City of Palo Alto (ID # 9193)

City Council Staff Report

Report Type: Study Session **Meeting Date: 6/12/2018**

Summary Title: Update on Implementation of the Bicycle + Pedestrian Transportation Plan

Title: Update on the Ongoing Implementation of the Bicycle + Pedestrian Transportation Plan and the Neighborhood Traffic Safety and Bicycle Boulevards – Phase 1 Project along Amarillo Avenue, Bryant Street, East Meadow Drive, Montrose Avenue, Moreno Avenue, Louis Road, Palo Alto Avenue, and Ross Road

From: City Manager

Lead Department: City Manager

Recommendation

Staff recommends that the City Council receive a presentation on the ongoing implementation of the *Bicycle + Pedestrian Transportation Plan*, and, more specifically, the *Neighborhood Traffic Safety and Bicycle Boulevards – Phase 1* Project. No Council action is required.

Executive Summary

This report provides a summary of the background and approach to the *Neighborhood Traffic Safety and Bicycle Boulevards – Phase 1* Project ("Project"). The City has been at the forefront of bicycle and pedestrian planning since the 1980s, when the City developed the nation's first bicycle boulevard on Bryant Street. In 2012, the Council adopted a bold, ambitious, and visionary *Bicycle + Pedestrian Transportation Plan*. The Neighborhood Traffic Safety and Bicycle Boulevard Project derived directly from this adopted plan. While the project design was developed with much community and stakeholder input, implementation has been met with significant community concern. The public outreach, approach, speed of implementation, and responsiveness to citizen concerns have inadvertently resulted in a major disconnect between City staff's intentions and a significant number of residents.

Over the past few months, staff has made numerous changes to project implementation while managing the cost impact of construction contract change orders. Based on the community feedback, staff made several significant and needed changes to guide future implementation. These include:

- Meetings with many of the residents that have expressed concerns
- Additional notifications and consultation with residents immediately adjacent to proposed treatments prior to construction
- Updated frequently-asked questions: (https://www.cityofpaloalto.org/civicax/filebank/documents/64953)
- Revamped the Project website with clearer information and a detailed construction schedule

(https://www.cityofpaloalto.org/gov/depts/pln/transit/transportation_projects/ntsbb1/default.asp)

- Participated in an interview for *Palo Alto Weekly – Behind the Headlines* (video can be found here: https://www.youtube.com/watch?v=6533wy4jwog&feature=youtu.be)
- Convened several meetings with vocal proponents and vocal opponents
- Conducted a Bicycle Boulevard Orientation at Ramos Park on April 11, 2018. This event included loaner bicycles and scooters for residents to use to try out the new bike boulevard. The event also included safe bicycle riding information as well as a table of technical experts that could discuss the design and answer questions the Project. The event was the first in a series of educational events.
- Began to develop a roundabout educational curriculum to be taught in 3rd, 5th, 6th and 8th grades
- Set-up informational tables at all PAUSD schools with walk and roll routes that intersect with the Project
- Rode pace-bikes up and down Ross Road exhibiting recommended bicyclist behavior
- Distributed online questionnaire to gauge community perceptions of the Project before construction is complete
- Added project informational signage with contacts for feedback
- Installed temporary mock-ups of proposed treatments on the Amarillo and Greer area streets to demonstrate the treatments and enable feedback before permanent construction
- Modified designs of some treatments

With these needed changes in approach and outreach, staff anticipates authorizing the construction contractor, Granite Construction, to resume work in mid-June. The Bicycle + Pedestrian Transportation Plan has a stated goal of increasing bicycle use for local and work commute trips by 100% by 2020 by providing improved facilities along the proposed bicycle network, which facilitates both north-south and east-west connectivity throughout Palo Alto. According to the *Sustainability and Climate Action Plan*, more than 60% of the City's remaining emissions come from transportation. A key action identified in the *2018-2020 Sustainability Implementation Plan* is **"**Increase bicycle boulevard mileage by 13.1 miles, and redesign streets to support active and non-SOV modes of travel." More details about the recent engagement actions can be found in the "Current Project Status" Section of this report.

Background

Bicycle + Pedestrian Transportation Plan Implementation

The City Council adopted the *Bicycle + Pedestrian Transportation Plan* in July 2012. The Plan includes a proposed bikeway network of off-street multi-use paths, bicycle boulevards, bicycle lanes, and enhanced bikeway facilities. The plan includes goals of increasing bicycle traffic for local and work commute trips by 100% by 2020 by providing improved facilities along the proposed bicycle network, which facilitates both north-south and east-west connectivity throughout Palo Alto. The *Bicycle + Pedestrian Transportation Plan* can be found here:
https://www.cityofpaloalto.org/gov/depts/pln/transit/bicycling_n_walking/bikepedplan/default.asp.

Implementation of the *Bicycle + Pedestrian Transportation Plan* began in 2013 with City Council authorization of up to $1.2M per year over five years as part of the Capital Improvement Program (CIP). With this funding commitment, staff began planning, designing, and constructing 18 projects. Since award of consultant planning contracts in April 2014, bicycle network implementation has focused primarily on bicycle boulevards and enhanced bikeways, although Transportation Division staff has also coordinated with Public Works and Community Services staff to implement additional improvements through contracts for street resurfacing and park improvements.

Staff also works to implement data-driven spot improvements in response to resident requests, and seeks to ensure ongoing rehabilitation and maintenance of the bicycle and pedestrian network.

Bicycle Boulevards Purpose and Benefits

In 1982, the City pioneered the creation of the first "bicycle boulevard" – turning Bryant Street north of East Meadow Drive, a residential street, into a street that prioritized bicycle safety and circulation. The Comprehensive Plan defines a bicycle boulevard as a "low volume through-street where bicycles have priority over automobiles, conflicts between bicycles and automobiles are minimized, and bicycle travel time is reduced by the removal of stop signs and other impediments to bicycle travel. The removal of stop signs is especially important in Palo Alto, due to the large number of stop signs on local and collector streets."

Key features that make bicycle boulevards attractive and safer for people who bicycle according to the National Association of City Transportation Officials (NACTO) are:

- Low traffic volumes
- Low motor vehicle speeds (cars travel at bicycle speed except when passing)
- Discouragement of non-local motor vehicle traffic
- Free-flow travel for people on bicycles by assigning the right-of-way to the bicycle boulevard at intersections wherever possible
- Traffic control to help bicycles cross major streets

One important feature of bicycle boulevards that greatly improves cycling efficiency is a reduction in the number of stop signs; this measure improves travel time and reduces fatigue. Reducing cyclist fatigue increases the feasible length of a trip by bicycle, and is especially important to people who are hauling trailers, carrying children, groceries, or parcels, thereby encouraging more trips by bicycle.

Discussion

Having a good plan, such as the *Bicycle + Pedestrian Transportation Plan*, that was developed and approved with significant community engagement, is not enough to ensure successful project implementation. Staff takes full and complete responsibility for the disproportionate community outreach that was needed when it came time to implementing the plan. What follows is an outline of the *Neighborhood Traffic Safety and Bicycle Boulevards – Phase 1* Project, changes we have made and are making to the project implementation, and will serve as relevant and context for discussion with the Council, public and staff.

Neighborhood Traffic Safety and Bicycle Boulevards – Phase 1 Project

As part of the approval of the *Bike + Pedestrian Transportation Plan*, Comprehensive Plan and the City's Infrastructure Plan, the City Council allocated $20M toward the implementation of the 2012 *Bicycle + Pedestrian Transportation Plan*. In March 2014, Council awarded an 18-month concept planning contract to Alta Planning + Design, Inc. for planning, design, and preliminary environmental assessment of the Bryant Street bicycle boulevard update; Greer Road bicycle boulevard; Moreno Avenue-Amarillo Avenue bicycle boulevard; Ross Road bicycle boulevard; and Homer Avenue-Channing Avenue enhanced bikeway. City Council Staff Report #4372 (contract award) can be found here: http://www.cityofpaloalto.org/civicax/filebank/blobdload.aspx?BlobID=39437. In December 2015, Amendment One was executed, which extended the term of the contract until March 2016 at no cost to the City. On March 28, 2016, Amendment Two was approved, which extended the term of the contract

until March 2017 at no cost to the City.

This concept planning contract was completed and the City Council adopted the Project Concept Plan on May 9, 2016. At this meeting, City Council also approved a final design contract with Alta Planning + Design, Inc. as well as a California Environmental Quality Act (CEQA) exemption for the Amarillo Avenue-Moreno Avenue, Bryant Street Update, Louis Road-Montrose Avenue, and Ross Road *Neighborhood Traffic Safety and Bicycle Boulevard* Project. City Council Staff Report #6904 (Concept Plan adoption and final design contract award) can be found here: http://www.cityofpaloalto.org/civicax/filebank/blobdload.aspx?BlobID=52165. The report includes a detailed project summary and the public engagement history.

The *Neighborhood Traffic Safety and Bicycle Boulevard – Phase 1 Project* consists of 7.1 miles of neighborhood traffic calming and bicycle boulevards and includes:

- ADA curb ramps
- Bicycle boulevard stencils
- Bicycle-oriented wayfinding signage
- Curb extensions
- Green stormwater infrastructure
- Landscaping and street trees
- Medians
- New and refreshed crosswalks
- New street lighting at crosswalk and within intersections
- Raised crosswalks (3)
- Raised intersections (5)
- Roundabouts (11)
- Slotted speed humps
- STOP sign removal or relocation

Many of these elements are described on the NACTO website in the Urban Bikeway Design Guide (link: https://nacto.org/publication/urban-bikeway-design-guide/bicycle-boulevards/). Traffic calming is planned along the corridors to reduce motor vehicle speeds and limit regional traffic intrusion on local streets. Where appropriate, all medians, roundabouts, and other features have been designed with mountable curbs and can be easily traversed by Fire Department and other emergency vehicles.

The *Neighborhood Traffic Safety and Bicycle Boulevards – Phase 1* Project does the following:

1. Enhances the existing Bryant Street Bicycle Boulevard from Palo Alto Avenue to East Meadow Drive, where it connects to the proposed Bryant Street Bicycle Boulevard extension. This corridor provides a continuous bicycle route from Menlo Park to Mountain View.
2. Constructs the Ross Road Bicycle Boulevard from Garland Drive, which is just north of Oregon Expressway, to Louis Road, where it will connect to the proposed Louis Road-Montrose Avenue Bicycle Boulevard. The Ross Road Bicycle Boulevard provides a second north-south, on-street bikeway for Palo Alto residents.
3. Constructs the Louis Road-Montrose Avenue Bicycle Boulevard from Middlefield Road to the proposed Adobe Creek US 101 Overcrossing. A portion of this route was identified in the *Bicycle + Pedestrian Transportation Plan*, but was expanded with additional funding from Google. This route connects the proposed Adobe Creek US 101 Overcrossing to the proposed Ross Road Bicycle Boulevard, providing a system of connections within Palo Alto

and, once the overcrossing is complete, to the San Francisco Bay Trail and employment centers in the city of Mountain View.

4. Constructs the Amarillo Avenue-Moreno Avenue Bicycle Boulevard from Middlefield Road to West Bayshore Road. This route provides an east-west connection across Palo Alto and enhances the system by connecting to the Ross Road Bicycle Boulevard.

The final design contract was completed and 100% of the plans, specifications, and estimates were transmitted to Staff on April 28, 2017. Through a competitive bidding process, the City awarded a construction contract to the lowest responsive bidder, Granite Construction Company, on June 27, 2017. The base bid was $8,694,191 with a 10-percent contingency for a total contract amount of $9,563,610. The final design and construction were funded through the *Bicycle + Pedestrian Transportation Plan* Implementation (PL-04010) capital improvement project, which is part of the 2014 Council Infrastructure Plan.

Construction began in September 2017 and is scheduled to continue until the end of 2018. Staff directed the contractor to construct the Project as a series of nine small segments in order to minimize the area of disruption. Construction on the Project started on Ross Road between Garland Drive and Louis Road. Abutting residents were provided with seven-day and 24-hour construction notices before any work began.

Current Project Status

Construction along Ross Road, Moreno Avenue, and a short segment of Louis Road has mostly been completed. During the installation of many of the traffic calming features along Ross Road, Council and Staff received calls and emails from many residents highlighting several areas of concern, including:

- Perceived lack of community input and advanced notice
- Introduction of the roundabout at Ross Road and East Meadow Drive
- Curb extensions constructed next to the slotted speed humps
- Radius of the new YMCA driveway aprons
- Medians at the intersections of Ross Road at Colorado Avenue and Ross Road at Loma Verde Avenue

On March 27, 2018, staff directed the contractor to hold off on starting any additional segments that were not already under construction. Since then, the contractor has been completing the work on Ross Road, including the installation of a second roundabout at Ross Road and Moreno Road, and adding signing, striping, and slotted speed humps to Moreno Avenue. The last two features to be constructed before a full work stoppage is put in effect are a set of raised intersections along Louis Road at Moreno Avenue and Amarillo Avenue, and a new crosswalk at Colorado Avenue and Sandra Place. This crosswalk was added at the request of Ohlone Elementary School administration and parents, and must be completed before any work begins on Amarillo Avenue in front of the school.

On April 6, 2018, staff made temporary markings in the Amarillo Avenue and Greer Road intersection to show what the new features would look like. But with an effort to make the temporary features look more realistic, staff directed the construction contractor to use larger materials that the public could interact with. During the week of May 14, 2018, the contractor installed temporary mock-ups of the planned roundabout at Amarillo Avenue and Greer Road and curb extensions and medians along Amarillo Avenue. The contractor also posted signage at proposed slotted speed hump locations and in areas where on-street parking will need to be removed to construct a shared use path leading to Ohlone

Elementary School. The proposed curb extensions at Bryant Street and Everett Avenue were also mocked-up using temporary materials.

Recent Community Engagement

Almost immediately following the start of construction, staff quickly recognized that there were a significant number of residents adjacent to the Project segments that were not aware of the *Bicycle + Pedestrian Transportation Plan* or the *Neighborhood Traffic Safety and Bicycle Boulevards – Phase 1* Project. While extensive community engagement activities were conducted throughout 2014, 2015 and 2016, only one large community meeting was held within the 17 months between the adoption of the Concept Plan and the start of construction. During this period, while the final design was completed and the construction contract was awarded, many residents may have forgotten about the Project and/or assumed that it was not moving forward as quickly as originally proposed.

In conversations with the public after the start of construction, staff also noted that many residents seemed to assume that a "bicycle boulevard" consists of either full roadway closures (e.g. Bryant Street at Lowell Avenue) and/or bicycle lanes (e.g. Louis Road). Many stated that they did not expect a bicycle boulevard to include curb extensions, speed humps, medians, and roundabouts.

These two viewpoints led many residents to advocate for revisiting the Concept Plan and final design of the Project. One nearby resident subsequently created a Change.org petition to stop the Project entirely and remove the treatments already been installed along Ross Road. An additional group within the community expressed concern about the ability of motorists and bicyclists to navigate the traffic calming features safely. As with all transportation projects that change roadway configurations, time is required for users to change their behaviors and adapt to changes. Experience suggests that this type of behavior change takes anywhere from six months to a year. Recently, as construction has wrapped up along Ross Road, staff has heard more community members expressing support for the Project and bike boulevards.

With the increased feedback from the community, staff has worked to provide additional information and outreach to the adjacent residents including:

- Meetings with many of the residents that have expressed concerns
- Additional notifications and consultation with residents immediately adjacent to proposed treatments prior to construction
- Updated the frequently-asked questions sheet (FAQs can be found here: https://www.cityofpaloalto.org/civicax/filebank/documents/64953)
- Revamped the Project website with clearer information and a detailed construction schedule (website can be found here: https://www.cityofpaloalto.org/gov/depts/pln/transit/transportation_projects/ntsbb1/default.asp)
- Participated in an interview for *Palo Alto Weekly – Behind the Headlines* (video can be found here: https://www.youtube.com/watch?v=6533wy4jwog&feature=youtu.be)
- Convened several meetings with vocal proponents and vocal opponents
- Conducted a Bicycle Boulevard Orientation at Ramos Park on April 11, 2018. This event included loaner bicycles and scooters for residents to use to try out the new bike boulevard. The event also included safe bicycle riding information as well as a table of technical experts that could discuss the design and answer questions the Project. The event was the first in a series of

educational events.

- Began to develop a roundabout educational curriculum to be taught in 3rd, 5th, 6th and 8th grades
- Set-up informational tables at all PAUSD schools with walk and roll routes that intersect with the Project
- Rode pace-bikes up and down Ross Road exhibiting recommended bicyclist behavior
- Distributed online questionnaire to gauge community perceptions of the Project before construction is complete
- Added project informational signage with contacts for feedback
- Installed temporary mock-ups of proposed treatments on the Amarillo and Greer area streets to demonstrate the treatments and enable feedback before permanent construction
- Modified designs of some treatments

As mentioned above, with all transportation projects, staff meets with concerned residents throughout the construction phase to make design adjustments to address their concerns. Some changes that have been made in the field based on resident requests include: addition of a slotted speed hump just south of Christine Drive (petition submitted by abutting residents); retention of all-way STOP control at Ross Road and Ames Avenue (request from Palo Verde Elementary School parents); relocation of planned streetlight; removal of planned curb extensions and a slotted speed hump that would have conflicted with a shared driveway; redesign of the roundabout splitter island to accommodate driveway access; and the relocation of a planned bicycle wayfinding sign.

Recent Engineering Review

As a result of the community concerns around some of the design elements, staff convened an Engineering Roundtable to review the design concerns raised by some residents. Alta Planning + Design, Inc. (Project engineer), TJKM (Peer-reviewer), Toole Design Group, Municipal Resource Group (independent third-party), and staff professional engineers attended the roundtable. Attendees reviewed elements of the construction plans, details, and specifications and made recommendations for design changes on the remaining segments, as well as some modifications at the Ross Road and East Meadow Drive roundabout. A memorandum summarizing the results of this Engineering Roundtable is included as Attachment A.

Prior to the Engineering Roundtable, staff invited emergency vehicles, Santa Clara Valley Transportation Authority (VTA) buses, and Palo Alto Unified School District (PAUSD) operators to maneuver through the recently-constructed roundabout at Ross Road and East Meadow Drive. The Fire Department brought out an ambulance, fire engine, and ladder truck. The emergency vehicles were able to make every turn. The video of the ladder truck can be found here: https://youtu.be/NCQpIEg7Frk.

The VTA bus could travel straight on East Meadow Drive and make a right turn, but not a left turn around the roundabout. The only VTA bus route that currently travels through this intersection travels straight along East Meadow Drive through the Ross Road intersection. However, the route does make a left turn at the intersection of East Meadow Drive and Louis Road, the location of another planned roundabout. The PAUSD school bus could only make the straight movement. In addition, large moving trucks could have difficulty making turns. There was a general agreement that this is a functional tradeoff, not a safety issue, in that accommodating large vehicle turns would also enable higher vehicle speeds through the intersection. To address this issue, the City can provide information to local agencies and organizations to help develop alternative routes for large buses. Staff will also have ready-to-go information to respond to residents with requests about moving truck access.

Staff plans to continue the enhanced level of community outreach throughout the remaining construction period with continual refinement and improvement. Part of this includes the installation of temporary mock-ups of the traffic calming features on each remaining segment at least one month before construction begins on that segment. Construction on Segment 4 (Amarillo Avenue) and Segment 6 (Bryant Street north of Everett Avenue) is scheduled to begin in mid-June and estimated for completion by September. The remaining segments will be constructed as shown by the estimated schedule below:

- Segment 7 (Bryant Street from Everett Avenue to Embarcadero Road) – July to October
- Segment 8 (Bryant Street from Embarcadero Road to East Meadow Drive) – August to November
- Segment 9 (East Meadow Drive, Louis Road, and Montrose Avenue between Fabian Way and Cubberley Community Center) – September to December

The design recommendations from the Engineering Roundtable and the emergency and bus demonstrations will be incorporated into the design of all remaining segments to ensure accessibility for first responders and, where necessary, transit providers.

For future transportation projects, and especially those delivered as part of the ongoing implementation of the *Bicycle + Pedestrian Transportation Plan*, staff will include a new community outreach phase into project development between planning and the construction phase. The goal is to increase general awareness, education and information about a project through communications platforms and outreach tools including social media, direct mailings with clear visuals, on-site signage, media stories, neighborhood meetings, special community open houses, outreach to target audiences, updates at Council meetings, and other strategies. Staff is already incorporating the valuable community feedback learned as part of the Neighborhood *Traffic Safety and Bicycle Boulevards – Phase 1* Project in its outreach approach to the upcoming Embarcadero Road at El Camino Improvements and the Charleston/Arastradero Corridor projects (which are different in scope, but should incorporate the learned outreach lessons).

The *Neighborhood Traffic Safety and Bicycle Boulevard – Phase 1* Project is not an isolated project, and is part of a larger shift in mobility options, that the community has supported and the City Council has directed through adoption of the *Bicycle + Pedestrian Transportation Plan*, *Sustainability and Climate Action Plan*, and *Comprehensive Plan*. However, with any significant change affecting the experiences of a wide range of users, there is also a significant need to support adaptation. Staff acknowledged that such shifts require frequent and ongoing communications and outreach with the community. While early community engagement was conducted on the *Neighborhood Traffic Safety and Bicycle Boulevards – Phase 1* Project, it is clear that the level of re-engagement necessary was underestimated and not adequately resourced. In addition, it was not clearly articulated nor understood that the *Neighborhood Traffic Safety and Bicycle Boulevards – Phase 1* Project is part of a larger bold *Bicycle + Pedestrian Transportation Plan* that shifts current thinking and behavior about mobility throughout the City. From an organizational perspective, staff is discussing how to provide additional support for transportation projects and the level of outreach needed to ensure the community feels informed and engaged while allowing staff to respond and adapt to community demands.

For the upcoming *Neighborhood Traffic Safety and Bicycle Boulevards – Phase 2* Project, staff will be revisiting the approved Concept Plan and communicating with nearby residents on some of the various

proposed elements before construction. This will also help to ease the frustrations with the construction itself and the disruption it causes.

In addition, the public will be notified of forthcoming changes through on-site signage, as well as "mock up" marking of planned installations at least two to three weeks in advance of construction of permanent features. This will ensure the public is aware of upcoming changes, has a point of contact for feedback, and that design adjustments can be tested before construction begins on the permanent features.

Lessons learned from the *Neighborhood Traffic Safety and Bicycle Boulevard – Phase 1* Project will be incorporated into Phase 2. Phase 2 of the project includes segments on the streets below and is expected to be let for construction in early 2019:

- Bryant Street Bicycle Boulevard Extension to San Antonio Road
- Donald Drive and Maybell Avenue between Georgia Avenue and El Camino Real
- Stanford Avenue between El Camino Real and Park Boulevard
- Park Boulevard between Castilleja Avenue and West Meadow Drive
- Maclane Street and Wilkie Way between Park Boulevard and creek bridge

Timeline

Staff plans to authorize the contractor to resume construction in mid-June, with a goal of completing construction by the end of 2018.

Resource Impact

As part of the approval of 2014 Council Infrastructure Plan, the City Council allocated $20M toward *Bicycle + Pedestrian Transportation Plan* implementation. For Fiscal Years 2018 through 2022, a total of $14.9M has been budgeted in the CIP for the *Bicycle + Pedestrian Transportation Plan* Implementation Project (PL-04010), with $5M in Fiscal Year 2018.

Policy Implications

The *Bicycle + Pedestrian Transportation Plan* identifies and prioritizes the development of the bicycle boulevard network. The *Bicycle + Pedestrian Transportation Plan* objectives addressed by the construction of the *Neighborhood Traffic Safety and Bicycle Boulevards – Phase 1* Project are:

> **Objective 1**: Double the rate of bicycling for both local and total work commutes by 2020 (to 15% and 5%, respectively).
>
> **Objective 2**: Convert discretionary vehicle trips into walking and bicycling trips in order to reduce City transportation-related greenhouse gas (GHG) emissions 15% by 2020.
>
> **Objective 3**: Develop a core network of shared paths, bikeways, and traffic-calmed streets that connects business and residential districts, schools, parks, and open spaces to promote healthy, active living.

Objective 4: Plan, construct, and maintain 'Complete Streets' that are safe and accessible to all modes and people of all ages and abilities.

Objective 5: Promote efficient, sustainable, and creative use of limited public resources through integrated design and planning.

In addition, the *Comprehensive Plan* goals, policies, and programs that support the construction of the *Neighborhood Traffic Safety and Bicycle Boulevards – Phase 1* Project include:

- **GOAL T-1** Create a sustainable transportation system, complemented by a mix of land uses, that emphasizes walking, bicycling, use of public transportation and other methods to reduce GHG emissions and the use of single-occupancy motor vehicles.

- **Policy T-1.1** Take a comprehensive approach to reducing single-occupant vehicle trips by involving those who live, work and shop in Palo Alto in developing strategies that make it easier and more convenient not to drive.

- **Program T1.19.2:** Prioritize investments for enhanced pedestrian access and bicycle use within Palo Alto and to/from surrounding communities, including by incorporating improvements from related City plans, for example the 2012 Palo Alto *Bicycle + Pedestrian Transportation Plan* and the Parks, Trails & Open Space Master Plan, as amended, into the Capital Improvements Program.

- **Goal T-3:** Maintain an efficient roadway network for all users.

- **Policy T-3.1:** Maintain a hierarchy of streets that includes freeways, expressways, arterials, residential arterials, collector streets and local streets, balancing the needs of all users in a safe and appropriate manner.

- **Policy T-3.2:** Enhance connections to, from and between parks, community centers, recreation facilities, libraries and schools for all users.

- **Program T3.5.2:** Establish procedures for considering the effects of street design on emergency vehicle response time.

- **Policy-T-3.7:** Encourage pedestrian-friendly design features such as sidewalks, street trees, on-street parking, gathering spaces, gardens, outdoor furniture, art and interesting architectural details.

- **Policy-T-3.8:** Add planting pockets with street trees to provide shade, calm traffic and enhance the pedestrian realm.

- **Policy T-4.1:** Keep all neighborhood streets open as a general rule.

- **Policy T-4.2:** Continue to construct traffic calming measures to slow traffic on local and collector residential streets, and prioritize traffic calming measures for safety over congestion management.

- **Policy T4.3:** Identify specific improvements that can be used to discourage drivers from using local, neighborhood streets to bypass traffic congestion on arterials.

- **Goal T-6:** Provide a safe environment for motorists, pedestrians, and bicyclists on Palo Alto streets.

- **Policy T-6.1:** Continue to make safety the first priority of citywide transportation planning. Prioritize pedestrian, bicycle, and automobile safety over motor vehicle level of service at intersections and motor vehicle parking. [(Previously Policy T-39) (Comp Plan Draft EIR Mitigation Measure AES-1)] [T134]

- **Program T6.1.1:** Follow the principles of the safe routes to schools program to implement traffic safety measures that focus on safe routes to work, shopping, downtown, community services, parks and schools including all designated school commute corridors.

- **Policy T-6.2:** Pursue the goal of zero severe injuries and roadway fatalities on Palo Alto city streets.

While it is difficult to estimate the impacts of individual bicycle boulevard projects, staff reviewed data collected from seven of the City's automated bicycle and pedestrian sensors. Approximately 80,000 riders on average use each existing bicycle boulevard every year in Palo Alto. A high of 216,000 annual riders has been recorded on the Bryant Street bicycle boulevard. Increasing the bicycle boulevard network within Palo Alto will help the City meet its goal of increasing bicycle traffic for local and work commute trips by 100% by 2020.

Environmental Review

A Negative Declaration for the *Bicycle + Pedestrian Transportation Plan* was adopted on September 4, 2012. Each individual project is subject to environmental assessment after there is agreement on a Concept Plan Line for further study.

At the time the Concept Plan was approved by City Council, this *Neighborhood Traffic Safety and Bicycle Boulevards – Phase 1* Project was found to be exempt from the provisions of the CEQA pursuant to Class 1, Section 15301, Existing Facilities, as the road work will facilitate bicycle and pedestrian use and will not increase roadway capacities. A Notice of Exemption was filed by the City on May 16, 2016 and no additional environmental review is required for approval of the construction of this project.

Attachments:

- Attachment A - Bicycle Boulevard Engineering Roundtable Memo
- Attachment B: Public Comments

MEMORANDUM

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(510) 540-5008
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To: Ed Shikada, Rob De Geus, and Joshuah Mello, City of Palo Alto

From: Hugh Louch, Joe Gilpin, and Carlos Valadao, Alta Planning + Design

Date: May 15, 2018

Re: Palo Alto Bicycle Boulevard Engineering Review

The City of Palo Alto held a Bicycle Boulevard Engineering Review Roundtable on Monday April 23 from 1:00 PM to 4:00 PM. The purpose of this meeting was to review the bicycle boulevard plans currently under construction on four corridors in Palo Alto:

- Ross Road
- Amarillo Avenue - Moreno Avenue
- Louis Road – Montrose Avenue
- Bryant Street

More information about these projects, including detailed concept plans, is available here: https://www.cityofpaloalto.org/gov/depts/pln/transit/transportation_projects/ntsbb1/default.asp

The purpose of this meeting was to review the plans, review issues and challenges that have arisen during construction, address concerns raised by neighbors, and identify any needed changes to the plans.

Attendees

Name	Organization	Email Address
Ed Shikada	City of Palo Alto	Ed.shikada@cityofpaloalto.org
Shahla Yazdy	City of Palo Alto	Shahla.yazdy@cityofpaloalto.org
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Wayne Tanda	Municipal Resource Group (MRG)	waynetanda@charter.net
Rob Burchfield	Toole Design Group	rburchfield@tooledesign.com
Hugh Louch	Alta Design	hughlouch@altaplanning.com
Joe Gilpin	Alta Design	joegilpin@altaplanning.com
Carlos Valadao	Alta Design	carlosvaladao@altaplanning.com
Ruta Jariwala	TJKM	Rjariwala@tjkm.com
Atul Patel	TJKM	apatel@tjkm.com

Chantal Cotton Gaines	City of Palo Alto	Chantal.gaines@cityofpaloalto.org

Agenda

The following agenda was followed.

Optional Site Visit by Bicycle:

9:00-11:30am	Optional Ross Road and Amarillo Avenue/Moreno Avenue Corridors Site Visit by Bicycle with City Staff

Roundtable Agenda:

1:00-1:10pm	Welcome and Introductions - City Staff
1:10-2:00pm	Overview of Project and Project Design Features - Alta Planning + Design
2:00-2:10pm	Break
2:10pm-3:45pm	Walk through Design Questions (Below) - City Staff
3:45-4:00pm	Summarize Conclusions and Recommendations - TJKM

Project Background

- Project was first conceived as part of the City of Palo Alto 2012 Bike Plan
- The project was developed through an extensive outreach process. More than 16 public outreach meetings were conducted for this project during the preliminary design phase (2014-2015) (4 per corridor), along with bike-a-longs, pop up events and similar input. Public input continued during the design phase. Public Input had a significant impact on the design of the project, with many residents providing input on treatment types and locations. One example of this input was the desire from the public to have more trees and greening along the Ross Road corridor Public meetings were well noticed, including online announcements, press, and a mailer to each residence along the corridors affected by the project
- The design (or PS&E) phase of work was based on established design standards, including the CAMUTCD, HDM, FHWA guidebooks, NCHRP Report 672 – Roundabouts: An Informational Guide, and the NACTO Urban Bikeway Design Guide.
- A basic 'template' was established for each treatment type (mini-roundabouts, bulb outs, median islands, speed humps with planted curb extensions, etc.). This process established the required dimensions of each improvement (e.g., lane widths, turning radii, etc.). Then these templates were designed in each proposed location, adapting the design to fit the specific context, but maintaining the basic design requirements. For example, the lane widths and turning radii were established for mini-roundabouts. Depending on the size of the intersection, the size of the circle varied, but the basic design parameters remained the same. Truck turn templates were run on any treatment that impacted the ability for large vehicles to turn to ensure that the requested design vehicles – SU-30 truck, Palo Alto fire trucks and other emergency vehicles – could use the corridor.

- Safety was considered at each step of the design process and evaluated for each treatment type. For example, the use of speed humps alone along Ross Road created a concern because of the presence of rolled curb, creating a potential opportunity for someone to drive over the curb onto sidewalk to bypass speed humps. Curb extensions were added on either side to eliminate this possibility, to reduce vehicle speeds by narrowing the road, and to create an opportunity to add street trees.
- All design decisions were made with comprehensive consultation with the City. This work was organized by the City Project Manager and the City Chief Transportation Official, but included coordination with Public Works, Fire, Green Stormwater Infrastructure team, Utilities, and other individuals.

General Discussion

The meeting began with a general conversation about the issues surrounding this project. Key issues included:

- City of Palo Alto residents have started a Change.org petition to stop the construction of the project. Most significant concerns are with the roundabout at Ross Road and East Meadow Drive.
- The YMCA on Ross Road may be challenging for school buses to access if turns are required. Buses may need to be re-circulated and additional education for bus drivers may need to occur.
- Most of the issues being raised by residents can be categorized as tradeoffs in *function* of the roads; nothing in the design shows any reduction in *safety*.
- There are concerns that individuals are parking on the rolled curb, which is not appropriate, making it appear that the planted curb extensions adjacent to the speed humps stick into the roadway – they are designed to cover the parking lane.

The following design questions were addressed during the review. Each question is addressed in turn with recommendations included.

Mini Roundabout Questions

> *Is a mini-roundabout an appropriate treatment at the intersections shown in the plans? If not, what other treatments do you recommend?*

The group agreed that mini roundabouts are appropriate and frequently used for traffic calming in similar situations elsewhere in the U.S. The group agreed that the specific treatment is a hybrid between a mini-roundabout and a traffic circle, having elements of each. The lack of a fully mountable center island is the only non-standard element of the mini-roundabout, but a decision was made by the City to prioritize providing vegetation within the mini roundabout.

Members of the public have express concern that counts should be conducted at each intersection where a mini-roundabout is planned. NCHRP Report 672 sets general thresholds for single lane roundabouts at 1,000 vehicles per hour, far about the volumes on any of the streets in the study area. The NCHRP report is focused more on full roundabouts, not mini-roundabouts.

During the discussion it was noted that many of the community concerns raised about the mini-roundabout at Ross Road and East Meadow Drive were raised before construction was complete. This including concerns about the edge of road before paving was complete and about the spacing for before striping was completed

Are the design elements of the mini-roundabout within the parameters defined by best practices in mini-roundabout design (i.e. center island diameter and design, circulatory roadway width, splitter island design, bicycle escape ramps where present)?

Each of the elements of the design are consistent with best practices and national guidance. The implementation of these designs during construction was imperfect (i.e., improperly set stones, see below), but each of the elements was designed consistent with best practice.

One question related to whether the lip of the center circle truck apron was too high off of the ground at over 1 inch. Guidance suggest a 3/8" lip and the City has requested that the contractor fit a flush apron at the mini-roundabout at Ross Road and Moreno Avenue. City staff have noticed that this increases encroachment on to the truck apron and increases vehicle speed, reducing the effectiveness of the treatments. Residents have expressed concerns about bicycle safety when kids are riding several abreast, but the group believed this risk to be minimal with the 1-inch lip, now marked with striping and reflectors.

More specifically, should the entire center island and/or splitter islands be fully-traversable? If so, what guidance specifies this?

Technically the splitter islands are traversable and the concrete apron and river stones are also traversable. The manner in which these have been installed may make them appear to be not traversable, but they have been designed to be traversable (see below). The general recommendation was to retain the hybrid mini-roundabout/traffic circle design that includes a planted center circle. Changes in materials may be preferred by the City but are not required.

Are the curb extensions planned on the approaches to many of the roundabouts appropriate? If not, what guidance specifies this?

This design is appropriate and has been used elsewhere in the U.S. Several options were considered for this design and the preferred option was to provide bicycle escape ramps. The curb extension works with City street sweepers.

One alternate that was raised was to make the curb extensions bigger and the splitter islands smaller

Is an SU-30 an appropriate design vehicle for mini-roundabouts located on Local and Collector Streets?

There was agreement during the design process to use the SU-30 as the design vehicle. This is also consistent with the NACTO Urban Design Guide. Other vehicles – especially emergency response vehicles – were also tested. During the design process, the City directed Alta not to consider buses. All the design vehicles could use the mini roundabout according to the design.

At Ross Road and East Meadow Drive, actual experience confirms the design. Fire trucks are able to make every turn. The VTA bus could travel straight on East Meadow Drive and make a right turn, but not a left turn around the roundabout. The current bus route travels straight along East Meadow Drive through the Ross Road intersection. The school bus could only make the straight movement.

There was a general agreement that this is a functional issue, not a safety issue, and that the City can provide information to local organizations like to YMCA to help route buses to their site.

In addition, there was concerns about how a moving truck (WB-50) could access certain streets. There are no areas that are inaccessible due to the existing and proposed mini-roundabouts. However, the City should have ready-to-go information to respond to residents with requests about moving truck access.

Transportation staff will need to develop outreach material and methods to advise the YMCA, residents and other street users of potential trip planning requirements.

Do you have any (other) concerns about the design of the mini-roundabouts?

There were no additional concerns raised.

Palo Alto Staff Recommendations for Mini Roundabouts

Staff is considering making the following modifications to the mini-roundabout design to better facilitate the movement of city buses, school buses, and emergency vehicles. Do these changes seem reasonable?

- *Remove the band of river stones in the island and increase the width of the concrete truck apron*

This was identified as an acceptable change if desired by the City. The review team noted that the stones were not set according to the plans – they are raised above the level of the concrete truck apron and are set unevenly, creating a more substantial elevation change and an appearance that they are not mountable. Proper setting of the stones would make an acceptable and more readily traversed surface. The City may wish to raise this concern with the contractor, at least for future locations. Removing the stones and increasing the width of the apron would also be acceptable if desired by the City but appears to be an excessive cost given the issues raised. If the City believes the contractor cannot deliver the mini-roundabout apron according to specification, they may consider a different treatment, such as stamped concrete.

- *Increase the clearance from the edge of the truck apron to the signs within the center island*

This was agreed to be appropriate. It was unclear during the discussion if the signs were installed according to the plans.

- *Make the noses of the splitter islands fully-traversable rounded concrete (remove river stones)*

As noted above, these designs are traversable but face issues with installation. Options were discussed to use rolled curb or other approaches. Alta will provide alternate designs for the City to consider.

- *Place the YIELD signs so they do not preclude vehicles from mounting the corner curb extensions if necessary*

All agreed that this was appropriate.

- *Install red curb at the roundabout departure areas to prevent parked cars from blocking vehicles from making the left-turn in front of the center island*

Most of the red curb areas are already marked, but these can be checked with the plan and addressed as needed. Where red curb would remove the only parking space left for a home, caution and advance communication with the affected resident was recommended.

Ross Road and East Meadow Roundabout

At the mini-roundabout constructed at East Meadow Drive and Ross Road, sight lines at the northeast and southeast corners of the intersection are obstructed by large hedges (staff is working to trim/thin). Does this concern you? If so, why?

Generally, the members of the group did not see a significant issue given the likely approach speeds. Based on the NCHRP Report 67, at 10 MPH the sight distance needs to be 73.4 feet, which is easily met at all approaches. At 15 MPH, the sight distance needs to be 110.1 feet. Some approaches for the roundabout at Ross/E. Meadow do not meet this higher standard.

The City has the right to clear the corner sight lines and has provided notices to owners that should address this issue, regardless.

Other Questions

Does anything concern you about the design of the West Bayshore Road @ Amarillo Avenue intersection (chicane and median)? Staff has considered removing the chicanes along West Bayshore Road.

This design was of particular interest to the City to provide a means for bicyclists traveling north on West Bayshore to turn on to Amarillo Avenue where the bike lanes end. While the design is appropriate and functional at the posted speed of West Bayshore, speeding on that road could lead to an increased risk of head on collision. Given these concerns, the group agreed with removing this feature. If requested by the City, Alta could also explore adding a median on the far side to adjust the positioning of vehicles traveling in the other direction to be out of the path of travel.

One of the common features along Ross Road and a portion of Amarillo Avenue is a slotted speed hump flanked by planted curb extensions in the parking lanes. Does anything concern you about this design?

This design was vetted extensively with the City and specifically created to add street trees to Ross Road while avoiding the risk of vehicles driving on to rolled curb to go around the speed humps. In a shared street situation Alta recommends that bicyclists take the lane. Bicycling in the parking lane and entering the roadway to avoid cars puts bicyclists out the line of sight of people driving, creates an increased risk of collision. Driving too close to parked cars also increases the risk of dooring. The planted curb extension themselves are about the size of a parked vehicle.

The group agreed that the existing planted curb extensions should remain. If the City believes that residents would generally prefer that future speed humps do not include planted curb extensions, future improvements can be modified accordingly.

Others design issues, concerns or ideas for improvement?

Group members discussed the need to provide information to the public about why mini-roundabouts are recommended for these corridors, including:

Why is the roundabout the best option rather than stop signs? Need a way to articulate this to the public, including messages such as:

- Removal of stop signs reduces the effort and time difference for bicyclists. Less energy expended by maintaining momentum can improve journey time up to 30%.
- Most of the planned roundabouts are at the intersections of existing or planned bikeways, helping to make turns by bicyclists more comfortable.
- Bike boulevards are intended to reduce speeds and attract bicyclists. These are being developed in accordance with City plans.
- Mini-roundabouts can reduce broad side collisions. Two broad side collisions were noted at Ross Road and East Meadow Drive.
- Bicycle left turns are typically safer in roundabouts. While certain members of the public believe that it is unsafe for bikes to share with vehicles, reducing speeds and volumes can create safer shared spaces. There are many examples of success.

Action Items

Based on the discussion, the following actions were agreed to – some noted above:

- Louis Road and East Meadow Drive. There is planned mini-roundabout at this location. VTA routes 88 and 88L turn left at the location and will require a fully traversable median island. Alta will evaluate turning movements and recommend any changes needed to City staff.
- Palo Alto Avenue and Bryant Street. Given the dimensions of this street, the group agreed that it made sense to remove this mini-roundabout. This includes eliminating the north side improvements, remove the mini-roundabout, and adjust the green infrastructure curb extension so it lines up with the curb extension on the southeast corner. Alta will provide options to the City to consider.
- Ross Road and East Meadow Drive. The splitter islands at this location will be reconstructed to ensure they are mountable. Transition striping from the bike lanes on East Meadow Drive are also being extended. For landscaping, the City of Palo Alto has initiated contact with residents to address sight lines.
- West Bayshore Avenue and Amarillo Avenue. Alta will adjust the design of this intersection to remove the chicane on West Bayshore Avenue. The median on Amarillo Avenue will be retained
- Amarillo Avenue: Alta will adjust the design of the remaining speed hump on this corridor to remove the planted curb extension in favor of a speed hump.
- Mini-roundabout design. Alta work with the City to evaluate potential design changes for the upcoming mini-roundabouts, including: (1) reducing the vertical transition of the median splitter islands; (2) identifying an alternate treatment to the river rock on both the splitter islands and the center circle. The City will communicate with the construction contractor about the proper installation of river rock and any modifications required at already installed mini-roundabouts.

Carnahan, David

From: Rebecca T <rcuthomas@gmail.com>
Sent: Saturday, May 26, 2018 10:35 AM
To: Council, City
Subject: Bike Boulevard Project question

Thank you to involved planners for coming to Ohlone Elementary School on Friday morning to provide information about the Bike Boulevard Project. I appreciated getting a copy of the FAQ. It's useful to understand the FHWA information about safety of roundabouts and to understand the various features being implemented.

Will the finished bike boulevard have posted lower speed limit signs, saying something like, "Speed Limit 15MPH When Bicycllists Present" or 10MPH or whatever the studied maximum safe speed should be? Without this, many drivers will not understand that vehicles and bicycles are intended to operate *in the same lane* *at low speeds.* If drivers try to drive at posted 25MPH speeds (or higher) in the presence of chicanes, bulbouts, and roundabouts, then they will intimidate slower bicyclists to ride in the parking zone, causing bicyclists to weave in and out to avoid parked cars.

Thank you!

Rebecca Thomas
Midtown parent and bicyclist

Carnahan, David

From: Amy Connolly <amycarin@hotmail.com>
Sent: Thursday, May 24, 2018 2:13 PM
To: Council, City
Subject: Delay in Emergency Response Time Concern

Dear Palo Alto City Council,
Is the Council aware of the hazard currently being created by the City at the intersection of Greer Road and Amarillo Avenue?

The roundabout traffic pattern being installed has created a small space that will require Fire Trucks responding to emergencies to perform 3 point turns instead of driving straight. Fire Department Vehicles/personnel are often the first on scene for medical emergencies where every second counts. As a former Emergency Department Nurse, this will present delays in response time to medical emergencies that require time sensitive life saving intervention.

Thank you in advance for reevaluating this intersection and your advocacy for the Fire Department and community.

With Much Appreciation
Amy Connolly

Carnahan, David

From: Andrea Gandolfo <amgando@gmail.com>
Sent: Tuesday, May 29, 2018 10:24 AM
To: Council, City
Subject: traffic and bike issues

I am not comfortable posting online my opinions about all the work that has been done, but as a Ross Road resident, overall I approve.

I do think there is a cultural/systemic problem of parents who insist on driving their children to school. My hope is with all the City's work and education/encouragement for biking and walking as opposed to driving this all will work out well.