Architectural Review Board
Staff Report (ID # 7936)

Report Type:	Study Session	**Meeting Date:**	5/4/2017

Summary Title: Highway 101 Pedestrian/Bicycle Overpass and Adobe Creek Reach Trail Project

Title: Highway 101 Pedestrian/Bicycle Overpass and Adobe Creek Reach Trail Project [17PLN-00086]: Preliminary Architectural Review of a Proposal for an Overpass Structure Near San Antonio Road, and Trail, and Reconfiguration of the Adjacent Parking Lot at 3600 West Bayshore Road. Environmental Assessment: Not a Project. Formal Application will be Subject to CEQA and NEPA Review. Zoning Districts: Public Facilities PF (D), ROLM, GM. For more information, contact the project planner Claire Hodgkins at claire.hodgkins@cityofpaloalto.org.

From: Hillary Gitelman

Recommendation
Staff requests the Architectural Review Board (ARB) conduct a preliminary review of the proposed project and provide comments to staff. No formal action may be taken at a preliminary review; comments made at a preliminary review are not binding.

Report Summary
Staff seeks preliminary feedback from the ARB concerning a proposal to construct a Highway 101 Multi-Use Path Overcrossing between the East Oregon Expressway and San Antonio Road overpasses of Highway 101. The basic parameters and design of the bridge have been established and ARB's role in reviewing the project is provided in the analysis section. The overcrossing would replace the existing seasonal Benjamin Lefkowitz Highway 101 underpass in order to provide year-round connectivity between residential and commercial properties west of Highway 101 and the Palo Alto Baylands Nature Preserve, East Bayshore Business Park, and the regional Bay Trail network of multi-use trails east of Highway 101. The proposed project spans multiple Zoning Districts, including the Pubic Facilities Zone with a Site and Design Review Overlay (PF[D]), the Public Facilities (PF) Zone, the Research Office and Limited Manufacturing (ROLM) Zone, and the GM Zone. The Comprehensive Plan Land Use Designation for the site is

City of Palo Alto
Planning & Community Environment
250 Hamilton Avenue
Palo Alto, CA 94301
(650) 329-2442

Light Industrial and Research Office Park on the west side of Highway 101 and Publicly Owned Conservation Land on the East side of Highway 101.

There are four distinct sections of the overcrossing that are discussed in more detail throughout this report. These are referred to as the Principal Span Structure, the West Approach Structure, the East Approach Structure and the Adobe Creek Bridge. These distinct sections of the overcrossing are designed using different structure types that are responsive to geometric and site constraints and ensure the structural integrity of the bridge based on the proposed span and alignment of that section. These separate sections are designed to transition seamlessly to present a single cohesive overcrossing.

The proposed project also includes a new trailhead connection to the Adobe Creek Bridge and East Approach Structure from East Meadow Drive that follows the existing Santa Clara Valley Water District (SCVWD) maintenance road, herein referred to as the Adobe Creek Reach Trail. The project also includes the minor reconfiguration of Google's private parking lot at 3600 West Bayshore Road to accommodate the East Approach Structure as well as connections to regional trails, drainage, site amenities, landscaping and lighting improvements.

A map showing the location of the proposed project is included in Attachment A. The proposed project plans are provided in Attachment E.

Background

Project Information

Owner:	City of Palo Alto
Civil Engineer/ Architect:	Roy Schnabel, Principal, Biggs Cardosa Associates, Inc./ FMG
Representative:	Elizabeth Ames, Public Works Department, Sr. Project Manager
Legal Counsel:	City Attorney

Property Information

Address:	Approximately 0.3 miles north of San Antonio Road,
Neighborhood:	Palo Verde and Adobe Meadow/Meadow Park Neighborhoods
Lot Dimensions & Area:	127-10-100 (89,941 sf); 127-56-006 (38,619 sf); 008-05-005 (44,645,693); 127-10-076 (89,941 sf)
Housing Inventory Site:	Not Applicable
Located w/in a Plume:	Not Applicable
Protected/Heritage Trees:	Not Applicable
Historic Resource(s):	Not Applicable
Existing Improvement(s):	Crosses existing roadways, including East and West Bayshore Road frontages and Highway 101; crosses over, and requires

	reconfiguration of, the existing Google parking lot; and follows an existing Santa Clara Valley Water District (SCVWD) maintenance road on the west side of Highway 101 out to East Meadow Drive.
Existing Land Uses:	The majority of the project spans Caltrans right-of-way over Highway 101 or City right-of-way across the Bayshore Road frontages. The overcrossing approaches would be located on publicly owned conservation land on the east side of Highway 101 and land designated as Research Office on the west side of Highway 101. Most of the western approach structure, the Adobe Creek Trail bridge, and the Adobe Creek trail improvements would occur over and within private commercial property, City property and Santa Clara Valley Water District (SCVWD) property adjacent Adobe Creek, which crosses land designated in the Comprehensive Plan as Research Office and Light Industrial but that is currently used as a SCVWD access road.
Adjacent Land Uses & Zoning:	North: Research Office, Caltrans right-of-way, and Publicly Owned Conservation land uses (ROLM and PF[D] Zone Districts) West: Research Office land use and some multi-family residential land uses (ROLM Zone District) East: Publicly Owned Conservation Land (Palo Alto Baylands) (PF[D] Zone District) South: Office/manufacturing Uses (GM Zone) on the east side of Highway 101; Caltrans and City street right-of-way and Research office and Research office/City of Palo Alto Utilities Engineering offices on the west side of 101 (ROLM (D)(AD) Zone District)

Aerial View of Property:

Land Use Designation & Applicable Plans

Zoning Designation:	PF (D), PF, ROLM, GM
Comp. Plan Designation:	The Comprehensive Plan Land Use Designation for the site is Light Industrial and Research Office on the west side of Highway 101 and Publicly Owned Conservation Land on the east side of Highway 101.
Context-Based Design Criteria:	Not Applicable
Downtown Urban Design Guide:	Not Applicable
South of Forest Avenue Coordinated Area Plan:	Not Applicable
Baylands Master Plan:	Applicable
El Camino Real Design Guidelines (1976 / 2002):	Not Applicable
Bicycle & Pedestrian Transportation Plan	Applicable
Other:	The pedestrian and bicycle overcrossing alignment must comply with applicable Caltrans and CPUC clearances. The Adobe Creek Reach Trail path located

	within SCVWD property must conform to Santa Clara County's Uniform Interjurisdictional Trail Design, Use, and Management Guidelines.
Proximity to Residential Uses or Districts (150'):	The overcrossing is not within 150 feet of residential uses or districts. However, the proposed project includes minor improvements to an existing Santa Clara Valley Water District (SCVWD) levee/maintenance road adjacent and east of Adobe Creek, ending at East Meadow Drive, which would be known as the Adobe Creek Reach Trail. This trailhead is located within 150 feet of multi-family residential uses on the west side of Adobe Creek and would become the main trailhead access point from the west approach.
Located w/in the Airport Influence Area:	Not Applicable
Special Setback	There is a special setback requirement of 24 feet along West Bayshore Road.
Utility Easement/Corridor	High voltage electric overhead and high pressure gas main PG&E utility easements, City utility easements, U.S. Highway 101, and SCVWD Rights-of-Way /corridors

Prior City Reviews & Action

City Council: Council conducted a hearing on 11/7/16; Staff Report link: http://www.cityofpaloalto.org/civicax/filebank/documents/54482

During the Council hearing Council approved a motion to approve an increase to the budget for the Adobe Creek/Highway 101 Pedestrian Overcrossing Project, Capital Improvements Program (CIP) Project PE-11011; accept the $1 million contribution from Google to use towards contingency funds; and to incorporate "enhanced amenities" for an additional cost of $0.13 million.

Prior Council Actions are provided on the following Project Website:http://www.cityofpaloalto.org/gov/topics/projects/facilities/bridge_project/default.asp

PTC:	None
HRB:	None
ARB:	August 7, 2014 Study Session of Design Principles https://www.cityofpaloalto.org/civicax/filebank/documents/43282

	No action was taken during this study session.
PRC:	The Parks and Recreation Commission held a study session on March 28, 2016; Report link: http://www.cityofpaloalto.org/civicax/filebank/documents/56624 No action was taken during this hearing. Commissioners primarily commented on the lighting, landscaping, and overlook, as encouraged staff to explore other options for material of the pathway connecting the Adobe Creek Bridge and the entrance from East Meadow drive.

Project Description

The project description is provided as Attachment B to this report. Attachment B also provides a complete summary of design process efforts to date and highlights the goals and constraints of the project. As noted previously, the proposed project includes four sections of the overcrossing, including the Principal Span Structure, the West Approach Structure, East Approach Structure, and the Adobe Creek Bridge, as described in more detail below. The Project Plans in Attachment E provide images of the concept design and the locations for application of material in addition to landscape concepts. As shown in the plans, other pedestrian friendly amenities such as lighting, signage, benches, bike racks, and drinking fountains are proposed as part of the overcrossing and trail head design. The prefabricated steel surfaces for all spans may be painted or self-weathering.

Principal Span Structure

The Principal Span Structure is perpendicular to and spans Highway 101 and East and West Bayshore Roads. It consists of three simply-supported steel truss spans, spanning 165 feet across Highway 101 and 60 and 70 feet, respectively, across West and East Bayshore Roads. The minimum height of the principal span bowstring truss structure is 18.5 feet above the highway surface and 17 feet above the East and West Bayshore Roads per applicable City and Caltrans clearance requirements. The bowstring truss arch reaches a top height of approximately 40 feet above the center highway surface. There is an eight foot vinyl clad safety fence located on the outside edges of this span. The safety fence includes 1 inch square opening per Caltrans standards. The proposed project is 14 feet wide across the Principal Span Structure.

West Approach Structure

The alignment of the west approach structure consists of an approximately 115 degree curve that directs pedestrian/bicycle traffic from along West Bayshore Road, over the Google parking lot, and to the Principal Span Structure. The West approach consists of a four span, 2'6" deep reinforced concrete slab superstructure supported by 2'6" X 5'0" rectangular columns supported on large diameter pile shafts. The span lengths vary between approximately 40 to 50 feet. The eight foot vinyl clad safety fencing over Highway 101 portion of the bridge reduces to 4 foot high along the concrete approach ramps.

East Approach Structure

The alignment of the East Approach Structure consists of an approximately 168-degree compound curve that directs pedestrian/bicycle traffic from the Principal Span Structure, over the Baylands, and back around to connect to the San Francisco Bay Trail. The east approach structure consists of a seven span, 2'6" deep reinforced concrete slab superstructure supported by 2'6" X 5'0" rectangular columns supported on large diameter pile shafts, consistent with the design of the West Approach Structure. The span lengths will vary from 40 to 50 feet long. The safety railings will be 4' high on the East Approach Structure. The East Approach will include an overlook between Bents 10 and 11 in order to provide trail users a viewing point toward the Baylands without impeding pedestrian and bicycle traffic. It will also include seating to provide users a place to pause and rest.

Adobe Creek Bridge

The Adobe Creek Bridge will connect the West Approach and the Adobe Creek Reach Trail. It consists of a 140 foot long, 14 foot wide prefabricated steel Pratt truss spanning over the confluence of Barron and Adobe Creeks. The top chord of the steel truss will serve as the top chord of the 4 foot high safety railing of the structure. The abutments will be concrete, supported by large diameter piles.

Adobe Creek Reach Trail

The Adobe Creek Trailhead/West Plaza is approximately 1,300 sf and connects the proposed Adobe Creek Bridge with the proposed Adobe Creek Reach Trail. The plaza provides an access option to West Bayshore Road as well as an access option to continue onto the Adobe Creek Reach Trail, which will follow the Adobe Creek maintenance road out to East Meadow Drive. A gravel surface is proposed at this time for the Adobe Creek Reach trail between the plaza and East Meadow Road but an alternative may be to consider impervious pavement at an additional cost. The Adobe Creek Reach Trail is approximately 620 feet in length and approximately 16-18 feet wide.

The plaza along West Bayshore Road is approximately 1,300 square feet and includes an 8-foot wide x 115-foot long access ramp/raised sidewalk that parallels and connects to the bicycle path along West Bayshore Road. The new fence along the Adobe Creek Reach Trail is proposed to mount on the existing concrete barrier along Adobe Creek to a minimum height of 4 feet above the trail surface to meet ADA requirements.

The Project Plans in Attachment E provide images of the concept design and the locations for application of material. The prefabricated steel surfaces may be painted or self-weathering. As shown in the plans, other pedestrian friendly amenities such as lighting, signage, benches, bike racks, and drinking fountains are proposed as part of the overcrossing and trail head design. Additional graphics showing the photometrics for the proposed lighting plan, the tree removal and planting plan, trail fencing, and an alternative concept for the East Approach Structure that includes a traffic circle at the entrance were not available during the writing of this report but will be provided at the ARB meeting.

<u>Entitlements, Findings, and Purview of the Project</u>

Per Council direction, preliminary drawings representing about 15% of the design concept was presented to the City Council in November 2016. Council selected the design presented herein and directed staff to complete the environmental assessment and advance the drawings to 35% of the final design concept. The plans included for the ARB's review still represent about 15% of the design concept. Staff is requesting the ARB's input on these plans prior to advancing them to 35% of the design concept for the formal application submittal. In addition to the ARB, the Planning and Transportation Commission (PTC) will have an opportunity to conduct a preliminary review of these same plans prior to submittal of the formal application.

Following completion of these preliminary reviews, the applicant would submit a formal application for Site and Design review of the proposed project. Site and Design applications are reviewed by the PTC and ARB, and recommendations are forwarded to City Council for a final action. Site and Design projects are evaluated against specific findings that include both the ARB findings (ARB purview) and Site and Design findings (PTC purview), which are included in Attachments C and D respectively.

The proposed project would also require a Park Improvement Ordinance, which would be reviewed for recommendation by the Parks and Recreation Commission and forward to City Council for final action.

Analysis

The purpose of the proposed project is to better connect the West Bayshore commercial and residential areas to the many multi-use trails in the Baylands on the east side of Highway 101 in order to reduce single-occupancy vehicle trips and encourage walking, biking, and other alternate forms of transportation to this area.

The bridge alignment, height, width, and structure type has been determined in coordination with Council. Also, art location and concepts will be decided upon by the Art Commission. The ARB's role in this project is to comment on the following design features:

- The type of finish of the bridge structure, which could be either self-weathering or painted
- Refinements to the three trail heads at East Meadow Drive, East Bayshore Road, and West Bayshore Road
- The addition/design of the overlook
- Landscaping
- Lighting
- The galvanized railing and vinyl clad fencing
- The style and type of signage
- The west approach ramp retaining wall finish
- The Location of amenities (benches, drinking fountains, bike racks, trash receptacles) and signage at overlook and trailheads

Neighborhood Setting and Character

The location of the overcrossing is designed to connect existing roadways and trails to provide a collective, functional system. It creates a connection for the many adjacent commercial centers and many newer multi-family housing units in the area to the existing bike and pedestrian trails in the Baylands. This connection would encourage pedestrian and bicycle activity to access this open space area and the trails beyond, reducing single-occupancy vehicle trips.

Zoning Compliance[1]

Staff has completed a basic review of the proposed project's consistency with Title 18 of the Palo Alto Municipal Code and will complete a more thorough review of the proposed project's consistency as part of the formal application. The proposed project is not subject to any interim ordinances or moratoriums. The proposed project spans multiple parcels located within multiple zone districts. The proposed Adobe Reach Trail is located within the GM, PF, and ROLM Zone Districts. The Adobe Creek Bridge is located within the ROLM Zone District. The West Approach Structure is located within the ROLM and PF Zone District. The Principal Span Structure is located within the PF Zone District and the East Approach Structure is located within the PF(D) Zone District. While this project technically requires that each portion of the bridge be developed based on its respective zoning, this is impractical given the purpose and design of the proposed infrastructure improvement. Staff will evaluate options to ensure the design meets the intent and objectives of the code, the comprehensive plan, the Baylands Master Plan, and other city policies. However, it is likely the project will require variances or other discretionary approvals or legislative changes to formally entitle the project.

Consistency with the Comprehensive Plan[2]

The following Comprehensive Plan programs, goals and policies relate to the project:

Policy T-1: Make land use decisions that encourage walking, biking, public transit use.

Goal T-3: Facilities, services and programs that encourage and promote walking and bicycling.

Goal T-14: Improve pedestrian and bicycle access to and between local destinations, including public facilities, schools, parks, open space, employment districts, shopping centers, and multi-model transit stations.

Policy T-17: Increase cooperation with surrounding communities and other agencies to establish and maintain off-road bicycle and pedestrian paths and trails utilizing creek, utility, and railroad rights-of-way.

Program T-19: Encourages the development of bicycle and pedestrian facilities linking trips to parks, schools, retail, centers, and civic facilities, which enables

[1] The Palo Alto Zoning Code is available online: http://www.amlegal.com/codes/client/palo-alto_ca

[2] The Palo Alto Comprehensive Plan is available online: http://www.cityofpaloalto.org/gov/topics/projects/landuse/compplan.asp

and encourages residents and visitors to bicycle or walk for discretionary trips.

Policy T-25: When constructing or modifying roadways, plan for usage of the roadway space by all users, including motor vehicles, transit vehicles, bicyclists, and pedestrians.

Policy T-26: Completed development of the Bay trail and Ridge Trail in Palo Alto

Policy T-42: Address the needs of people with disabilities and comply with the requirements of the Americans with Disabilities Act (ADA) during the planning and implementation of transportation and parking improvements.

Policy C-22: Design and construct new community facilities to have flexible functions to ensure adaptability to the changing needs of the community.

Policy L-71: Strengthen the identity of important community gateways, including the entrances to the City at Highway 101.

Program L-72: Develop a strategy to enhance gateway sites with special landscaping, art, public spaces, and/or public buildings. Emphasize the creek bridges and riparian settings at the entrances to the City over Adobe Creek and San Francisquito Creek.

Policy N-1: Manage existing public open space areas … in a manner that meets habitat protection goals, public safety concerns, and low impact recreation needs.

Consistency with the Baylands Master Plan and Baylands Design Guidelines[3]

The following Baylands Master Plan goals, policies and programs relate to this project:

Policy 3: Expand Bicycle and pedestrian activities while reducing vehicle traffic in the Baylands as far as possible.

Policy 13: Follow Guidelines established in the Site Assessment and Design Guidelines, Palo Alto Baylands Nature preserve published in 2005.

Policy 14: Comply with Airport Comprehensive Land Use Plan (CLUP) adopted by the Santa Clara County Airport Land Use Commission (ALUC).

The proposed project would be located at the border of one of the two areas identified as “The Natural Unit” in the Palo Alto Baylands. The proposed project is consistent with Natural Unit Policy 1, “Maintain the trails described in the access and circulation section.”

[3] Palo Alto Baylands Master Plan is available online:
http://www.cityofpaloalto.org/gov/depts/pln/advance/area/baylandsmp.asp

The Baylands Master Plan also notes that the original vision for a natural environment was ample pedestrian and bicycle trails that link to regional trails with a limited role for automobiles.

Consistency with the Bicycle and Pedestrian Transportation Plan[4]

The following Bicycle and Pedestrian Transportation Plan objectives relate to this project:

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.

A key strategy of Objective 2 is to remove and/or upgrade substandard bike lanes and trail crossing barriers to improve safety and convenience and key strategies of Objective 3 include prioritizing enhancements to the Bay to Ridge trail corridor and expanding trail networks along creeks through partnership projects with regional agencies including the SCVWD. The project is consistent with these strategies and objectives because it provides a bicycle/pedestrian connection to the Baylands for residents and commercial developments on the East side of Highway 101, discouraging the use of single-occupancy vehicle trips to cross over the highway in order to take year-round advantage of this area. It also improves the existing bike lanes along East and West Bayshore Road, better connecting them to trails and residential/commercial areas. The proposed project is comprised of both the top recommended project under the across barrier connections category (ABC-1 Adobe Creek Highway 101 Overcrossing) and one of the top recommend project under the trails category (TR-2 Adobe Creek Reach Trail) identified in Table 7-1 of the Bicycle and Pedestrian Transportation Plan.

Multi-Modal Access, Circulation, and Parking

The project improves multi-modal circulation in all directions with three additional trail heads (one at the Bay Trail, and two at Adobe Creek Reach Trail). A grade-separated bicycle/pedestrian crossing of Highway 101 could serve a variety of users for commute, utilitarian, and recreational trips. The overpass would be accessible for bicycles, pedestrians, skaters, strollers, wheelchairs and power-assisted mobility devices, serving a cross-section of residents from infants to the elderly and those with pets. Therefore, the design of the over crossing must be wide enough to provide maneuvering space for pedestrians and bicyclists and attempt to slow bicyclists so not to speed. The design should separate directions of travel and include signage identifying desired user behavior (e.g., slower traffic keep right).

[4] Palo Alto Bicycle and Pedestrian Transportation Plan is available online: http://www.cityofpaloalto.org/civicax/filebank/documents/31928

There are no at-grade crossing facilities on East and West Bayshore Roads proposed for the project. However, signage could be provided to alert both motorists and pedestrians to the presence of a crossing from the northbound bicycles traveling on West Bayshore Road to the overcrossing trail head. An at-grade crossing on East Meadow Drive to the new Adobe Creek Reach Trail head is proposed to provide a better alternative to access the overcrossing than from West Bayshore Road. The proposed project eliminates the need for the existing sidewalk located on the vehicle bridge over Adobe Creek; therefore, a dedicated southbound bike lane is proposed for West Bayshore Road.

Because the proposed project would reduce single-occupancy vehicle trips by providing a multi-use connection between commercial and residential areas and the Baylands, staff is not preparing a traffic study. In addition, no new public parking is required as a result of the proposed project. Per the Transportation Division's request, the driveway and parking has been reconfigured in the private Google parking lot at 3600 West Bayshore Road to improve circulation exit/entrance and avoid conflicts with the overcrossing column supports. There would be no net loss/increase of parking stalls. Although some trees would need to be removed, these trees would be replaced. The project engineer is working with the City's landscape architect to balance the tree number with storm water drainage needs. The reconfiguration over the parking layout shifts parking stalls towards the existing building, away from the southern corner of the site owned by the City, to accommodate the raised sidewalk and accessible landing of the overcrossing approach ramp. The landscape area around the parking lot may also serve as a bioretention area and potential site for a future storm pump facility in the southern end of the parking lot.

Lighting and Signage

The LED lighting fixtures shown in Attachment E are on the perimeter of the overcrossing and the approach ramps. Concept ideas to mount light fixtures on the railing or fencing are being explored for the principal span. The design intent is to reduce "spillover" glare, particularly upward toward the sky and limit "spillover" outward toward the highway, frontage roads and riparian areas. The Adobe Reach Trail will also serve as a SCVWD maintenance road and will not have lighting along this segment, consistent with the SCVWD standards. A photometric study will be required as part of the formal submittal. The ARB's input on the proposed lighting design for the different spans is requested.

Wayfinding and interpretive signage will be with the style and message of Baylands Preserve signage.

Environmental Review

This is a preliminary review process in which board members may provide comment, but no formal action will be taken. Therefore, no review under the California Environmental Quality Act (CEQA) is required at this time. A full review under both CEQA and the National Environmental Policy Act (NEPA) would be initiated with the formal filing for a development

application. The proposed project would be subject to NEPA, in addition to CEQA, because it may involve the use of federal funds administered by the Federal Highway Administration.

Public Notification, Outreach & Comments

The Palo Alto Municipal Code requires notice of this public hearing be published in a local paper and mailed to owners and occupants of property within 600 feet of the subject property at least ten days in advance. Notice of a public meeting for this project was published in the Palo Alto Weekly on April 21, 2017, which is 13 days in advance of the meeting. Postcard mailing occurred on April 25, 2017, which is 10 days in advance of the ARB meeting.

Public Comments

Public comments received during the City's Parks and Recreation Commission March 2017 study session included the desire to complete a functional, cost-effective bridge as soon as possible, consideration to enhance the site vegetation within the Baylands, and requests for the public art component of the project to be bird friendly, to not have an overlook because it may not be used, and a request for a dog drinking fountain. Some public comments sent to commissioners prior to the meeting indicated that the Pope/Chaucer and Newell Road Bridge projects should be built first.

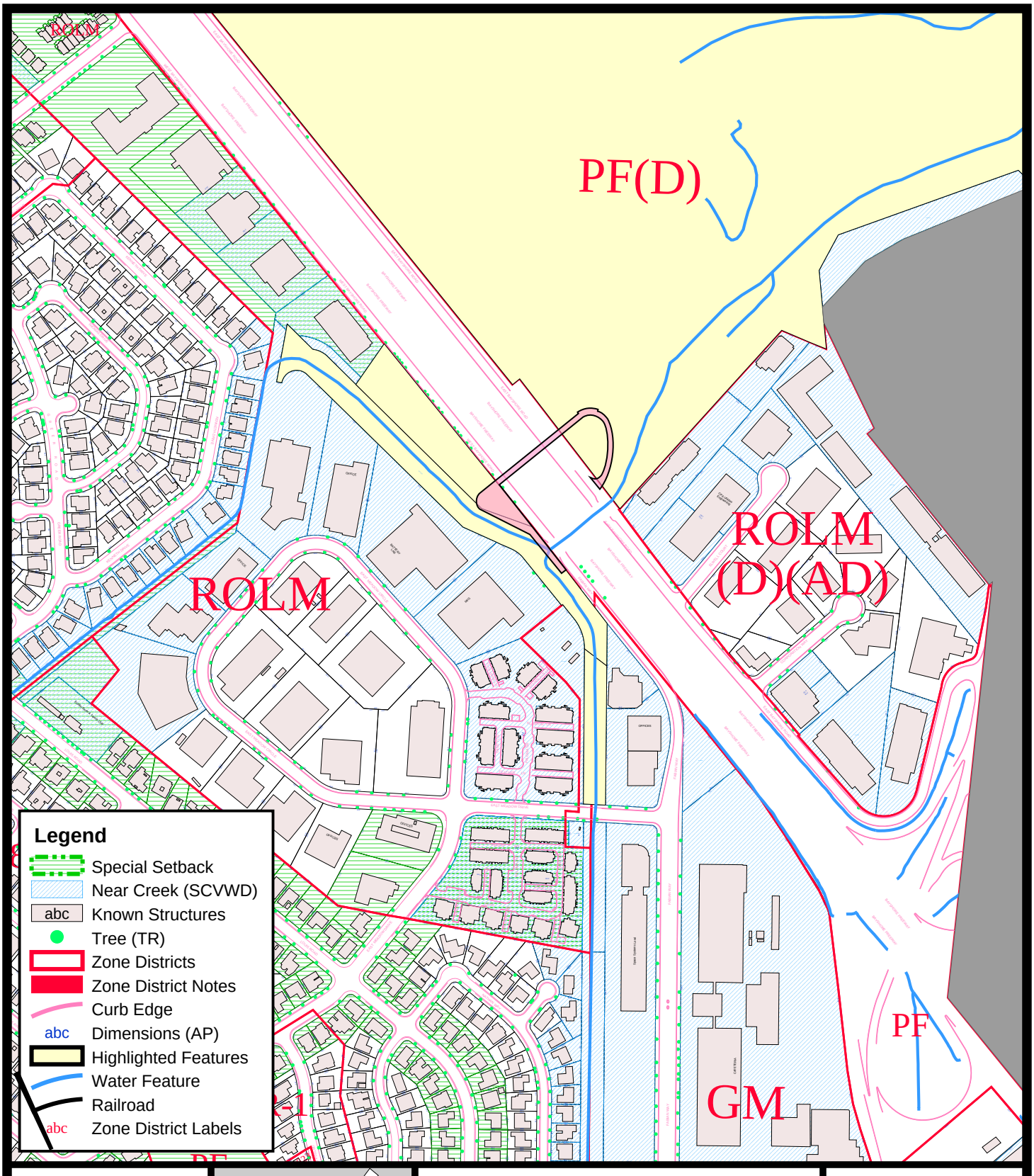
Report Author & Contact Information
Claire Hodgkins, Associate Planner
(650) 329-2116
Claire.hodgkins@cityofpaloalto.org

ARB[5] Liaison & Contact Information
Jodie Gerhardt, AICP, Planning Manager
(650) 329-2575
jodie.gerhardt@cityofpaloalto.org

Attachments:

- Attachment A: Location Map (PDF)
- Attachment B: Project Description (DOC)
- Attachment C: Architectural Review Findings (DOCX)
- Attachment D: Site and Design Objectives (DOCX)
- Attachment E: Project Plans (DOCX)

[5] Emails may be sent directly to the ARB using the following address: arb@cityofpaloalto.org



The City of Palo Alto

Highway 101 Multi-Use Path Overcrossing

This map is a product of the City of Palo Alto GIS

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HIGHWAY 101 MULTI-USE PATH OVERCROSSING PROJECT AT ADOBE CREEK
WRITTEN PROJECT DESCRIPTION

PROJECT DESCRIPTION:

The proposed Highway 101 Multi-Use Path Overcrossing (Overcrossing) is located in the City of Palo Alto in Santa Clara County, between the East Oregon Expressway and San Antonio Road overpasses of Highway 101, and will replace the existing seasonal Benjamin Lefkowitz Underpass of Highway 101 located within the Adobe Creek corridor. The grade-separated crossing will provide year-round connectivity from residential and commercial areas west of Highway 101 to the Palo Alto Baylands Nature Preserve (Baylands), East Bayshore Business Park area, and the regional Bay Trail network of multi-use trails east of Highway 101. The project will include a new bridge structure over Highway 101 and West and East Bayshore Roads, a trail connection along Adobe Creek to East Meadow Drive, sidewalk improvements along West Bayshore Road, and landscaping and habitat restoration within the Baylands and along the Adobe Creek riparian corridor. The project lies primarily within City and Caltrans rights-of-way, although the south/west project area includes Santa Clara Valley Water District property and private property owned by Google.

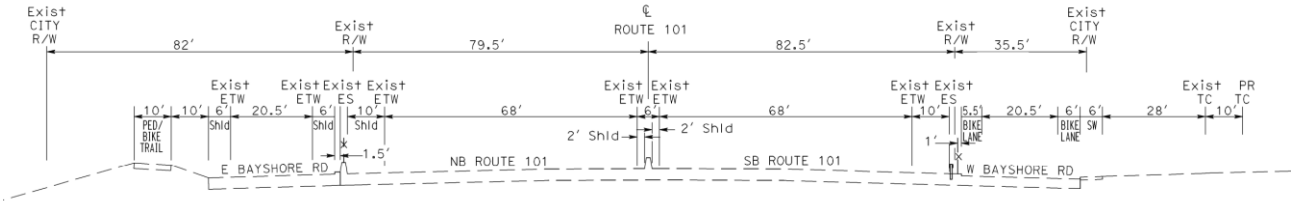
The proposed Overcrossing will consist of multiple structure types in order to maximize the benefits of the different structure types for the various constraints present in the project. The Overcrossing structure is divided into the following four major elements:

1. **Principal Span Structure:** Three span structure over Highway 101 and East and West Bayshore Roads
2. **West Approach Structure:** Multi-span structure located west of West Bayshore Road
3. **East Approach Structure:** Multi-span structure located east of East Bayshore Road
4. **Adobe Creek Bridge:** Simple span crossing of Adobe Creek west of West Bayshore Road

STRUCTURE DESCRIPTION:

PRINCIPAL SPAN STRUCTURE

The Principal Span Structure is set to a straight alignment that is essentially perpendicular to the Highway 101 and Bayshore Road alignments. It consists of three simply-supported steel truss spans spanning across West Bayshore Road, Highway 101, and East Bayshore Road. At this location, Highway 101 is a 12-lane highway with a 162-foot wide right-of-way (See Figure below). East Bayshore Road consists of two travel lanes with a 20.5-foot wide traveled way and two 6-foot shoulders. West Bayshore Road consists of two travel lanes with an approximately 20.5-foot wide traveled way and a 5.5-foot shoulder and 6-foot bicycle lane.



The span over Highway 101 will consist of a 165-foot long, simply-supported prefabricated steel bowstring truss. The bowstring truss is able to achieve the long clear span while keeping the profile depth from the top of deck to bridge soffit to a minimum. The adjacent side span clear-spanning over West Bayshore Road will consist of a 60'-0" long prefabricated steel Pratt truss. The adjacent side span clear-spanning over East

Bayshore Road will consist of a 70-0" long prefabricated steel Pratt truss. All spans will accommodate a 12-foot clear width pathway.

Bents under the Principal Structure spans will consist of 2-foot thick non-skewed concrete pier walls on cast-in-drilled-hole (CIDH) pile foundations. In order to reduce traffic control requirements within Highway 101, the pier walls adjacent to Highway 101 (Bents 6 and 7) will be founded on a concrete pile cap supported by CIDH piles located within the medians between Highway 101 and East and West Bayshore Roads. The concrete pier walls supporting the other ends of the steel Pratt trusses (Bents 5 and 8) will be founded on a concrete pile cap which is supported by CIDH piles. Pier walls at Bents 5 and 8 will support both the steel Pratt trusses of the Principal Span Structure and the end of the West and East Approach concrete slab spans.

Architecturally enhanced safety railings will be provided the full length of the Principal Span Structure. The railings will consist of 8-foot tall galvanized welded wire safety fencing.

WEST APPROACH STRUCTURE

The alignment of the West Approach Structure consists of an approximately 115 degree curve that directs pedestrian/bicycle traffic from along West Bayshore Road, over the Google parking lot, and to the Principal Span Structure over Highway 101. The alignment closely abuts the adjacent Barron Creek to enable retention of all parking spaces with in the Google parking lot and to provide the maximum elevation gain between the adjoining Principal Span Structure and the Adobe Creek Bridge crossing.

The West Approach Structure consists of a four span, 2'-6" deep reinforced concrete slab superstructure supported by 2'-6" x 5'-0" rectangular columns supported on large diameter Type II CIDH pile shafts. The span lengths will vary from 40 to 50 feet long, resulting in a minimum span-to-depth ratio of 0.050. The columns will be architecturally enhanced. The abutment will consist of a reinforced concrete seat-type abutment supported by a large diameter CIDH pile. All spans will accommodate a 12-foot clear width pathway.

Architecturally enhanced safety railings will be provided the full length of the West Approach Structure. The railings consist of 4-foot tall galvanized safety fencing and will include a small concrete curb at the edge of the pathway to collect rain water.

EAST APPROACH STRUCTURE

The alignment of the East Approach Structure consists of an approximate 168-degree compound curve that directs pedestrian/bicycle traffic from the Principal Span Structure, over the Baylands, and back around to conform at the San Francisco Bay Trail.

The East Approach Structure consists of a seven span, 2'-6" deep reinforced concrete slab superstructure supported by 2'-6" x 5'-0" rectangular columns supported on large diameter Type II CIDH pile shafts. The span lengths will vary from 40 to 50 feet long, resulting in a minimum span-to-depth ratio of 0.050. The columns will be architecturally enhanced. The abutment will consist of a reinforced concrete seat-type abutment supported by CIDH piles. All spans will accommodate a 12-foot clear width pathway.

Bent 8 supports both the end of the concrete slab of the East Approach Structure and the end of the steel Pratt truss span of the Principal Span Structure.

Architecturally enhanced safety railings will be provided the full length of the East Approach Structure. The railings will be 4-foot tall galvanized safety fencing and will include a small concrete curb at the edge of the pathway to collect rain water.

An overlook area consisting of an extension of the reinforced concrete slab will be located between Bents 10 and 11 in order to provide the trail users an opportunity to pause, rest and view the adjacent Baylands without impeding pedestrian and bicycle through traffic. The architecture of the overlook will extend from the main bridge structure elements including railings and concrete facing textures and colors. The overlook will be decked with a wood finish to make the area more distinguishable from the main pathway and to give

it some warmth in texture and color. The decking and the bench elements could potentially be constructed from the existing timber decking being removed from the adjacent Baylands Boardwalk project that can be recycled, refinished and repurposed as part of the Overcrossing Project. Amenities such as benches and informational/educational signage will also be located on the overlook to further enhance the experience for the users. Benches will be located along the overlook to allow users to rest and/or view the surrounding vistas of the Baylands.

ADOBE CREEK BRIDGE

The Adobe Creek Bridge consists of a 140-foot long prefabricated steel Pratt truss, spanning over the confluence of Barron and Adobe Creeks, adjacent to the existing Adobe Creek Bridge (Bridge No. 37C-0060) along West Bayshore Road. The bridge will accommodate a 12-foot clear width pathway allowing for travel in both directions.

The top chord of the steel truss will serve as the top chord of the 4 foot high safety railing for the structure.

The abutments will consist of concrete seat type abutments supported by large diameter CIDH piles.

ADDITIONAL PROJECT ELEMENTS:

WESTERN APPROACH ACCESS

A pedestrian access ramp has been incorporated into the Western Approach Structure between the Google property (3600 West Bayshore Road) and Adobe Creek Bridge to provide continuous access for pedestrians along West Bayshore and access to the Overcrossing. For northbound pedestrians along West Bayshore Road the access structure can reduce the length of travel by roughly 500 feet. This access structure also provides equal access to mobility impaired trail users and provides a pedestrian bypass allowing the existing bike lane along West Bayshore road to be made continuous across the existing Adobe Creek Bridge. It also provides a functional ADA compliant alternative access which can be used as a primary ingress/egress if and when the SCVWD closes the trail access area for their channel sedimentation maintenance.

STRUCTURE LIGHTING

Lighting design will be provided for the Overcrossing that contributes to the project goals of providing connectivity while addressing environmental concerns. The Overcrossing paths are to be illuminated during night hours to support pedestrian and bicycling activates, with lighting levels reflecting the transition from higher illuminated urban areas on the western side of Highway 101 to the lower lighting of the Baylands to the east. Photometric levels will conform to standards set by the Illuminating Engineering Society.

The Western Approach Structure will require higher lighting levels for better uniformity ratios to the surrounding environment. Pole mounted luminaires will provide uniform illumination along the pathway and at landscaping areas leading to the Overcrossing. At the Principal Span Structure, lighting will be integrated into the guardrail where possible to create a consistently illuminated pathway. Direct view of any light source is to be shielded from adjacent vehicular vantage points to reduce glare and distraction for drivers. Lighting at the Eastern Approach Structure and Eastern Approach Overlook will be integrated into the urban infrastructure components, such as railings and benches, in order to reduce visual interferences of the Baylands.

Careful consideration will be given to providing appropriate illumination at environmentally sensitive areas such as areas adjacent to Adobe and Barron Creek and the Baylands. Lighting on the Eastern Approach Structure will be minimal in order to reduce potential glare and distraction for wildlife with the Baylands. Step lights will be utilized, meeting photometric requirements, to provide low levels of functional lighting along the pathway. Warm color lighting techniques will be used to reduce lighting effects to migratory birds and other wildlife.

The lighting system will be designed to be mindful of the surrounding environment. Lighting poles and bollards with full-cutoff capability will be used in order to reduce light emitted above the 90° plane, limiting contribution to light pollution. Lighting controls will be utilized to reduce light output during hours with limited activity. Light levels dim down on a set time schedule synced with the astronomical clock. As people approach, sensors detect their presence, allowing the lighting to change in response to pedestrian and bicycle activity.

PROJECT LANDSCAPING AND STORM WATER RETENTION

Landscaping is limited to restoration of areas disturbed by construction. Primary areas for restoration include: 1. The portion of the Baylands under and adjacent to the Eastern Approach Structure which will be restored with native grasses and planting as well as some hardscape and planting at the east plaza where the East Approach Structure joins the San Francisco Bay Trail. Trail head amenities in the form of trash and recycling receptacles as well as an optional drinking fountain and bottle filling station. 2. Disturbed areas of the Google Parking Lot under and adjacent to the Western Approach Structure will be landscape to provide screening to the structure and will include accommodation of a bioretension area, replacement of existing landscaping trees affected by construction and reconfiguration of the existing Google Parking lot resulting in no net loss of parking. 3. The west plaza at the Adobe Creek Reach Trail Head will include hardscaping at the plaza and existing aggregate base along the SCVWD maintenance road compatible with the regular SCVWD maintenance operations and materials, as well as proposed trail head amenities including trash and recycling receptacles and an optional drinking fountain and bottle filling station. 4. Storm water collection into bioretension systems will include native planting and drainage swales leading into retention basins to filter storm-water. These systems will be located in landscaping areas in the vicinity of the western and eastern approaches.

ADOBE CREEK TRAIL

The proposed Adobe Creek Reach Trail involves designating a 10-foot wide by approximately 800 linear feet of the existing Santa Clara Valley Water District (SCVWD) maintenance road on the east side of Adobe Creek, between West Bayshore Road and East Meadow Drive, as the Adobe Creek Reach Trail. The Adobe Creek Reach Trail will provide a more direct, comfortable, and potentially safer alternative to Fabian Way/West Bayshore Road for pedestrians and recreational bicyclists. The trail will utilize the existing SCVWD maintenance road along Adobe Creek (maintaining the existing aggregate base surfacing) and will include installation of safety railing along the top of bank of Adobe Creek (subject to acceptance by the SCVWD). The project will include trail heads at West Bayshore Road and East Meadow Drive. Trail heads will consist of simple concrete connections to the adjoining streets/sidewalks (no formal plazas), associated pavement delineation and street signage. Resurfacing of the Adobe Creek Reach Trail will not be included in this project. However, potential trail resurfacing as part of a future project, will be environmentally cleared as part of this project.

ATTACHMENT C
ARB FINDINGS FOR APPROVAL
Highway 101 Multi-Use Path Overcrossing
17PLN-00086

In order for the ARB to make a future recommendation of approval, the project must comply with the following Findings for Architectural Review as required in Chapter 18.76.020 of the PAMC.

Finding #1: The design is consistent with applicable provisions of the Palo Alto Comprehensive Plan, Zoning Code, coordinated area plans (including compatibility requirements), and any relevant design guides.

Finding #2: The project has a unified and coherent design, that:

a. **creates an internal sense of order and desirable environment for occupants, visitors, and the general community,**
b. **preserves, respects and integrates existing natural features that contribute positively to the site and the historic character including historic resources of the area when relevant,**
c. **is consistent with the context-based design criteria of the applicable zone district,**
d. **provides harmonious transitions in scale, mass and character to adjacent land uses and land use designations,**
e. **enhances living conditions on the site (if it includes residential uses) and in adjacent residential areas.**

Finding #3: The design is of high aesthetic quality, using high quality, integrated materials and appropriate construction techniques, and incorporating textures, colors, and other details that are compatible with and enhance the surrounding area.

Finding #4: The design is functional, allowing for ease and safety of pedestrian and bicycle traffic and providing for elements that support the building's necessary operations (e.g. convenient vehicle access to property and utilities, appropriate arrangement and amount of open space and integrated signage, if applicable, etc.).

Finding #5: The landscape design complements and enhances the building design and its surroundings, is appropriate to the site's functions, and utilizes to the extent practical, regional indigenous drought resistant plant material capable of providing desirable habitat that can be appropriately maintained.

Finding #6: The project incorporates design principles that achieve sustainability in areas related to energy efficiency, water conservation, building materials, landscaping, and site planning.

ATTACHMENT D
SITE AND DESIGN OBJECTIVES
Highway 101 Multi-Use Path Overcrossing
17PLN-00086

Unless the application for design approval is diverted for minor architectural review under Section 18.76.020(b)(3)(D), the PTC shall review the site plan and drawings, and shall recommend approval or shall recommend such changes as it may deem necessary to accomplish the following Site and Design objectives, as required in Chapter 18.30(G).060 of the PAMC.

Objective (a): To ensure construction and operation of the use in a manner that will be orderly, harmonious, and compatible with existing or potential uses of adjoining or nearby sites.

Objective (b): To ensure the desirability of investment, or the conduct of business, research, or educational activities, or other authorized occupations, in the same or adjacent areas.

Objective (c): To ensure that sound principles of environmental design and ecological balance shall be observed.

Objective (d): To ensure that the use will be in accord with the Palo Alto Comprehensive Plan. (Ord. 4826 § 121, 2004: Ord. 3048 (part), 1978)

Attachment E

Project Plans

Hardcopies of project plans are provided to ARB Members. These plans are available to the public online and by visiting the Planning and Community Environmental Department on the 5th floor of City Hall at 250 Hamilton Avenue.

Directions to review Project plans online:

1. Go to: www.cityofpaloalto.org/gov/depts/pln
2. Click on "Development Proposals"
3. Click on "Development Projects" under Commercial and Mixed Use Developments.
4. Click on "3600 Bayshore" to view the project plans