



CITY OF
**PALO
ALTO**

Planning & Transportation Commission Staff Report

From: Office of Transportation
Lead Department: Office of Transportation

Meeting Date: March 27, 2024
Report #: 2402-2620

TITLE

Bicycle and Pedestrian Transportation Plan (BPTP) Update: Share and confirm the vision statement and goals, share and get feedback on the existing conditions technical analysis, and share and discuss upcoming engagement

RECOMMENDATION

Receive report, provide feedback on the project's draft vision statement, objectives, performance measures, and the existing conditions technical analysis.

EXECUTIVE SUMMARY

This report provides an overview on the effort to update the City's existing 2012 Bicycle and Pedestrian Transportation Plan (BPTP), including an overview of the feedback received during the introductory first phase of the project and the existing conditions analysis for biking, walking, and wheeling in Palo Alto. The Commission is being asked to review and provide feedback on the project's draft vision statement (Attachment O), objectives (Attachment P), and Performance Measures (Attachment Q) created from feedback received during the first phase of engagement.

The draft project vision statement (Attachment O) reads:

In Palo Alto, we envision a city where sustainable transportation thrives, embodying safety, efficiency, and enjoyment. Our streets will form a connected, cohesive network, supporting walking and cycling with tree-lined paths, efficient shortcuts, and secure bike parking. We commit to overcoming barriers, ensuring every part of our community is easily traversed on foot or by bike, fostering a connected region where sustainable transportation is a shared priority.

Palo Alto aspires to be a leader, with comprehensive programming encouraging everyone to embrace sustainable modes. We invest more in walking and biking infrastructure, ensuring equity and accessibility for all. Embracing the Safe System Approach, our city prioritizes safety and aims for a future where walking or biking for short trips is more convenient than driving,

shaping a city where every journey, no matter how small, contributes to a more sustainable and connected community.

The draft project objectives (Attachment P) outlined include:

- Safe and Inclusive
- Connected and Accessible
- Comfortable and Enjoyable
- Community-Driven
- Integrated and Collaborative

The draft project performance measures (Attachment Q) sort the 2012 BPTP Objectives and the Bike Friendly Community criteria to corresponding project objectives/themes, where available, to develop potential measures for the BPTP Update. The 2012 BPTP Objectives include:

- Greenhouse Gas Emission Reduction
- Walk/Bike Network Expansion
- Safe and Complete Streets
- Planning & Policy
- Education & Encouragement
- Community, Equity, and Advocacy

The analysis in this report includes a review of electric bicycles (e-bikes) and shared micromobility in Palo Alto, an inventory of bicycle parking in Downtown Palo Alto, a Citywide review of Bicycle Level of Traffic Stress (LTS), an assessment of out-of-direction travel required by major barriers, an analysis of five- and ten-year collision history, and an evaluation of walking and biking trips across the city.

Key takeaways are:

- The most stressful segments for bicycles are located on El Camino Real, Alma Street, Oregon Expressway, San Antonio Road, and Foothill Expressway.
- About 68% of street miles in Palo Alto are low stress for bicycles (LTS 1 or LTS 2), yet low stress streets are often interrupted by high stress roadways and intersections.
- Major barriers and locations in the analysis include: Oregon Expressway, Adobe Creek, Barron Creek, Matadero Creek, Rail, Palo Alto Station, Palo Alto Transit Center, and El Camino Real/Embarcadero Road, California Avenue Station, El Camino Real/California Avenue, San Antonio Station, El Camino Real/Charleston Road.
- Based on the ten most recent years (2012-2022) of collision data, there has been a general decrease in the total number of pedestrian and bicycle involved collisions.
 - Pedestrian-involved collisions tended to be more severe during dark conditions, however, the majority of nighttime pedestrian-involved collisions took place in areas with streetlights.

- Broadside collisions are the most frequent type of bicycle collision that occurred in Palo Alto within the five year study period. The fatal and severe injury bicyclist-involved collisions predominantly occurred in areas where streetlights were absent.
- Based on location data modeled by Replica, the highest percentage of biking trips were associated with schools and colleges (17%), followed by shopping (11%) and work (8%) related trips.
 - With only 7% of the population, Hispanics and Latinos represent 20% of the total bike trips. With about 15% of the population, people age 18-34 made almost 45% of the total bike trips.
 - Over 59% of biking trips take place between 12 noon and 9 p.m., with the peak time observed at 3 p.m., representing 13% of the total bike trips.
 - The average bike trip is 14.2 minutes, and the median travel time is 10 minutes.
 - The average bike trip length is 2.5 miles, and 56% of trips are less than 2 miles in length, 23% are between 2 and 4 miles, and 20% are over 2 miles.
 - The highest number of bicyclists travel to or from Stanford University.
- Based on location data modeled by Replica, the highest percentage of walking trips were associated with shopping (31%), work (9%), and restaurant (9%) related trips.
 - With only 7% of the population, Hispanics and Latinos represent 20% of the total walking trips. With about 15% of the population, people age 18-34 made almost 37% of the total walking trips.
 - The peak time for pedestrian trips occurs between 3 and 5 p.m.
 - Most walking trips are under 5 minutes with a mean of 11 minutes and median of 7 minutes.
 - Most walking trips (56%) are under 0.5-mile, and 96% of trips are under 2 miles.

The highest number of pedestrians travel to or from Stanford University with other walking hubs in downtown, Barron Park, and Adobe Meadow/Meadow Park.

PROJECT DESCRIPTION

The City's existing 2012 BPTP is a critical planning, policy, and implementation document that supports efforts to improve the safety and attractiveness of walking, biking, and rolling as a means of transportation and recreation. The objectives of the BPTP Update are to seek robust community feedback; reevaluate implementation progress from previous plans to adjust recommendations for new policies, facilities, and programs; and to determine appropriate criteria and metrics to prioritize recommendations and network routes. The BPTP Update effort will also further investigate safety data to propose impactful recommendations, explore the role of emerging transportation technologies such as electric-bicycles and micro-mobility devices, and establish big-picture planning to expand bicycling and walking for all user types in support of the City's 2030 Comprehensive Plan, the Sustainability/Climate Action Plan, a Safe System approach, and other planning documents and policies. The BPTP Update effort will be a 24-month process, with the BPTP Update adoption anticipated for Summer 2025.

BACKGROUND

At its May 17, 2021 meeting, the City Council adopted a resolution supporting the City's grant application for the State Transportation Development Act (TDA) Article 3 Funds for the BPTP Update project, and in September 2021, the Metropolitan Transportation Commission (MTC) approved of the allocation of Transportation Development Act Article 3 (TDA3) funds to the City of Palo Alto in the amount of \$334,852 for the purposes of updating the 2012 Bicycle and Pedestrian Transportation Plan. At the June 19, 2023 meeting, the City Council approved a professional services contract with Kittelson & Associates, Inc. with subconsultant Mobycon, to prepare this BPTP Update. At the January 22, 2024 meeting, the City Council received an Informational Report as an overview on the BPTP Update effort.¹

ANALYSIS

The Commission is being asked to review and provide feedback on the project's draft vision statement (Attachment O), objectives (Attachment P), and Performance Measures (Attachment Q) created from feedback received during the first phase of engagement. The Commission may also provide feedback on the existing conditions and needs analysis. The following section presents a brief discussion of the analysis approach and findings for each of the topics covered in this task. And the Stakeholder Engagement section below goes into more detail about the vision statement, objectives, and performance measures.

E-bikes and Shared Micromobility. Electrification of the transport system has expanded in various ways with the development of electric bicycles (e-bikes) (which now out-sell electric cars in the USA) and e-scooters. The widespread use of internet-connected mobile phones has also allowed shared mobility to take off with bike, e-bike, and e-scooter sharing systems being implemented in cities around the world.

Electric Bicycles. The State of California Department of Motor Vehicles (DMV) defines e-bikes as "a bicycle equipped with fully operable pedals and an electric motor of less than 750 watts." Within this definition, the DMV has established three classes of e-bikes.

- Class 1: A low speed pedal-assisted electric bicycle equipped with a motor which provides assistance only when the rider is pedaling and ceases to provide assistance when a speed of 20 mph is reached.
- Class 2: A low speed throttle-assisted electric bicycle equipped with a motor used exclusively to propel the bicycle and NOT capable of providing assistance when a speed of 20 mph is reached.

¹ Palo Alto City Council Meeting January 22, 2024. Information Report 14: Bicycle and Pedestrian Transportation Plan (BPTP) Update: an active transportation plan – introduction and overview, community engagement, context and baseline conditions, and next steps.
<https://cityofpaloalto.primegov.com/meetings/ItemWithTemplateType?id=3829&meetingTemplateType=2&compiledMeetingDocumentId=8932>

- Class 3: A low speed pedal-assisted electric bicycle equipped with a speedometer, and a motor which provides assistance only when the rider is pedaling and ceases to provide assistance when a speed of 28 mph is reached.

With e-bikes allowing people to travel further by bicycle, e-bikes can contribute to mode shifts and decongestion if they are replacing trips that would otherwise be made by personal automobile. Although research has found decongestion benefits to be marginal compared to the health benefits, these benefits are still relevant in the grand scheme of the transportation landscape. Studies have shown that e-bike riders travel further and cycle more often with one study from 2020 finding that after purchasing an e-bike, riders increased their total bicycle usage from 1.3 miles to 5.7 miles per day and that their share of all trips made by bike increased from 17 per cent to 49 per cent. Although the benefits of e-bikes far outweigh the disbenefits, there are some challenges that must be addressed. E-bikes can allow users to travel at relatively high speeds which may present a safety risk to e-bike users and other active users (pedestrians, traditional cyclists) around them when there is a great speed differential, though the kinetic energy involved in a crash between an e-bike and pedestrian is significantly less than that involved in an automobile crash. While e-bikes are not drastically different than traditional bicycles, safely and effectively accommodating them in the transportation system requires careful thought of some specific considerations. For example, to mitigate conflicts between modes, wider facilities should be implemented to ensure faster users can overtake slower ones and additional separation could be implemented to reduce the risk of crashes at conflict points. Design guidance developed for this BPTP Update will consider potential increases in e-bike usage.

Shared Micromobility. The United States Department of Transportation Federal Highway Administration (FHWA) defines micromobility as “any small, low-speed, human- or electric-powered transportation device, including bicycles, scooters, electric-assist bicycles, electric scooters (e-scooters), and other small, lightweight, wheeled conveyances”. Generally, micromobility vehicles (or devices) are expected to operate in the same road space as bicycles, using bike lanes and paths if available, otherwise sharing the roadway with motorists. While there is no California statewide law specifically permitting or prohibiting riding a bicycle on a sidewalk, the State DMV does not allow motorized scooters to be used on sidewalks and does not allow them to exceed 15 mph. E-scooter users under the age of 18 must wear a helmet and users must have a valid driver’s license.

Over the past decade, a variety of shared micromobility systems have emerged with the most common being shared e-scooters and e-bike share systems. While e-bikes and e-scooters are the most common form of micromobility, some niche forms are emerging including e-cargo bikes, mopeds, and neighborhood electric vehicles (NEVs), although these forms of mobility are yet to become widespread.

Advancements in technology have allowed many systems to now use a hybrid docked and dockless system based on geofencing. Municipalities and operators can now designate specific zones for parking shared micromobility vehicles, reducing the need for docking infrastructure while still allowing the municipality control over where vehicles can park.

The City of Palo Alto adopted a one-year bicycle and electric scooter sharing pilot program in March 2018 (CMR #8546) and developed permit guidelines for vendors to operate within the City of Palo Alto. The pilot program was extended by Council in 2019 (Resolution #9822) and subsequently in 2020 (Resolution #9882). The pilot program implementation was initially delayed due to staff resources and delayed further as a result of the COVID-19 pandemic. Staff recommended extending the pilot program from its expiration date of March 31, 2022 for an additional 18 months to test the concept of private bicycle and electric scooter sharing systems in Palo Alto.² However, the extension has not been implemented and other shared micromobility partnerships have not been pursued since the 37-bike system run by Motivate was discontinued.

Bicycle Parking Inventory. Bicycle parking is an essential component of a complete bicycle network. To better understand the supply and demand for bicycle parking within the active downtown core of Palo Alto, a data collection effort was undertaken using the ESRI Survey123 application and tablets. The data collection area included three parallel streets – University Avenue, Hamilton Avenue, Lytton Avenue – and cross streets between the Caltrain station and Middlefield Road. A total of 142 data points were collected. Each data point represents one bike parking location (e.g., a bike rack or bike corral). For each data point the following information was obtained:

- Location of bike parking (University Avenue, Parallel Street, or Cross Street)
- Latitude and longitude of each data point
- Total number of bike parking spaces
- Number of bike parking spaces per rack
- Number of occupied bike parking spaces
- Type of bike rack (Inverted U, Series Inverted U, Wave, Locker, Elevated or Other)
- The presence of a bike corral (Yes/No)
- Location of bike rack/corral (on the sidewalk or on the street)
- Condition of bike rack
- Classification of bike parking as short-term or long-term
- For short-term parking, proximity to the front entrance of the building it serves (within 50 feet)
- Whether the bike parking is covered (Yes/No)
- Security level of the bike parking, specifically if it's secured to the ground
- Presence of signage and/or wayfinding information at the parking location (optional)
- Additional notes on observations (optional)
- Photos for visual documentation

² <https://www.cityofpaloalto.org/files/assets/public/v/1/agendas-minutes-reports/reports/city-manager-reports-cmr/year-archive/2020-2/id-11523.pdf?t=43227.24>

There are a total of 679 bike parking spaces in the survey area. University Avenue features 180 bike parking spaces at 61 bike parking locations, while Hamilton and Lytton Avenues combined offer 202 spaces at 43 locations, and the surrounding streets contribute an additional 297 spaces at 38 locations, including the Palo Alto Caltrain station. Approximately 90% of these spaces are located on the sidewalks and the remaining 10% are located on the street. There is a broad variety of bicycle rack types, with inverted U-racks (circular, rectangular) being predominant. Almost 9% of spaces are covered.

A higher utilization of bicycle parking was noted along University Avenue and near the Caltrain station. Spaces were generally available in the bike racks during the observation period (between 10 a.m. and 4 p.m. on December 14, 2023). People were observed to choose to lock bicycles to sign posts or trees, presumably desiring to park as close to their destination as possible. This was observed to occur even when space was available in a nearby rack.

Bicycle Level of Traffic Stress (LTS). Bicycle level of traffic stress (LTS) is a rating given to a road segment or crossing indicating the traffic stress it imposes on bicyclists. Levels of traffic stress range from 1 to 4 with LTS 1 indicating low stress facility and LTS 4 indicating a high stress facility. The segment analysis considers roadway functional classification, vehicle volume, posted or prevailing vehicle speeds, number of vehicle lanes, the presence of on-street parking, and vehicle parking and bicycle lane widths. The crossing analysis considers the right-turn lane configuration and length, bike lane approach, vehicle turning speeds, and the presence of a median refuge. The draft Bicycle LTS maps are included as Attachments B, C, and D.

As shown in the Bicycle LTS maps (Attachments B, C, and D), the most stressful segments for bicyclists are located on El Camino Real, Alma Street, Oregon Expressway, San Antonio Road, and Foothill Expressway. Many streets with existing bicycle facilities were classified as low-stress, LTS 1 or LTS 2. Approximately 68% of street miles in Palo Alto are LTS 1 or LTS 2. This map illustrates how low stress streets in Palo Alto are often interrupted by high stress roadways and intersections.

Major Barriers. The analysis of major barriers examines linear barriers and barriers near major transit stations that require people to take detours and increase the length of walking and biking trips. The draft barriers maps are included as Attachments E through K.

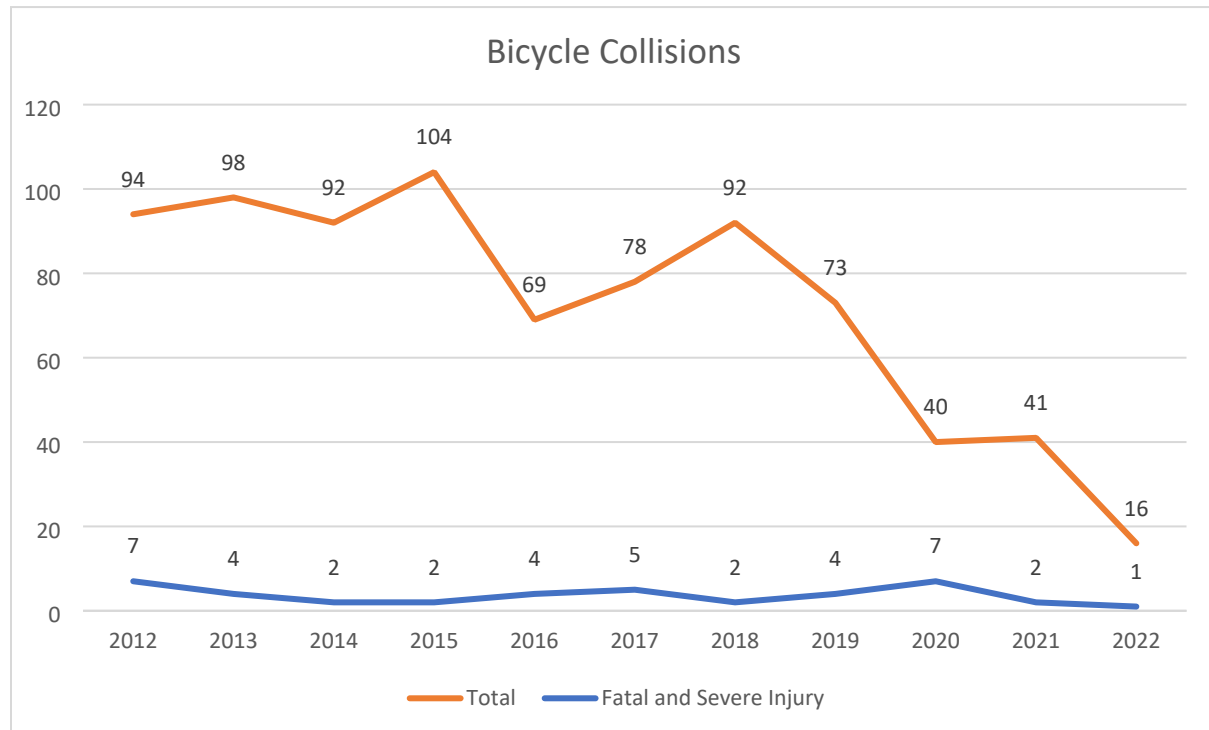
- **US 101:** The lack of crossing opportunities across US 101 results in noticeably longer walking trips, including some paths that are more than four times longer than the straight line crossing path. Of the existing crossing locations, the walking and bicycling bridges provide the highest level of separation from vehicles, while the Embarcadero Road and San Antonio Road crossings include vehicle-oriented facilities such as channelized free highway on- and off-ramps. The most significant gap occurs between the two walking and bicycling bridges, limiting access to the Adobe Creek Loop Trail.
- **Oregon Expressway:** The Oregon Expressway does not create significantly longer pedestrian crossing paths as crossings with curb ramps, crosswalks, and traffic signals are generally located every quarter mile.

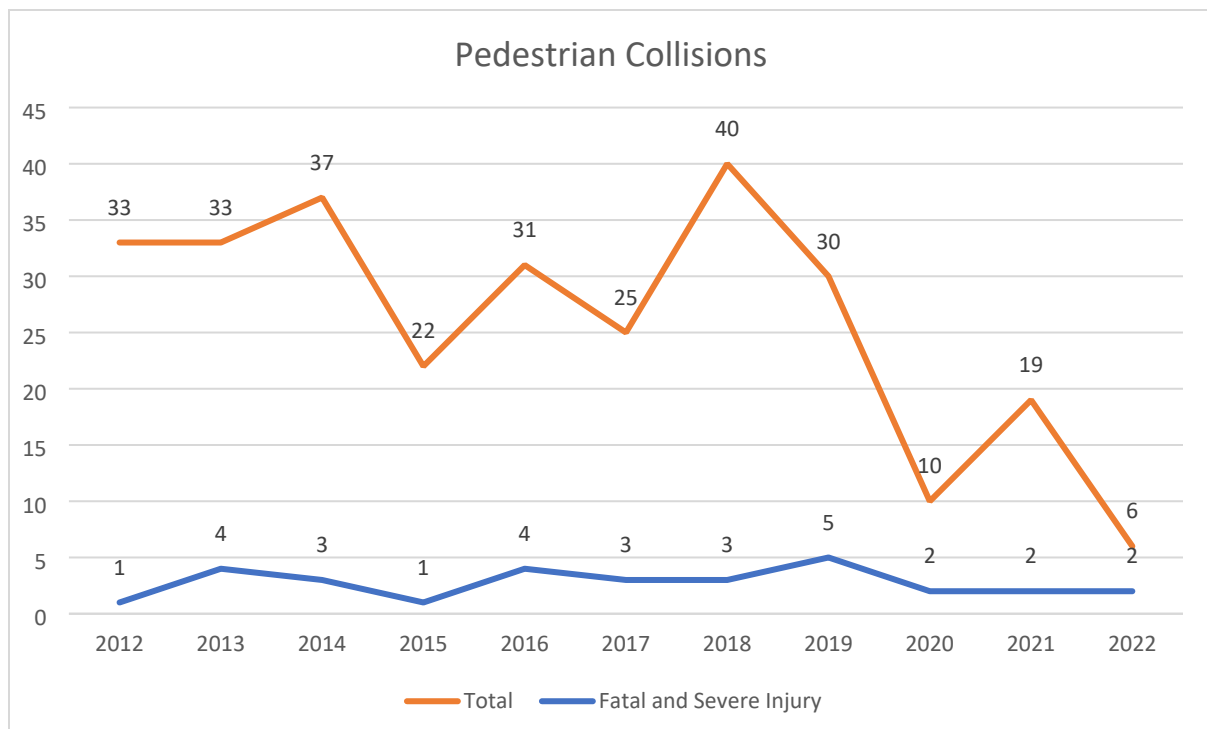
- **Adobe Creek:** The lack of crossing opportunities of Adobe Creek, especially to the south, results in out-of-distance travel of approximately two times the trip length. Opportunities to cross Adobe Creek include Louis Road, Middlefield Road, Charleston Road, Alma Street, and El Camino Real (all of which include sidewalks). There are also two walking- and bicycling-only connections: a walkway connecting the Miller Avenue cul-de-sac to Wilkie Way, and the Los Altos-Palo Alto Bike Path (connecting Los Altos Avenue to Arastradero Road). The greatest out of direction travel occurs in the area between the Los Altos-Palo Alto Bike Path and the Foothill Expressway, where the creek runs between the Alta Mesa Memorial Park and a residential neighborhood.
- **Barron Creek:** While some paths across Barron Creek are longer than the straight long crossing distance, they are usually less than double that distance due to the availability of closely-spaced crossing facilities. Crossing opportunities are generally located every 1,100 feet north of Waverly Street, and every 300 feet south of Waverly Street and sidewalks are provided on streets crossing the creek.
- **Matadero Creek:** Lack of crossing opportunities of Matadero Creek result in increased travel distances of up to 1.75 times, especially to cross the canal west of Bryant Street. The presence of the rail line along the southern tip of the canal's above-ground alignment further increases the out of distance travel in that area.
- **Rail:** There is substantial variation in crossing opportunities along the length of the rail line. The longest distances are near Seale Avenue, Colorado Avenue, El Dorado Avenue, Loma Verde Avenue, and El Verano Avenue. There is an approximately 0.65-mile gap between the Churchill Avenue and California Avenue crossings with a midpoint at Seale Avenue. Peers Park is located between these two crossing locations on the west side of the railroad tracks, across the tracks from residential neighborhoods. The Churchill Avenue crossing is at grade. The California Avenue crossing is a grade-separated undercrossing that is not yet ADA compliant, and bicyclists must dismount to navigate the steep undercrossing if others are present in the tunnel. There is an approximately 1.3-mile gap between the California Avenue and Meadow Drive crossings (note, while the Oregon Expressway crosses the tracks, sidewalks are not provided). The Meadow Drive crossing is at grade.
- **Palo Alto Station, Palo Alto Transit Center, and El Camino Real/Embarcadero Road:** Primary barriers include the presence of several channelized turn lanes, a number of intersections missing crosswalk markings, and there is a gap in the sidewalk network along Palo Alto Avenue east of El Camino Real.
- **California Avenue Station, and El Camino Real/California Avenue:** Primary barriers include missing crosswalk markings and presence of a channelized right-turn lane at the intersection of El Camino Real and Page Mill Road.
- **San Antonio Station and El Camino Real/Charleston Road:** The primary barrier in this area is a lack of sidewalks on a portion of San Antonio Road and on residential streets.

Safety and Collisions. A high-level review of ten years of collision data was conducted to identify a general trend in the number and severity of pedestrian and bicycle collisions. The most recent five years of collision data was conducted to identify patterns or trends based on temporal characteristics, lighting conditions, location characteristics (intersection versus segment),

primary collision factors, age, and gender. These collision profiles provide a better understanding of the common risks, and where and how efforts should be focused to most effectively make streets safer for people walking and biking.

Based on the ten most recent years (2012-2022) of collision data, there has been a general decrease in the total number of pedestrian and bicycle involved collisions.





Throughout the five years (2018-2022) under more detailed review, a total of 104 pedestrian and 257 bicycle collisions were reported in the city of Palo Alto, with three collisions involving both pedestrians and bicyclists. Around 12%, or 12, of the pedestrian collisions resulted in a fatality (3 collisions) or severe injury (9 collisions). Around 5%, or 13, of the bicycle collisions resulted in a fatality (one collision) or severe injury (12 collisions). Collision maps are included as Attachments L, M, and N.

Pedestrian-involved collisions tended to be more severe during dark conditions. Around 29% (30 collisions) of the injury pedestrian collisions and almost half (6 collisions) of the fatal and severe injury pedestrian collisions occurred at night. Although the majority of nighttime pedestrian-involved collisions take place in areas with streetlights, the effectiveness of this lighting is inconsistent. Often, streetlights may not be bright enough or may be spaced too far apart. This issue particularly affects pedestrians and those on sidewalks, as streetlights are often designed primarily with vehicles in travel lanes in mind.

The most frequent type of bicycle collision that occurred in Palo Alto within the five year study period are broadside collisions, constituting 61% (156 collisions), followed by sideswipe collisions at 13% (34 collisions). Considering fatal and severe injury bicycle collisions, broadside collisions make up 54% (7 collisions), while head-on and hit object collisions comprise 15% (2 collisions) each. The fatal and severe injury bicyclist-involved collisions predominantly occurred in areas where streetlights were absent.

Activity and Demand. The analysis utilizes various data sources, including counts and location based data, to estimate existing and future walking, biking, and rolling activity in the City and forecast benefits of investments in the active transportation network. To understand existing walking and biking activity, Kittelson utilized Replica, a big data mobility analytics platform that leverages a composite of location data collected from personal mobile devices and in-dashboard telematics. Replica's seasonal trips tables and demographic and employment tables (Places) are created using high-fidelity activity-based travel models that simulate the movements of residents, visitors, and commercial vehicles in a given area. Replica produces models at the "megaregions" level, most of which cover between 10 and 50 million people and multiple states, for a typical weekday and typical weekend day in a given season. Data outputs can be queried down to the network link level. Replica's weekly Origin-Destination (O-D) pairs and Vehicle Miles Traveled (VMT) tables (Trends) is a nationwide activity-based model updated each week with near-real-time data on mobility, consumer spending, and land use. Replica's weekly tables have census-tract-level fidelity with mobility data including origins and destinations, trip mode, and residential vehicle miles traveled.

Replica Data is based on information collected from travelers, it a) only provides a sample of the total trips being made, and b) also requires normalization and expansion of location-based data via a variety of algorithms. The identity of individual drivers or smart devices is not known by the project team. As such, its accuracy may be questioned. However, research to date has shown that the accuracy of Replica data for such data as trip origins and destinations and other travel pattern information increases as the sample size increases. Additionally, since Replica data is dependent upon smartphone tracking, it is possible that some inherent biases in the sample base may occur because a higher proportion of members of certain demographic groups may not share location on their smartphones; hence, these groups may be under-represented in data. For more information:

<https://documentation.replicahq.com/docs/seasonal-mobility-model-methodology-summary-places>.

The Spring 2023 data from Replica includes approximately 91,800 biking trips by 58,200 riders and 142,000 walking trips by 96,900 pedestrians originating within two miles of city limits. The dataset is a complete trip and population table for a typical weekday and typical weekend day for the selected season and region. Model inputs include American Community Survey 5-year estimates, TIGER/Line data, LEHD Origin-Destination Employment Statistics Data, and ACS Public Use Microdata Sample (PUMS), the Census Transportation Planning Products Program (CTPP) as well as data from the National Center for Education Statistics, US Department of Education, building data and proprietary parcel data and points of interest data.

- **Biking Activity.** Based on Replica data, the highest percentage of biking trips was associated with schools and colleges (17%), followed by shopping (11%) and work (8%) related trips. With only 7% of the population, Hispanics and Latinos represent 20% of the total bike trips. With about 15% of the population, people age 18-34 made almost 45% of the total bike trips. The highest percentage of trips in the morning occurs at 7

a.m., constituting around 11% of the overall bike trips. Over 59% of trips take place between 12 noon and 9 p.m., with the peak time observed at 3 p.m., representing 13% of the total bike trips. The average bike trip is 14.2 minutes, and the median travel time is 10 minutes. The average bike trip length is 2.5 miles, and 56% of trips are less than 2 miles in length, 23% are between 2 and 4 miles, and 20% are over 2 miles. The highest number of bicyclists travel to or from Stanford University.

- **Walking Activity.** Based on Replica data, the highest percentage of walking trips were associated with shopping (31%), work (9%), and restaurant (9%) related trips. With only 7% of the population, Hispanic and Latino represent 20% of the total walking trips. With about 15% of the population, people age 18-34 made almost 37% of the total walk trips. The peak time for pedestrian trips occurs between 3 and 5 p.m. Most walking trips are under 5 minutes with a mean of 11 minutes and median of 7 minutes. Most walking trips (56%) are under 0.5-mile, and 96% of trips are under 2 miles. The highest number of pedestrians travel to or from Stanford University with other walking hubs in downtown, Barron Park, and Adobe Meadow/Meadow Park.

NEXT STEPS

The City's Office of Transportation will host a multi-day working session April 16-18, 2024 to confirm the vision and goals and to draft network criteria and performance measures that will be used to identify and evaluate project, program, and policy recommendations.

Following committee and Council review and input on the existing conditions and needs analyses, the project team will develop network and corridor criteria to identify and prioritize project, program, and policy recommendations. Draft recommendations will be brought for committee and Council review in Fall/Winter 2024.

FISCAL/RESOURCE IMPACT

The BPTP Update project cost is \$333,945, including a 10 percent contingency. The City is eligible to cover project expenditures under MTC's TDA Article 3 program and can request an allocation of up to \$334,852 for the effort. City staff anticipates that all eligible costs incurred will be reimbursed through the TDA Article 3 payment reimbursement process. These funds are included in the FY 2024 Adopted Budget in the Bicycle and Pedestrian Transportation Plan Implementation Project (PL-04010).

STAKEHOLDER ENGAGEMENT

Phase 1 Community Engagement Themes

Phase 1 community engagement themes included an interactive map, public survey (developed and distributed in partnership with the Safe Streets For All Action Plan team), a series of seven committee and working group meetings, an in-person pop-up event at Bike Palo Alto, and a virtual community meeting visioning workshop. An overview of what we heard through these Phase 1 engagement activities is presented in this section.

- *Interactive Map.* A total of 956 unique comments were received between September 28 and December 31, 2023. Commenters had the option to select four different comment categories, including safety concern, infrastructure needed, destination you want to access, and other. Over half of the comments (54 percent, or 516 comments) were categorized as a "Safety Concern", followed by 29 percent (276) of comments categorized as "Infrastructure Needed", 14 percent (136) of comments were categorized as "Other", and the remaining 3 percent (28) of comments were categorized as "Destination You Want to Access". Participants were given the option to view and like comments from other users. Notably, comments advocating for improved infrastructure to address connectivity gaps in existing bicycle facilities, safety enhancements, wider bike lanes for increased rider comfort, and the provision of bike infrastructure near schools garnered the highest number of likes. The project team will be further reviewing the comments in the upcoming months.
- *Committee and Staff Working Group Meetings.* The BPTP Update team engaged with several standing committees and commissions and created a staff working group to guide the development of the work. The Phase 1 working group and committee feedback covers a wide range of topics related to safety, transportation infrastructure, across barrier connections, transformative technologies, and future development. Key themes that emerged from these meetings include:
 1. Safety is a top priority. People expressed concerns about pedestrian and bicyclist safety at various locations, especially for students walking to and from school.
 2. There is demand for high quality transportation infrastructure. Suggestions to support more walking and biking included implementation of more bicycle boulevards with traffic calming treatments on neighborhood streets, as well as additional secure and long-term bicycle parking, and separated bike lanes on higher speed higher volume roadways. There was general agreement that quality was more important than quantity when it comes to transportation infrastructure for walking and biking.
 3. Across barrier connections are needed. Committee and working group members recognized the presence of major barriers, such as U.S. 101 and the Caltrain tracks, and acknowledged the need for low-stress connections to overcome these barriers. There was a sense of urgency around selecting a preferred location for grade-separated crossing(s) of the Caltrain tracks.
 4. Power and potential of transformative technologies. The presence of new travel modes, including e-bikes and e-scooters, as well as the availability of new technologies such as LiDar and vehicle to infrastructure sensors, has rapidly changed the landscape of transportation planning and facility design. Committee and working group members expressed an interest in considering and incorporating these transformative technologies in the BPTP Update analysis and recommendations.
 5. Plan for the future. There is substantial growth planned in Palo Alto, particularly within select priority development areas. The BPTP Update must consider land use changes and development patterns.

- *Bike Palo Alto* (October 1, 2023). The BPTP Update team participated in the Bike Palo Alto event, which was held on October 1, 2023 from 1-3 p.m. at Fair Meadow Elementary School. The team received comments from about 40 participants who expressed concerns related to walking and biking safety, supported implementation of protected bike lanes, and identified El Camino Real as a barrier to connectivity within the city.
- *Visioning Workshop* (January 31, 2024). The goal of the visioning workshop was to identify the direction of the BPTP Update and establish the vision and objectives for the plan. The draft vision statement and objectives created during this process are as follows:
 - Draft Vision Statement: *In Palo Alto, we envision a city where sustainable transportation thrives, embodying safety, efficiency, and enjoyment. Our streets will form a connected, cohesive network, supporting walking and cycling with tree-lined paths, efficient shortcuts, and secure bike parking. We commit to overcoming barriers, ensuring every part of our community is easily traversed on foot or by bike, fostering a connected region where sustainable transportation is a shared priority. Palo Alto aspires to be a leader, with comprehensive programming encouraging everyone to embrace sustainable modes. We invest more in walking and biking infrastructure, ensuring equity and accessibility for all. Embracing the Safe System Approach, our city prioritizes safety and aims for a future where walking or biking for short trips is more convenient than driving, shaping a city where every journey, no matter how small, contributes to a more sustainable and connected community.*
 - Draft Objectives:
 - *Safe and Inclusive*: Prioritizing safety for all road users and ensuring equitable access to pedestrian and bicycle infrastructure across the community.
 - *Connected and Accessible*: Featuring a convenient and interconnected network of sidewalks, bike lanes, and trails that provide efficient travel options and easy access to transit.
 - *Comfortable and Enjoyable*: Enhancing the comfort and enjoyment of walking and cycling through amenities such as shade, greenery, and well-designed streetscapes.
 - *Community-Driven*: Fostering community engagement and participation in promoting active transportation, supported by education, programming, and infrastructure investments.
 - *Integrated and Collaborative*: Collaborating with neighboring cities to create a seamless and integrated regional network of pedestrian and bicycle infrastructure.

The draft vision, objectives, and performance measures are included as Attachment O, P, and Q, respectively. These will be refined with input from council, committee, and

working group members and revisited at the STAR Analysis workshop as part of the multi-day in-person collaborative work session on April 16-18, 2024.

Phase 2 Community Engagement Activities

Phase 2 engagement activities are planned to include a multi-day working session with a second series of committee and working group meetings, a multi-day collaborative in-person community working session, and a community meeting.

- *Project website and interactive map.* The project website can be accessed at: <https://www.cityofpal Alto.org/bikepedplan>. The website will continue to be updated with relevant material and information.
- *Committee and Working Group Meetings.* The project team will engage the following committees and working groups at during Phase 2:
 - Pedestrian and Bicycle Advisory Committee (March 5, 2024)
 - City School Transportation Safety Committee (March 28, 2024)
 - Planning and Transportation Commission (March 27, 2024)
 - Parks and Recreation Commission (March 26, 2024)
 - City Council (Spring 2024)
 - Interagency Staff Working Group (March 27, 2024)
- *Street Level Engagement:* The project team will lead and participate in the following street level engagement activities during Phase 2:
 - Earth Day (Sunday, April 21, 2024). This event will include tabling to seek additional feedback on the vision and goals and seek input on community needs and recommendations.
 - Walkabout(s)/Bikeabout(s). Walk and bikeabouts will be planned for April 16-18, 2024 in collaboration with community partners. These events are in the planning and coordination stages and the timing and location of these events will be posted to the project website and promoted through social media and other publications.
- *Bicycle Network Development Workshop.* Attendees will participate in a “STAR Analysis.” A STAR analysis is a visual way to identify priority origin/destination pairs within the transportation network and results in a conceptual key bicycle corridor network based on existing desire lines. The workshop will offer stakeholders a hands-on approach to explore key factors including local routes, travel behaviors, and infrastructure gaps. The workshop will include:
 - Definition of origins and destinations
 - Development of the star patterns
 - Bundling and optimization of the routes.

The outcomes from the STAR Analysis be used to verify, modify, remove, and create the active transportation network recommendations.

- *Community Meetings.* One in-person community meeting will be held in Fall 2024. The goal of this second meeting is to refine project recommendations and gather feedback on prioritization.

ENVIRONMENTAL REVIEW

California Senate Bill 922 (2022) exempts active transportation plans, such as bicycle transportation plans like the BPTP Update from environmental review under the California Environmental Quality Act (CEQA).

ALTERNATIVE ACTIONS

None.

ATTACHMENTS

Attachment A: Existing Bicycle Facilities Map (Final)
Attachment B: Bicycle Level of Traffic Stress Map - Citywide (Draft)
Attachment C: Bicycle Level of Traffic Stress Map - Bicycle Facilities (Draft)
Attachment D: Bicycle Level of Traffic Stress Map - Intersections (Draft)
Attachment E: Barriers Map - US 101 (Draft)
Attachment F: Barriers Map - Adobe Creek (Draft)
Attachment G: Barriers Map - Barron Creek (Draft)
Attachment H: Barriers Map - Matadero Creek (Draft)
Attachment I: Barriers Map - Oregon Expressway (Draft)
Attachment J: Barriers Map - Rail Corridor (Draft)
Attachment K: Barriers Map - Transit Station Areas (Draft)
Attachment L: Collision Map - Pedestrian and Bicycle Collisions (Draft)
Attachment M: Collision Map - Pedestrian Collisions by Severity (Draft)
Attachment N: Collision Map - Bicycle Collisions by Severity (Draft)
Attachment O: Vision Statement (Draft)
Attachment P: Objectives (Draft)
Attachment Q: Performance Measures (Draft)

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