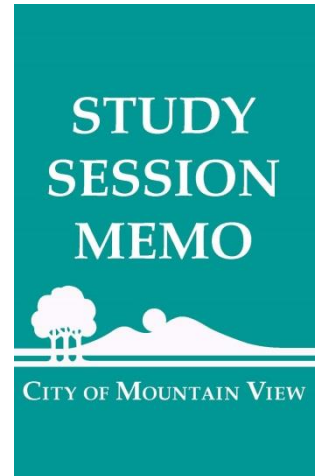


**DATE:** October 4, 2016

**TO:** Honorable Mayor and City Council

**FROM:** Stephanie Williams, Senior Planner  
Edward Arango, Principal Civil Engineer  
Randal Tsuda, Community Development Director  
Michael A. Fuller, Public Works Director

**VIA:** Daniel H. Rich, City Manager



**TITLE:** Draft Charleston Corridor Feasibility Study and Charleston East Transportation Improvements/Right-of-Way Impacts

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## PURPOSE

The purpose of this Study Session is for City Council to provide direction on Google's draft Charleston Corridor Feasibility Study and transportation improvements surrounding the Charleston East development site.

## BACKGROUND

The project site is approximately 18.68 acres located on the west side of North Shoreline Boulevard between Charleston Road and Amphitheatre Parkway in the North Bayshore Precise Plan Area. The site consists of two undeveloped parcels which have been leased by the City to Google until 2063.

## Development Project

In June 2015, Google submitted an informal application for the development of a 595,000 square foot office building at 2000 North Shoreline Boulevard. On March 29, 2016, Council reviewed the informal plans at a Study Session and provided feedback and direction for the formal development submittal (see Attachment 1 – [City Council Study Session Memo, March 29, 2016](#)). In



Location Map

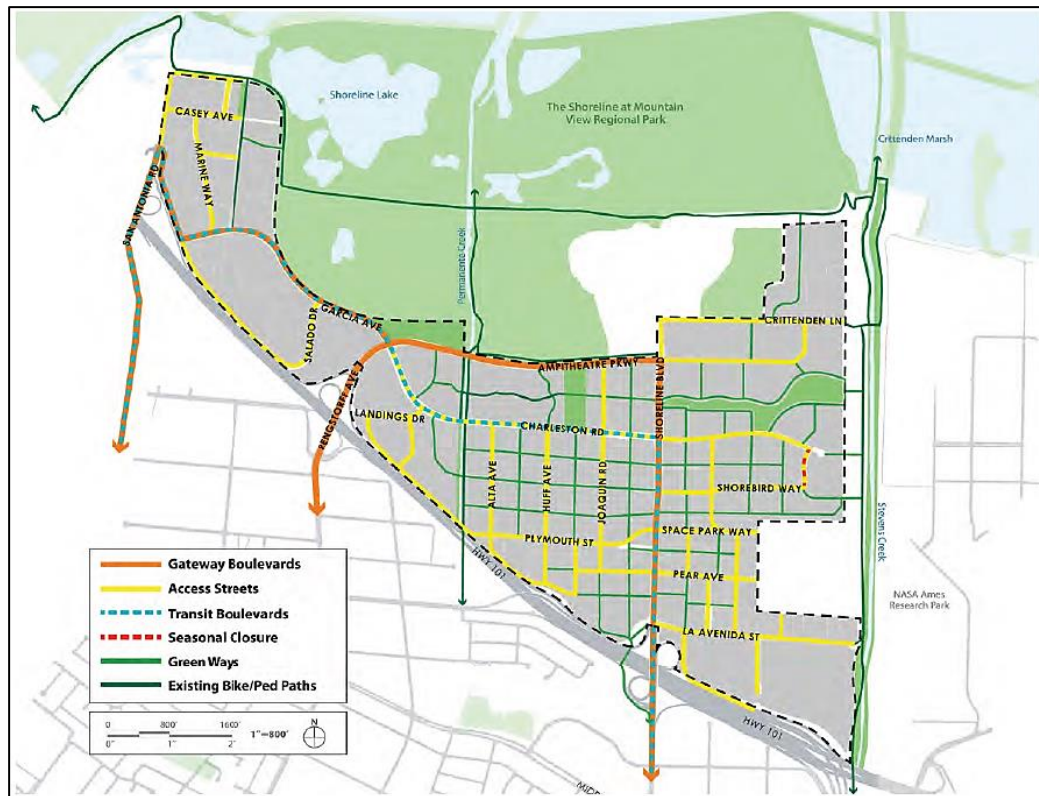
May 2016, Google submitted a formal application and began the development review process.

## DISCUSSION

### North Bayshore Precise Plan Transportation Network

The 2014 North Bayshore Precise Plan (NBPP) established a conceptual street network within the plan area to support a reduction in single-occupant vehicle (SOV) use and an increase in other transportation modes. Specifically, SOV is targeted to reduce to 45 percent and biking/walking is targeted to increase to 10 percent from the current level of 6 percent.

The conceptual street network includes approximate alignments and cross sections of new facilities, but does not include any further design effort. As improvements are designed with City projects or as part of private developments, the conceptual street network is used as a starting point in the design. As design progresses, deviations from the conceptual street network are sometimes found to be advantageous.

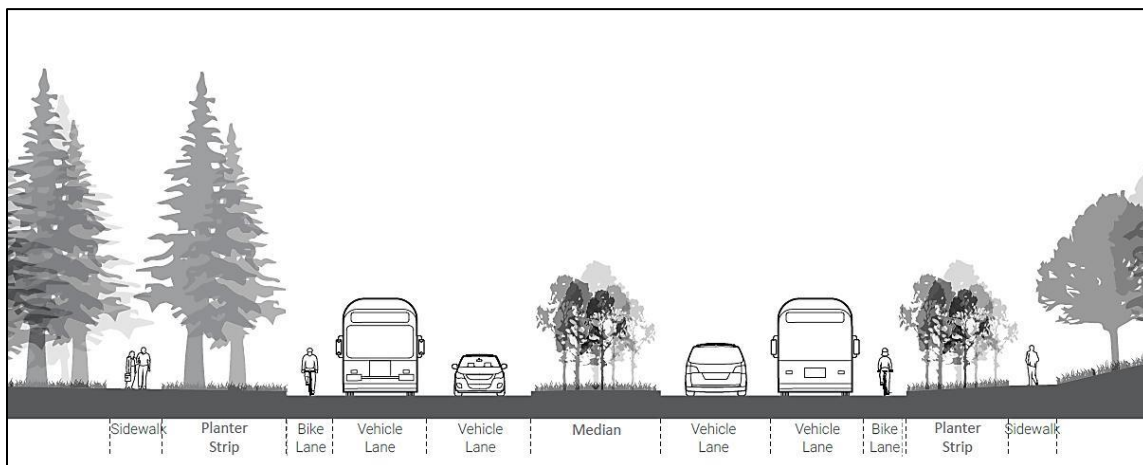


North Bayshore Conceptual Street Network

As part of the development of the formal plans for Charleston East, the NBPP transportation improvements were laid out on the three streets surrounding the project site (North Shoreline Boulevard, Amphitheatre Parkway, and Charleston Road) and the new Joaquin Road extension through the site. This report outlines some deviations from the NBPP conceptual street network and requests Council feedback and direction on their implementation.

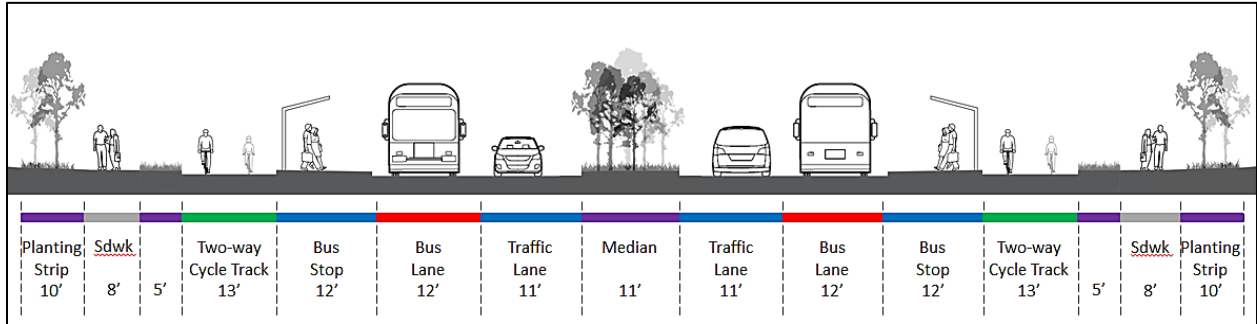
### Draft Charleston Corridor Feasibility Study

Charleston Road extends east-west between the Rengstorff Avenue/Amphitheatre Parkway intersection and its easterly terminus at a cul-de-sac near Stevens Creek within the NBPP area. There are two travel lanes and a bike lane in each direction between Rengstorff Avenue and Shoreline Boulevard, and one travel lane and a bike lane in each direction east of Shoreline Boulevard.



Existing Charleston Road

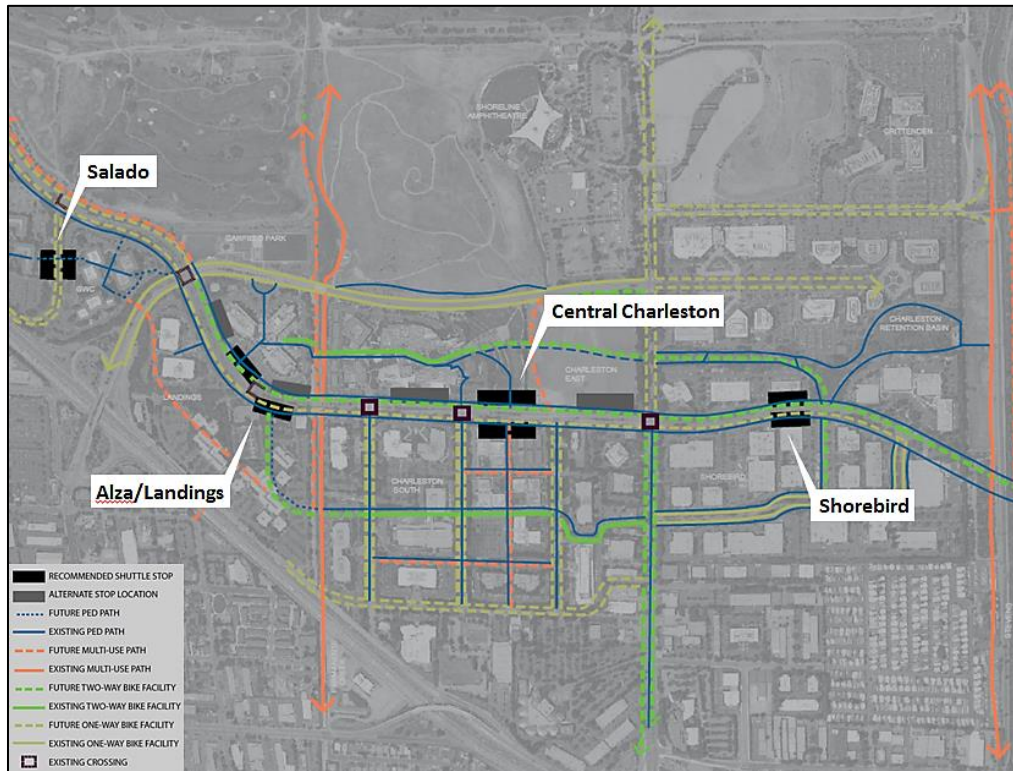
The improvement of Charleston Road (Amphitheatre Parkway to Shoreline Boulevard) to a “transit boulevard” is designated as one of the high-priority transportation improvements in the NBPP (Improvement No. T-3). A transit boulevard, as defined in the NBPP, is a corridor where transit is planned to operate at high frequencies and is prioritized above other modes. Transit vehicles are allowed to stop in the bus lane to provide fast and reliable transit service. The transit boulevard also includes cycle tracks, which are bicycle travelways separated and outside from the vehicle lanes and bus activity.



NBPP Concept Charleston Road

A feasibility study to refine the concept of the Charleston transportation corridor, evaluate tree and right-of-way impacts, and other early design activities is funded as a City capital improvement project, though Public Works staff has not yet begun the project. In July 2016, Google provided the City with a draft Charleston Corridor Feasibility Study (Study) as part of the design of the Charleston East development. The draft Study recommends deviations from the NBPP Charleston Road concept by consolidating transit stops and allowing bus pullouts instead of distributed bus stops along the corridor. The pullouts could be incorporated with an interim NBPP improvement phase (the consolidated stops only) where two vehicle travel lanes would remain, and with the full NBPP improvements, including converting one of the travel lanes to a dedicated transit lane. Staff supports this concept, but because it deviates from the NBPP and has right-of-way impacts, staff is seeking Council direction on the revised concept.

The draft Study area covers Charleston Road as well as a portion of Salado Drive (off of Garcia Avenue) and proposes four public consolidated bus stop locations within the Study area. These bus stop locations include: Salado Drive; Alza/Landings Drive; Central Charleston Road; and Shorebird Way.



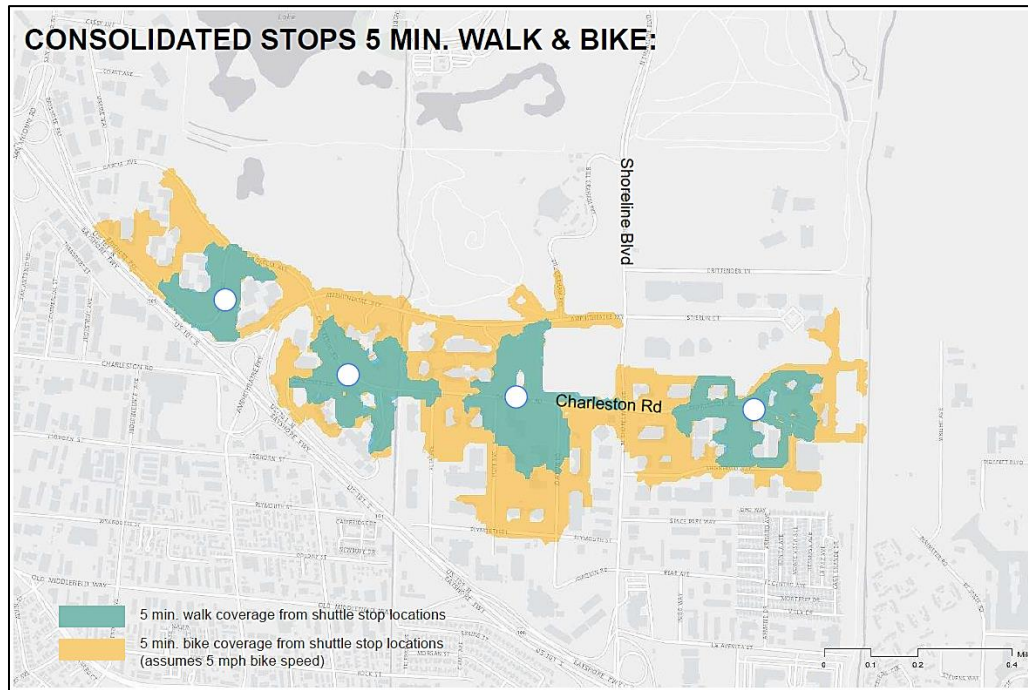
Bus Stop Locations (Shown in Black)

## Distributed and Consolidated Bus Stop Locations

The draft Study reviewed two types of stops: distributed and consolidated. Distributed stops would occur more frequently and reduce the walking time for users, but increases infrastructure needs and ride time. Consolidated stops would increase walk time from some locations but would reduce needed infrastructure, stop frequency, and ride time. The consolidated locations were strategically chosen for optimal and efficient operational use. The draft Study recommends the consolidated bus stop alternative as it provides more efficiency and utilizes sites the City or Google control.

All recommended stop locations would be public and accessible to the North Bayshore Transit Management Authority (TMA), Santa Clara Valley Transportation Authority (VTA), private shuttles, and any future transit providers. These locations provide for a 5-minute walk or bicycle ride to a majority of the service area. The Alza/Landings location has in-lane bus stops (bus stopping within the vehicle lane) and the other three locations (Salado Drive, Central Charleston Road, and Shorebird Way) have bus stops with dedicated bus pullouts. Bus pullouts allow passenger loading and unloading out of the traffic lane, eliminating transit vehicles queuing behind another transit vehicle. There is flexibility to allow for distributed stops if, in the future, the operational needs

of the corridor change where transit vehicles could stop in the lane. Staff supports the recommended consolidated stop alternative.



Bus Stop Coverage Area

### **Bus Pullouts on Charleston Road**

The draft Study proposes four sets of stop locations. In each set, a stop would be included on each side of the road. The bus stop location of Alza/Landings is consistent with the guidelines in the NBPP, with curbside stopping by buses. The Salado Drive and Shorebird Way locations do include bus pullouts, but as these are not on a designated transit boulevard, they are also consistent with the NBPP guidelines. The Central Charleston Road location, located approximately midway between Shoreline Boulevard and Permanente Creek, includes a bus pullout on both the north and south sides of Charleston Road. The NBPP envisioned buses pulling to the side of the curb without pullouts for relatively quick drop off and pick up. Pullouts are recommended at this location because the existing high volume of riders prevents the relatively quick stopping envisioned in the NBPP. This location would serve the Googleplex and Charleston South properties as well as the future Charleston East campus. This transit stop would be at a centralized location, focus transit activity, and allow for shuttle transfers at the same transit location. With the anticipated high activity and volume of buses using the area for both active pick up/drop off in addition to those buses waiting for transfers, a transit stop is needed to accommodate this level of service. The needed

space of the pullout would be longer to accommodate up to five full-size buses. Staff concurs that there are operational benefits to providing consolidated stops and agrees with the recommendation for pullout designs in the Central Charleston Road area.

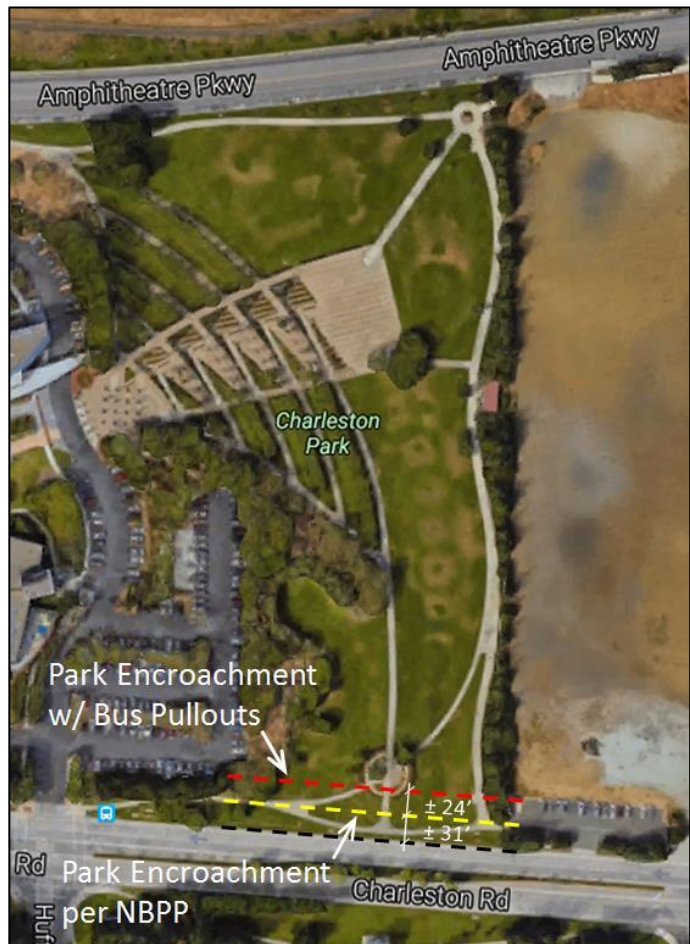
Question 1: Does the City Council support the inclusion of bus pullouts on the Charleston Road Transit Boulevard?

### Charleston Park Street Frontage as Pullout Transit Stop

The draft Study recommends the Central Charleston area transit stop/bus pullout for the north side of Charleston Road be located along the Charleston Park street frontage. Advantages of this location over the frontage of neighboring properties include:

- Provides for a central transit location between the existing Googleplex and the future Charleston East campus.
- Site conditions allow less impacts as compared to other nearby alternatives (i.e., trees and mounding).
- The location is far enough away from the Shoreline Boulevard intersection to be less likely to contribute to congestion at that intersection.

A disadvantage of this location is the encroachment into the park by approximately 24' compared with the concept approved in the NBPP. Under the NBPP concept, the construction of landscape buffers (10'), a two-way cycle track (13'), and a sidewalk (8'), would encroach into the park approximately 31' along the entire park frontage. With the recommended pullout space, an



Bus Stop Pullout in Front of Charleston Park

additional 24' would be needed for the pullout and a transit stop. Due to the length of street frontage needed to accommodate five buses, the transit stop would take up a majority of the block between Huff Avenue and Joaquin Road. The park's entire Charleston Road frontage and a portion of the frontages along both the Googleplex site and Charleston East site would be affected. The transit stop may be shifted toward one of the two sites, but the transit stop's size and close proximity to the two intersections limit shifting the transit stop to avoid impacting a majority of the park's frontage.

Staff supports the Charleston Park location due to the high volume of transit riders needed to implement the aggressive mode shift as identified in the NBPP, requiring well-placed and proper transit stops. Alternative locations to the park include placing the pullout adjacent to the Googleplex or the Charleston East development site. Both locations have existing trees along the Charleston Road street frontage and rise in elevation from the street. Should Council direct, further evaluation of the specific impacts of the alternative locations would need to be studied.

Question 2: Does the City Council support a bus pullout location at the Charleston Park site?

### **One-Way Cycle Track on South Side of Charleston Road**

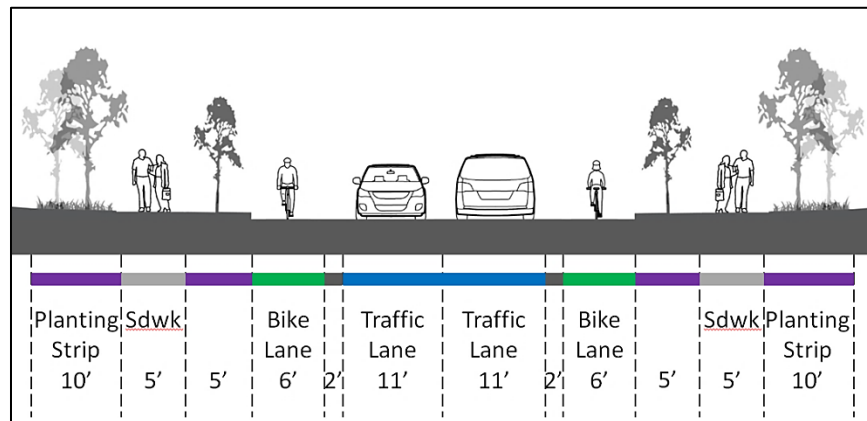
The draft Study also evaluated the NBPP concept of proposed two-way cycle tracks on both the north and south sides of Charleston Road. Based on conflicts from existing intersections and driveways along the Charleston corridor, the Study recommendation is to include a two-way cycle track on the north side, but a one-way cycle track on the south side of Charleston Road. This one-way cycle track concept deviates from the NBPP. There are more side streets and driveways on the south side of Charleston Road and a one-way cycle track could reduce the potential for conflicts between pedestrians, cyclists, and vehicles. A two-way cycle track on the south side of Charleston Road would likely require more right-of-way and may have a larger impact to the existing trees. Staff agrees that there are more potential conflict points along the south side of Charleston Road and a one-way cycle track is appropriate. Additionally, south of Charleston Road, the recently constructed Green Loop, running east-west from Alta Avenue to Shorebird Way, provides an additional option for a protected two-way bicycle facility.

Question 3: Does the City Council support a one-way cycle track on the south side of Charleston Road?



**Joaquin Road Cycle Track at Charleston East**

The NBPP identifies a new north-south access street, a northerly extension of Joaquin Road, through the Charleston East site, connecting Charleston Road to Amphitheatre Parkway. Access streets are identified in the NBPP as lower-volume streets with two vehicular lanes (one in each direction) and adjacent in-street bicycle lanes. As part of the Charleston East development proposal, Google provides for this



NBPP Concept of an Access Street

new access street. To better accommodate bicycles, Google is proposing to provide a two-way cycle track on the west side of Joaquin Road only, in lieu of on-street bicycle lanes as shown in the NBPP cross section (see Figure 7). Both Charleston Road and Amphitheatre Parkway require the installation of two-way cycle tracks adjacent to the Charleston East development site. Providing a two-way cycle track on the Joaquin Road extension is a higher-quality bicycle facility and consistent with the other cycle-track improvements and connections proposed adjacent to Joaquin Road. The right-of-way needs are similar in both cases. Staff concurs with the cycle track proposal for Joaquin Road.

Question 4: Does the City Council support a two-way cycle track on the west side of the Joaquin Road extension?

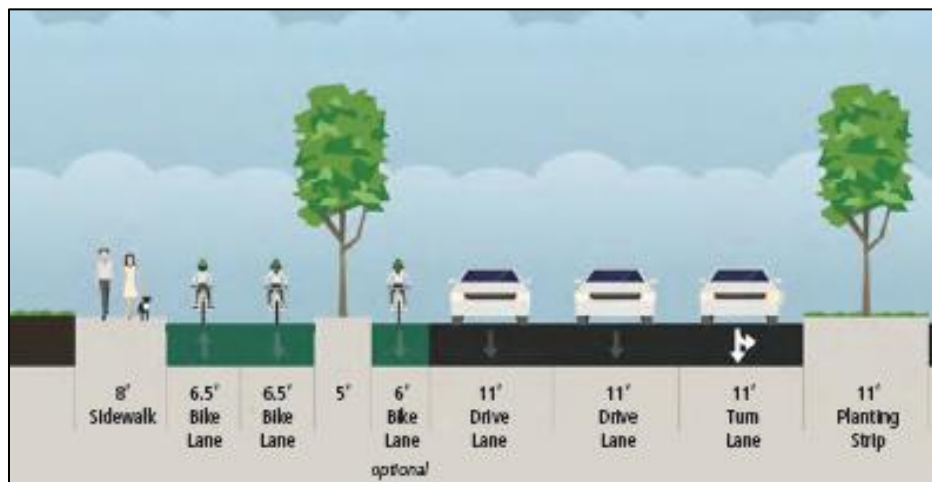
**Trees**

For the Charleston East project, there are a significant number of trees within the right-of-way (ROW) easement area that surround the site that would need to be removed in order to implement the conceptual street standards in the NBPP. Staff is requesting Council feedback on whether these trees should be removed to implement the NBPP standards or if an alternative layout which can retain some of the trees is preferred.

Google's draft plans show the planting of approximately 385 native replacement trees throughout the site and along the street frontages. Depending on which option Council chooses, the number and location of replacement trees may vary, but in all of the scenarios, tree replacements would be provided along all the street frontages.

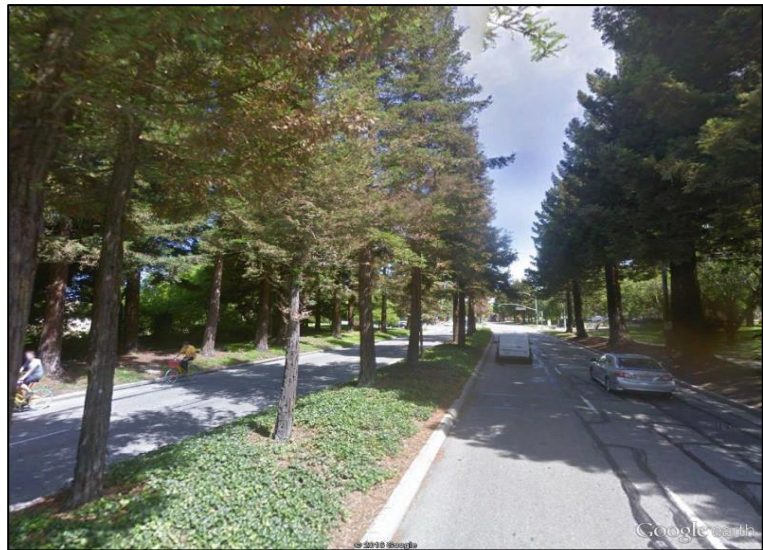
### Shoreline Boulevard

North Shoreline Boulevard is identified as a gateway boulevard in the NBPP. Between Amphitheatre Parkway and Charleston Road, there are currently two travel lanes and a bike lane in each direction, and a center median island. From the existing curb line, the NBPP calls for the installation of a 5' planting strip, a 13' bidirectional cycle track, and an 8' sidewalk.



NBPP Concept of a Gateway Boulevard

Currently, there are mature redwoods on both sides of the street and in the center island median which form an allée between Amphitheatre Parkway and Charleston Road. At the March 2016 Study Session, a majority of the Council requested that this allée be maintained with the construction of the Charleston East project, with the exception of the removal of any dead trees.



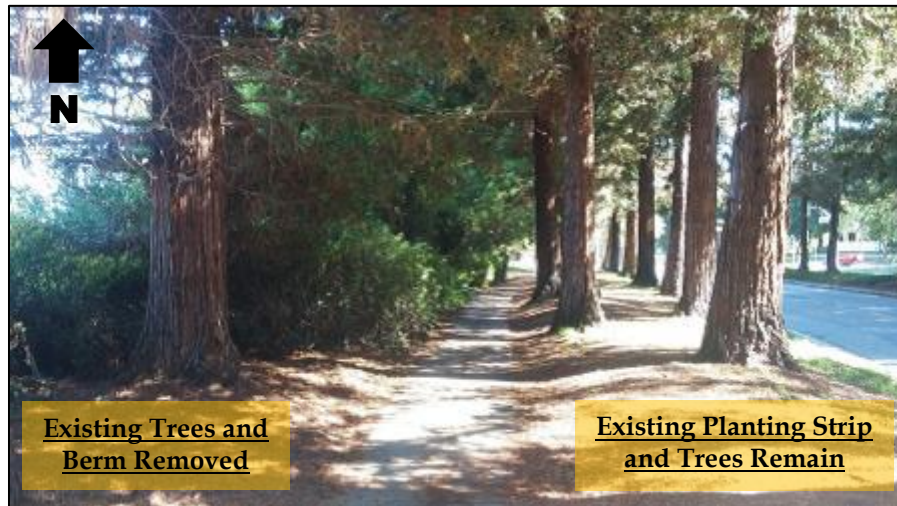
View of Shoreline Boulevard Allée

Installation of the transportation improvements per the NBPP street section shown above

would necessitate the removal of all of the redwood trees along the entire western side of the Shoreline Boulevard frontage between Amphitheatre Parkway and Charleston Road (approximately 100 trees). Staff is requesting Council direction on whether this is an acceptable approach and has also prepared two alternatives for Council's consideration in order to keep the allée as previously requested.

### *Option 1*

The first alternative would be to keep all the redwood trees in the existing planting strip, between the existing sidewalk and the street, and install a 13' bidirectional cycle track and 8' sidewalk to the west of this existing planting strip. The existing park strip varies in width (approximately 5' to 10') and would be greater than the required 5' planting strip required in the NBPP. The redwood trees in the street planting strip are in fair to good health.



Option 1 – Site Photo

This option would necessitate the removal of all the trees to the west of the existing sidewalk to allow the installation of the bike and pedestrian improvements (approximately 45 trees). This option would maintain the allée along this section of Shoreline Boulevard because there would be a continuous row of redwoods maintained on both sides of the street and in the center island median. This option would also implement the bike and pedestrian improvements as envisioned in the NBPP with little deviation.

### *Option 2*

The second alternative would be to keep all the trees in the existing park strip and a majority of the existing trees to the west of the existing sidewalk and install a Class I trail between them in approximately the same location as the existing sidewalk. The Class I trail would be shared by bicycles and pedestrians. Some trees would still need to be removed to the west of the new Class I trail in order to provide a safe distance for bicycle travel and trail improvements (approximately 18 trees). This option involves the least amount of tree removal and maintains the allée along this section of Shoreline Boulevard but does not implement the dedicated cycle track and sidewalk as envisioned in the NBPP.



Option 2—Site Photo

Staff recommends Option 1 because it allows for the preservation of a significant number of trees and the Shoreline Boulevard allée while also allowing for the consistent implementation of bike and pedestrian improvements along the entire Shoreline Boulevard corridor as envisioned in the NBPP.

Question 5: Does Council support the installation of the NBPP transportation improvements along Shoreline Boulevard or is a modified improvement configuration preferred? If an alternate is preferred, does Council support Option 1 or Option 2?

### **Amphitheatre Parkway**

Amphitheatre Parkway is identified as a gateway boulevard in the NBPP. Along the project frontage there are currently two travel lanes and a bike lane in each direction. From the existing curb line, the NBPP calls for the installation of a 5' planting strip, a 13' bidirectional cycle track, and an 8' sidewalk.

Although there is not the same number of total trees along Amphitheatre Parkway as there is along Shoreline Boulevard (approximately 50 trees), installation of the bike and pedestrian



View of Amphitheatre Parkway Trees

improvements per the NBPP street section would necessitate the removal of all of the trees in the planting strip along the project frontage. The trees in this location are primarily a mixture of redwood, cherry, and deodar cedar which are in fair to poor condition.

Staff is requesting Council direction on whether this is an acceptable approach for the Amphitheatre Parkway frontage or if one of the two options presented for Shoreline Boulevard should be implemented instead, which would be retaining the healthy trees in the planting strip and installing the bike and pedestrian improvements to the south or a Class I trail in approximately the same alignment as the existing sidewalk.

Question 6: Does Council support the installation of the NBPP transportation improvements along Amphitheatre Parkway or is a modified improvement configuration preferred? If an alternate is preferred, does Council support Option 1 or Option 2?

### **Charleston Road**

The Charleston Road improvements as currently represented in the NBPP, as well as the modifications discussed in the Google draft Charleston Corridor Feasibility Study, would necessitate the removal of the existing trees in the landscape strip along the Charleston Road project frontage (approximately 50 trees). The redwood trees located in the planting strip are all in poor health and/or dead and are recommended for removal. The remaining trees are primarily deodar cedar trees which are in good health. Staff is requesting Council direction on whether removal of the healthy trees in the planting strip to accommodate the transportation improvements along Charleston Road is an acceptable approach or if one of the two options presented for Shoreline Boulevard should be implemented instead, which would be retaining the healthy trees in the planting strip and installing the bike and pedestrian improvements to the north or a Class I trail in approximately the same alignment as the existing sidewalk.



View of Charleston Road Trees

Question 7: Does Council support the installation of the NBPP/Google draft Charleston Corridor Feasibility Study transportation improvements along Charleston Road or is a modified improvement configuration preferred? If an alternate is preferred, does Council support Option 1 or Option 2?

## **RECOMMENDATION**

Staff recommends the City Council provide direction on the following questions posed in the Study Session memo:

- Question 1: Does the City Council support the inclusion of bus pullouts on the Charleston Road Transit Boulevard?
- Question 2: Does the City Council support a bus pullout location at the Charleston Park site?
- Question 3: Does the City Council support a one-way cycle track on the south side of Charleston Road?
- Question 4: Does the City Council support a two-way cycle track on the west side of the Joaquin Road extension?
- Question 5: Does Council support the installation of the NBPP transportation improvements along Shoreline Boulevard or is a modified improvement configuration preferred? If an alternate is preferred, does Council support Option 1 or Option 2?
- Question 6: Does Council support the installation of the NBPP transportation improvements along Amphitheatre Parkway or is a modified improvement configuration preferred? If an alternate is preferred, does Council support Option 1 or Option 2?
- Question 7: Does Council support the installation of the NBPP/Google draft Charleston Corridor Feasibility Study transportation improvements along Charleston Road or is a modified improvement configuration preferred? If an alternate is preferred, does Council support Option 1 or Option 2?

## **NEXT STEPS**

Following feedback from the City Council at this Study Session, the applicant will modify their plans and continue the development review and CEQA process and staff will continue the evaluation of the Charleston Road Feasibility Study. Council consideration of the development project is anticipated in early 2017.

## **PUBLIC NOTICING**

The City Council agenda is advertised on Channel 26, and the agenda and this report appear on the City's Internet website at <http://www.mountainview.gov/>. A notice was sent to all property owners within a 300' radius and to interested parties on file with the Community Development and Public Works Departments. Additional public meetings will be held regarding this project, and property owners and interested parties will be notified of these meetings as they are scheduled.

SW-EA-RT-MAF/7/CAM  
818-10-04-16SS-E

Attachment: 1. [City Council Study Session Memo, March 29, 2016](#)