey (TBD)
	Public/Private Partnerships	Proportion of project area maintained by public versus private entity	MOU Documents
	Awareness of traffic safety and Vision Zero		Third Open House survey (TBD)
IMPLEMENTATION	Planned improvements versus constructed improvements	Treatments (bike and pedestrian facilities, sidewalk widening, road diet, etc.)	• Legislation • Work Orders • Constructed Project
	Project Delay Considerations	Number of months	MTA and Public Works schedule estimation
	Capital Cost Considerations (Internal)	Final cost compared to projected cost	MTA and Public Works cost estimation
	Maintenance Cost Considerations (Internal)	Existence of public-private funding plans for all features requiring maintenance	MTA and Public Works cost estimation

APPENDICES

INITIAL COLLISION ANALYSIS

INITIAL COLLISION ANALYSIS

COLLISION DATA ON PEOPLE WALKING

Pedestrians are disproportionately involved in collisions on Taylor Street. Over 50 percent of injury collisions along the corridor involved pedestrians, although pedestrians account for 40 percent of people at intersections. Over 60 percent of pedestrian-auto collisions occurred when a turning vehicle failed to yield to a pedestrian.

63% TURNING DRIVER FAILED TO YIELD TO PEDESTRIAN

Failure to Yield: Collisions that occur when a motorist fails to yield to a pedestrian.

23% PEDESTRIAN VIOLATION

Pedestrian Crossing Against a Signal: Collisions that occur when a pedestrian crossed at a traffic signal with a red light or "Don't Walk" signal.

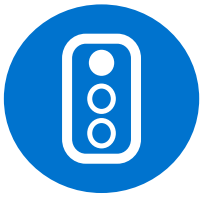
Pedestrian Outside of Crosswalk: Collisions that occur when a pedestrian crossed outside of a legal crosswalk, marked or unmarked.

Unpredictable Pedestrian Behavior: Collisions that occur when a pedestrian entered a crosswalk too quickly for motorists to yield the right of way.

4% UNSAFE SPEED

Unsafe Speed: Collisions that occur when a motorist traveling at an unsafe speed collides with a pedestrian.

5% RED LIGHT RUNNING



Red Light Running: Collisions that occur when a motorist running through a red light collides with a pedestrian.

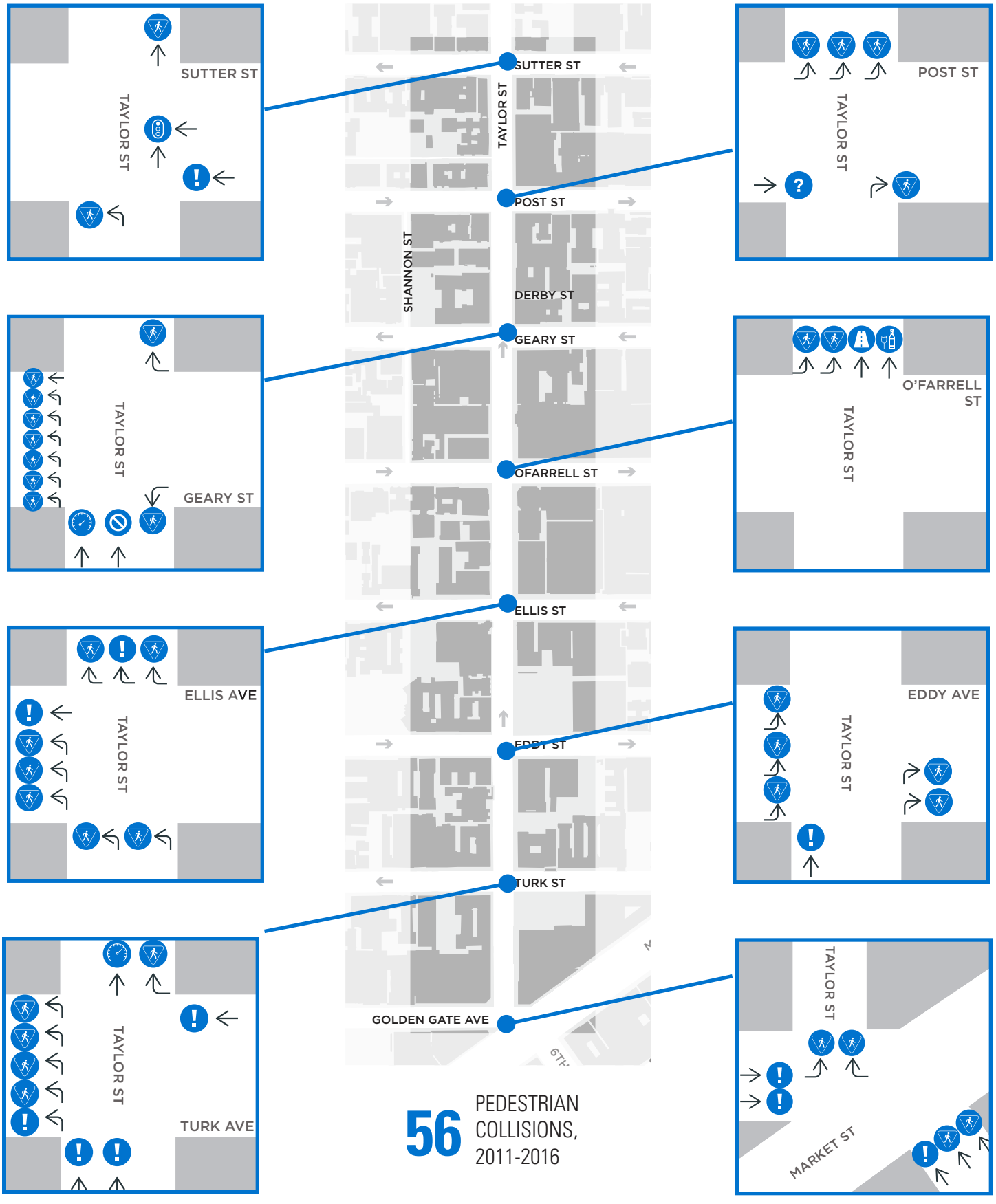
2% ALCOHOL USE

Alcohol Use: Collisions where either the pedestrian or motorist was under the influence of drugs or alcohol.

3% OTHER

INITIAL COLLISION ANALYSIS

COLLISION DATA ON PEOPLE WALKING, 2011-2016



56 PEDESTRIAN COLLISIONS, 2011-2016

INITIAL COLLISION ANALYSIS

COLLISION DATA ON PEOPLE BIKING

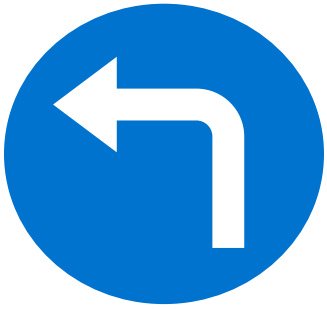
Of all injury collisions along the corridor, eight percent involved cyclists. Cyclist behavior accounted for two thirds of the bicycle-auto collisions. Over half of the bicycle collisions occurred at the Taylor Street/Market Street/6th Street intersection.

60% BICYCLISTS VIOLATED THE RULES OF THE ROAD

Bike Violation: Collisions that occur between a cyclist and vehicle as a result of cyclist behavior.

20%

DRIVER MAKING AN IMPROPER TURN



Driver Making an Improper Turn: Collisions that occur between when a motorist makes an improper turn at an intersection.

13%

DRIVER SIDESWIPING A BICYCLIST

Driver Sideswiping a Bicyclist: Collisions that occur when a driver strikes a cyclist from the side.

7%

WRONG WAY BIKING

Wrong Way Biking: Collisions that occur when a cyclist travels the opposite direction of vehicular traffic.

INITIAL COLLISION ANALYSIS

COLLISION DATA ON PEOPLE BIKING, 2011-2016

15 BICYCLE COLLISIONS, 2011-2016

INITIAL COLLISION ANALYSIS

COLLISION DATA ON PEOPLE DRIVING

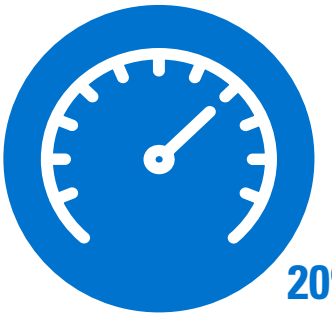
Approximately 32% of all injury collisions on Taylor Street occurred between automobiles. Over half of auto collisions were caused by risky driver behaviors such as red light running and traveling at unsafe speeds.

57%

AUTO COLLISIONS CAUSED BY RISKY DRIVER BEHAVIOR

37%

Red Light Running: Collisions that occur when a motorist runs a red light.



20%

Unsafe Speed: Collisions that occur when a motorist traveling at an unsafe speed

Right of Way: Collisions that occur when a motorist does not yield right-of-way to another vehicle. **5%**

Improper Turn: Collisions that occur between when motorist makes an improper turn or u-turn at an intersection. **2%**

Improper Pass: Collisions that occur when a motorist attempts to overtake another vehicle unsafely **2%**

Pedestrian Violation: Collisions that occur due to unpredictable pedestrian behavior. **2%**

Sideswipe: Collisions that occur when the sides of two vehicles traveling in the same direction come in contact with each other **2%**

Following Too Closely: Collisions that occur when a motorist is following another vehicle too closely. **2%**

Wrong Way: Collisions that occur when a motorist traveling the opposite direction of traffic collides with another vehicle. **2%**

Unsafe Start: Collisions that occur when a parked or stopped motorist starts driving when it is unsafe to do so. **2%**

Alcohol Use: Collisions where either the pedestrian or motorist was under the influence of drugs or alcohol. **2%**

Unknown/Not Stated: Cause of collision not reported. **10%**

INITIAL COLLISION ANALYSIS

COLLISION DATA ON PEOPLE DRIVING, 2011-2016

41 AUTO COLLISIONS, 2011-2016

INTERSECTION SAFETY VIDEO ANALYSIS

INTERSECTION SAFETY VIDEO ANALYSIS

OVERVIEW

WHAT IS AN INTERSECTION SAFETY VIDEO ANALYSIS?

An intersection safety video analysis is an assessment of common travel behaviors and interactions between pedestrians, bicyclists, and motorists. An intersection safety video analysis utilizes video data to understand trends and potential for conflicts between different users on the street. Evaluation questions focused on identifying key behaviors and conflicts are developed to guide the collection and summarization of video data.

WHY CONDUCT A INTERSECTION SAFETY VIDEO ANALYSIS?

An intersection safety video analysis is useful in supplementing collision data. Video data was analyzed to understand potential safety conflicts between pedestrians, motorists, and bicyclists at intersections on a more nuanced level. The focus of the observations is primarily on pedestrian-auto interactions to understand potential safety issues related to the most vulnerable roadway user. Bicyclist-auto interactions are also examined.

HOW WAS THE ANALYSIS COMPLETED?

Video data was collected to between 7:00-9:00AM and 4:00-7:00PM on July 19, 2017 at the intersections of (1) Taylor Street and Turk Street (Taylor/Turk) and (2) Taylor Street and Eddy Street (Taylor/Eddy). School are not located on the corridor, and this is not a primary school route, so summer data was determined acceptable for typical behavior observation.

INTERSECTION SAFETY VIDEO ANALYSIS

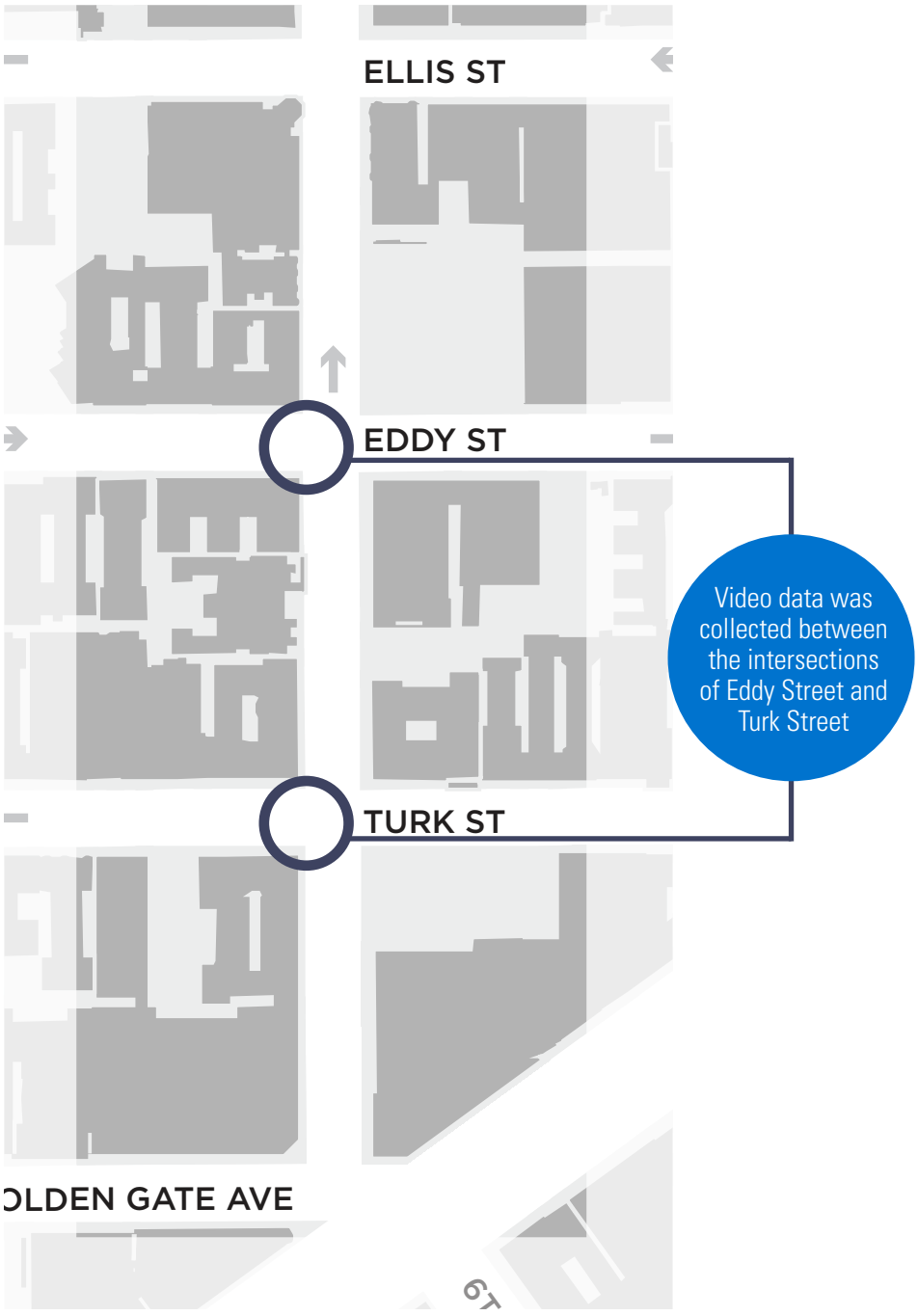
OVERVIEW

Evaluation questions were primarily based on the following:

Pedestrian Behaviors

Driver Behaviors

Pedestrian - Auto Interactions



INTERSECTION SAFETY VIDEO ANALYSIS

KEY TAKEAWAYS

Drivers yielded to pedestrians around 93% of the time at both intersections.

1.

The west crosswalk at Taylor/Turk had the highest percentage of pedestrians crossing against the signal.

2.

Many pedestrians were assertive as they waited to cross the street, often stepping off the curb.

3.

INTERSECTION SAFETY VIDEO ANALYSIS

KEY TAKEAWAYS (CONTINUED)

1. Seven percent of drivers did not yield to pedestrians crossing, however four percent of these interactions occurred with a pedestrian crossing against the light. Three percent of drivers observed did not yield to pedestrians crossing during a pedestrian walk phase. In these cases, pedestrians were observed slowing down or stopping for oncoming vehicles to avoid collision. This occurred 10 times during the observed hour. No "near misses" were observed.

2. About one-fifth of pedestrians crossing the street without a walk signal were using the west crosswalk at the Taylor Street/Turk Street intersection. Higher volumes of pedestrians crossing against the signal may be due to lower vehicle counts across that crosswalk compared to the east crosswalk at Turk/Eddy.

3. Together, approximately 18% of pedestrians waited in the street off the curb or crossed against the signal. Pedestrians waited in the parking lane or travel lanes around 9% of the time, and crossed against the signal around 12% of the time.

Secondary Takeaways

About 5% of pedestrians were observed with a stroller, shopping cart, or mobility impairment. 26% of pedestrians observed with limited mobility did not have enough time to finish crossing during a walk phase.

About 12% of pedestrians crossed against the signal overall.

CASE STUDIES

CASE STUDIES

LEFT-TURN TRAFFIC CALMING PILOT - NEW YORK CITY, NEW YORK

What were the project goals/needs?
The left turn traffic calming citywide pilot program was launched by the New York City Department of Transportation (DOT) in 2016 to help address failure to yield pedestrian collisions by left turning vehicles. The project, which was established in support of the City's Vision Zero initiative, focuses on reducing left turn speeds and enforcing safe driver turning behavior.

What did they do?

DOT developed paint and plastic engineering treatments to slow left-turning speeds on different roadway configurations. The three treatments are:

- Basic hardened centerline –a raised mini-median for use when at least one of the streets is two-way
- Slow turn wedge –a curb extension for use when both streets are one-way
- Complete hardened centerline – a combination of the basic hardened centerline and slow-turn wedge treatment for use when at least one of the streets is two-way.

The hardened centerline treatments effectively provide a raised mini-median, which makes it difficult for cars to "cut the corner" and cross the centerline to make a faster turn. This forces vehicles to make turns with a tighter radius and at a lower speed. The hardened median consists of six pieces of rubber curb and plastic posts, totaling about 30 feet in length, installed on the centerline starting from the crosswalk. The slow turn wedge treatment consists of a striped corner bulb with diagonal cross-hatching. Rubber curb is used to outline the curb radius. Four plastic posts are used, two on the rubber median, and two defining the bottom edge of the "wedge".

How did they implement it?

The New York DOT used crash injury numbers, lane configuration, and consideration of heavy truck turning movements to select 107 locations across the city for the pilot. The program is managed and implemented through the Office of Research, Implementation & Safety. The program is anticipated to expand in 2017.

Was an evaluation study completed?

Results showed that vehicles were making safer turns, as measured through speed and driver positioning during the turn. Speed decreased: the median left turn speeds decreased by 24.4%; the average left turn speed decreased by 17.2%; 85th percentile left turn speeds decreased by 20.8%; and maximum left turn speeds decreased by 18%. The rate of crossing the double yellow line while turning dropped by 97.6%. The New York DOT will further evaluate the program to determine if the treatment reduced traffic injuries once a sufficient amount of before/after collision data becomes available.

CASE STUDIES

BELL STREET PARK, SHARED USE STREET - SEATTLE, WASHINGTON

What were the project goals/needs?
Bell Street Park is a 1.33-acre (0.54 ha) park, created in 2014 in Seattle's Belltown neighborhood. Situated in a neighborhood described as a former "hot-spot for low-level crime, drug-dealing and civil disorder". The neighborhood was lacking of open space and struggled to develop an active, inviting street life.

Source: NACTO

What did they do?

Bell Street was redeveloped as a mixed-use pedestrian/vehicular traffic area without curbs. The design transformed Bell Street from a two lane, one-way road into a raised, shared street with a single travel lane for pedestrians, buses, bicyclists, and autos between 1st and 5th Avenues.

How did they implement it?

The use of texture and color cues slow traffic while providing visual eddies to delineate meandering activity zones for seating, planters, and art installations. Signage is included at shared street entrance points to alert road users that they are entering the Bell Street Park pedestrian priority zone. The roadway is 10 feet wide with four feet of flexible space for emergency vehicles and buses. The roadway utilizes chicanes to show vehicle speeds and provide intermittent parking and loading zones. The curb and roadway are level to prioritize pedestrian movement.

Was an evaluation study completed?

In the first few months after the project's implementation, vehicles had only dropped from 3,800 cars per day to 3,400. In October 2014, car traffic was restricted between 1st and 5th Avenues, requiring cars to turn off Bell Street at the first opportunity. Closing the Bell Street to vehicle traffic defined the park as a more people-oriented space, and improved transit operations on a critical bus corridor. Bus routes still serve the shared use street and continue to operate with 10–15 minute or better headways.

Bell Street, Before (top) and After (Bottom)

CASE STUDIES

"DON'T CUT CORNERS" LEFT TURN PEDESTRIAN & BICYCLIST CRASH STUDY - NEW YORK CITY, NEW YORK

What were the project goals/needs?
The left turn pedestrian and bicyclist crash study was launched by the New York City Department of Transportation (DOT) in 2016 to examine the high rate of pedestrians and bicyclists killed by left turning vehicles from 2010 to 2014. The study also evaluates the effectiveness of safety treatments installed to reduce collisions, such as left turn restrictions and left turn only signals.

What did they do?
Treatments, including left turn restrictions, left turn bays, protected bicycle lanes, left turn only signals, and leading pedestrian intervals, were installed at over 450 city intersections. The New York Department of Transportation (DOT) compared six years of crash data, three years before and after treatment, to evaluate their effectiveness. A detailed analysis of roadway and intersection characteristics was also conducted to identify how roadway design influences left-turn collisions.

Was an evaluation study completed?
DOT completed a thorough evaluation of crash data evaluating treatment effectiveness and roadway characteristics. DOT's analysis of roadway characteristics found that left turn collisions with cyclists are more likely where the vehicle was coming from the minor approach, the receiving street was 60' or wider, and the vehicle was traveling from a one-way to a two-way street. All of the treatments were found to reduce pedestrian and bicyclist injuries:

- Left turn restrictions yielded a 41% reduction
- Left Turn bays yielded a 15% reduction
- Protected bicycle lanes yielded a 15% reduction
- Left turn only signals yielded a 33% reduction
- LPI yielded a 14% reduction

Left turn restrictions and left turn only signals yielded the highest reductions of pedestrian and bicycle injury collisions

CASE STUDIES

LINDEN BOULEVARD: ADDRESSING LEFT-TURN CONFLICTS AND USING CONCRETE TO ENHANCE CROSSWALKS - NEW YORK CITY, NEW YORK

What were the project goals/needs?

The Linden Boulevard complete streets project in Brooklyn, New York consists of 2.4 miles of pedestrian safety improvements. Linden Boulevard has residential, light industrial, and commercial land uses lining it and sees heavy vehicle volumes at rush hours. This segment of Linden also has two Brooklyn priority intersections for Vision Zero improvements.

Source: NYDOT

Community engagement was also a component of the project. Two workshops were held to get feedback on the top issues on Linden Boulevard. An interactive webmap was also used. The issues identified primarily focused on pedestrian safety-related issues. The highest concern was the need to reduce the high auto speeds on the corridor. Permitted left-turns at existing signalized intersection created safety issues at signalized crosswalks. Additionally, there was not enough space to wait in medians and not enough time to cross the street.

How did they implement it?

The project addresses these issues through a variety of tools to improve pedestrian safety. At nine existing signals, protected left-turns were added to give left-turning vehicles their own signal phase, removing the conflicts between pedestrians and drivers. At two intersections with lower peak hour left-turn volumes (20-30 vehicles per hour), left-turn restrictions were implemented. At those locations, left-turn pockets were filled in with a widened concrete median with street trees. All crosswalks were restriped as high-visibility continental crosswalks to improve driver visibility of the crosswalk. Instead of relying on mostly painted curb extensions and refuges, the project proposed concrete improvements at eleven locations to provide shorter, safer pedestrian crossings. As the street has a parking lane, these were typically median refuges. Median channelization narrowed the width of the service road to discourage speeding. At large, complex intersections, painted safety zones with plastic posts with installed to shorten crossing distance and slow auto turns.

CASE STUDIES

32ND STREET SIDEWALK EXTENSION– NEW YORK CITY, NEW YORK

What were the project goals/needs?
Crossing the street at rush hour outside of Penn Station can be an enterprise fraught with peril. In the summer of 2015, the New York City made a temporary sidewalk extension on 32nd St., between 6th and 7th Ave. The new pedestrian areas relieved crowding on sidewalks near the rail station, where people on foot overflow into the street.

What did they do?
The trial project took the parking lane next to the north sidewalk to provide people more space to walk. The lane was painted with color , planters with flowering plants and 18 benches were also put in to act as buffer between pedestrian flow and traffic.

To replace the parking lane on the north side of the street with pedestrian space, the project also shuffled curbside uses, shifting an MTA bus layover and reducing the length of the street's loading zones from 680 feet to 180 feet.

Was an evaluation study completed?
It was reported that people pouring out of Penn Station loved the sidewalk extension on West 32nd Street between Sixth and Seventh avenues. It relieved crowding on a block with heavy foot traffic between Penn Station and the Herald Square subway and PATH station.

There's been a plan from Vornado to restore the wide sidewalk extension in 2017 and the new plan relocates an MTA bus stop to make more room for commercial deliveries

New pedestrian zones near Penn Station have given people more breathing room on some of the most crowded streets in the city.

CASE STUDIES

CYPRESS HILLS STREET: SAFETY CO-BENEFITS OF PROTECTED BICYCLE LANES– NEW YORK CITY, NEW YORK

What were the project goals/needs?
Cypress Hill Street in Queens, New York has one lane in each direction and has bicycle routes in some places and buffered bicycle lanes in others. Sidewalk conditions are narrow and, in some cases, sidewalks are missing. The average daily bicycle volume was 65.

Source: NYDOT

What did they do?

To improve safety, the bicycle routes and buffered bicycle lanes were upgraded to protected bicycle lanes with a striped buffer and plastic posts. An eight foot pedestrian walkway was also added along the narrow walkway to provide a comfortable and continuous walking environment. The walkway is situated directly adjacent to the northbound bicycle lane, both of which are located at the roadway grade and separated with a white stripe.

In addition to the protected bicycle lane, the project included targeted safety improvements for pedestrians and auto occupants. At 78th Avenue, AM peak period left-turn restrictions were expanded to the whole day to address risky left-turn and passing driver behavior. At Cooper Avenue, painted safety zones with plastic posts and landscape planters will widen the sidewalk realm and shorten crossing distances.

Was an evaluation study completed?

Protected bicycle lane evaluation data from 9th Avenue, 8th Avenue, Broadway, 1st Avenue, 2nd Avenue, and Columbus Avenue in New York indicate that total injuries reduced (cyclist, pedestrian, and driver) by 20 percent after installation. Much of this reduction in injuries results from safety co-benefits for drivers and pedestrians. Protected bicycle lanes contributed to a 25 percent reduction in auto occupant injuries, and a 22 percent reduction in pedestrian injuries. Cyclist injuries were reduced by two percent.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