EAST CONTRA COSTA BART EXTENSION (eBART) PROJECT FINAL EIR

Addendum 4

Antioch Parking Lot Expansion

Lead Agency: San Francisco Bay Area Rapid Transit District

December 2018

Table of Contents

List of Figures

List of Tables

Appendices

Section 1
Introduction

1.1 Background

The San Francisco Bay Area Rapid Transit District (BART) Project extends transit services into east Contra Costa County from its existing Pittsburg/Bay Point BART Station via a diesel multiple unit (DMU) system. The Project is generally known as "eBART" in reference to the extension of service to the "East" portion of Contra Costa County. The Project consists of an approximately 10-mile extension of transit service in the median of State Route 4 (SR 4) from the former BART terminus in Contra Costa County at the Pittsburg/Bay Point BART Station to a point just east of Hillcrest Avenue in the City of Antioch.

The potential environmental effects of the eBART Project were evaluated under the California Environmental Quality Act (Public Resources Code Section 21000, et seq., CEQA) and were presented in a Final Environmental Impact Report (Final EIR) for the Project. On April 23, 2009, the BART Board of Directors certified the Final EIR, adopted a Mitigation Monitoring and Reporting Plan (MMRP)[1] and adopted the eBART Project (Project).

There have been three Addenda to the Final EIR since its certification in 2009. The first Addendum analyzed modifications to project phasing and to the two eBART stations: Pittsburg Railroad Avenue Station and Hillcrest Station (referred to herein as Antioch Station). The Board considered those modifications and the Addendum on April 28, 2011 and adopted the Revised Project. A second Addendum analyzed grading outside the original project footprint. BART's Assistant General Manager reviewed and considered the second Addendum and approved the project changes. The General Manager notified the Board of the project changes and the second Addendum in a memorandum on May 8, 2012. The third Addendum analyzed the use of the property between the Antioch Station parking lot and the Maintenance Facility as a temporary staging and storage area during construction and a long-term storage area to support eBART system operations. The Board considered the modifications to the project and adopted the project changes and Addendum on November 21, 2013.

As described in detail in Section 2 below, modifications to the Revised Project evaluated in this addendum (Addendum 4) consist of using the existing storage area at the Antioch BART Station as a parking lot that would provide approximately 850 new parking spaces.

Purpose of Addendum

This document, prepared pursuant to CEQA, constitutes an Addendum to the East Contra Costa BART Extension (eBART) Environmental Impact Report (State Clearinghouse No. 2005072100) certified in April 2009 (referred to herein as the Final EIR).[2] The Final EIR, previous Addenda, and this Addendum together serve as the environmental review of the Revised Project, as required pursuant to the provisions of CEQA.

Section 15164 of the CEQA Guidelines allows a Lead Agency to prepare an Addendum to a previously certified EIR if some changes or additions are necessary, but none of the conditions described in Guidelines Section 15162 requiring the preparation of a subsequent EIR have occurred. In brief, Section 15162 states that when an EIR has been certified, no subsequent EIR needs to be prepared for the project unless the Lead Agency determines, on the basis of substantial evidence in the light of the whole record, that (1) there

[1] Mitigation Monitoring and Reporting Plan adopted April 23, 2009 and revised April 28, 2011.
[2] The Final EIR is available at the San Francisco Bay Rapid Transit District at 300 Lakeside Drive, 21st Floor, Oakland, California 94612 or online at https://www.bart.gov/about/projects/ecc/environmental

are substantial changes proposed in the project that require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; (2) substantial changes occur with respect to the circumstances under which the project is undertaken, which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or (3) there is new information of substantial importance regarding new or more severe significant effects, or the feasibility or effectiveness of alternatives or mitigation measures, which was not known at the time the previous EIR was certified.[3]

Revisions to the Project

Construction of the eBART terminus station in Antioch was completed in May 2018. The station includes the station platform in the median of SR 4, station entry house, parking lot, access road, and DMU Maintenance Facility along the north side of SR 4. The area between the existing station parking lot and the Maintenance Facility, which was used as a staging area during construction and that is currently used for storage, is now proposed for additional parking. The 7.97-acre site would provide approximately 850 new spaces.

Determination

This Addendum to the eBART Project Final EIR revisits the analysis conducted in the Final EIR and previous Addenda and evaluates the potential effects of constructing and operating a new parking lot at the Antioch Station (Revised Project). The new parking lot is evaluated for all categories of impact analyzed in the Final EIR (transportation, land use, visual quality, etc.). The analysis did not identify any substantial changes to the affected environment and did not identify any new or substantially more severe impacts not already identified in the Final EIR. All mitigation measures included in the Final EIR and MMRP would also apply to the Revised Project and no new mitigation measures are warranted. Based on the evaluation presented in this Addendum, there is no substantial evidence in the light of the whole record that the conditions outlined in Section 15162 of the CEQA Guidelines requiring a subsequent EIR are met. Therefore, an Addendum to the Final EIR is appropriate.

[3] See CEQA Guidelines Section 15162 for the complete text.

Section 2
Revisions to the Project

2.1 Background

The Final eBART EIR addressed the BART proposal to extend transit services into east Contra Costa County from its existing Pittsburg/Bay Point BART Station in the unincorporated community of Bay Point near the City of Pittsburg. The Project is known as "eBART" in reference to the extension of service to the "East" portion of Contra Costa County. The Project consists of an approximately 10-mile extension of transit service in the median of SR 4 from the former BART terminus in Contra Costa County at the Pittsburg/Bay Point BART Station to the new Antioch Station, just east of Hillcrest Avenue in the City of Antioch. The extension to Antioch Station (referred to as Hillcrest Station in the Final EIR and previous Addenda) began operation in May 2018. The service is known as the "BART to Antioch" extension.

The eBART extension was an immediate success with commuters. The Antioch Station is the terminus station, and the regular parking spaces in the existing 1,038-space lot typically are filled by 6:00 AM with a waiting list of approximately 1,700. This may limit the ability of BART patrons to access the site system and potentially reduce BART ridership. BART is proposing to provide additional parking at the Antioch Station to accommodate this existing parking demand. A 7.97-acre site, currently used as a storage area to support eBART system operations, located east of the existing parking lot, would provide approximately 850 new parking spaces.

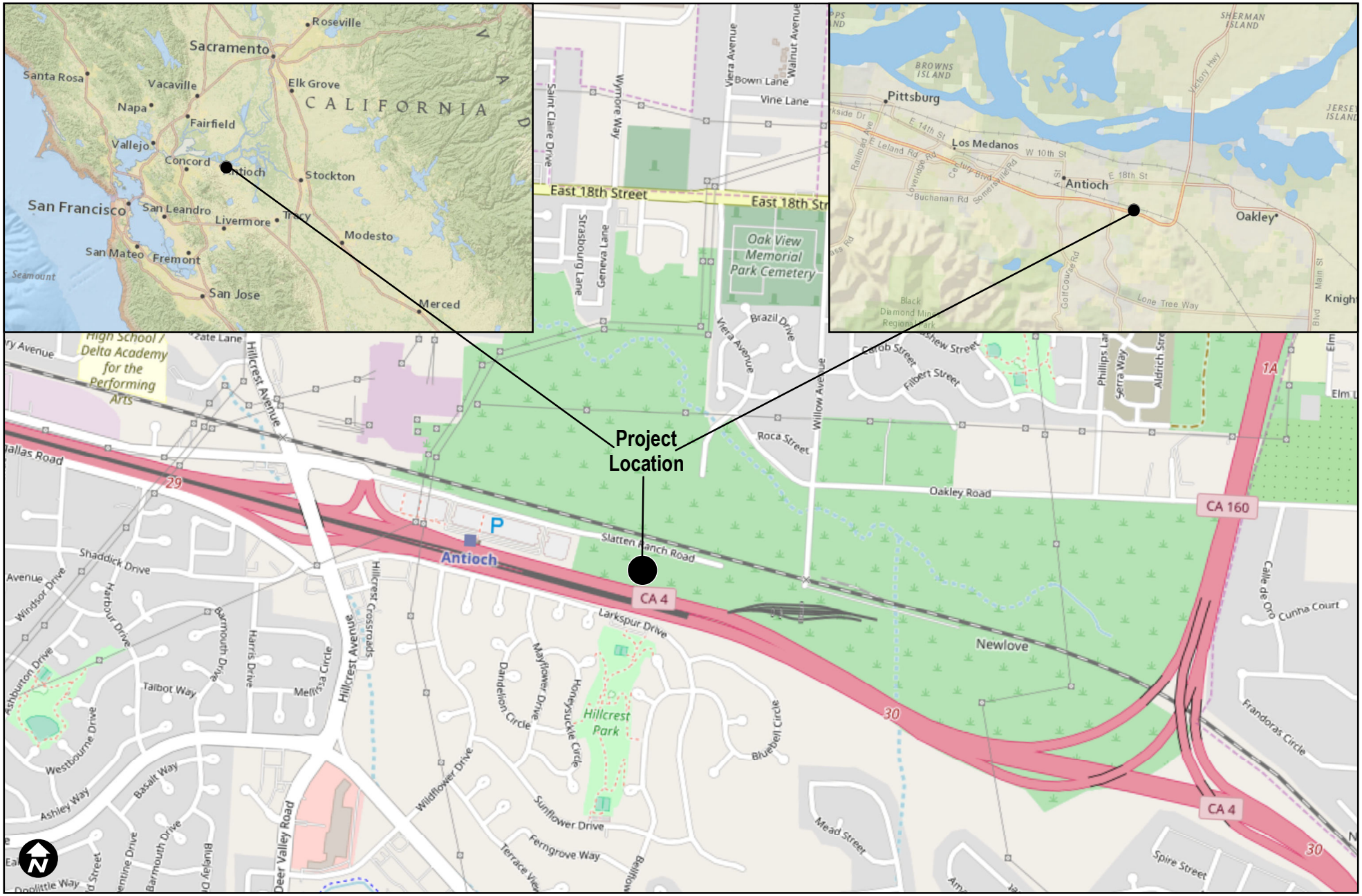
2.2 Revised Project

Proposed Additional Parking Site

Existing Use. As shown on Figure 1, the Antioch Station is adjacent to the north side of SR 4 east of Hillcrest Avenue. As shown on Figure 2, the station and associated facilities include the station platform in the median of SR 4 and the station entry house, parking lot, access road, and DMU Maintenance Facility adjacent to SR 4 on the north. BART used the area between the station parking lot and the Maintenance Facility as a staging area during construction with the intention to maintain it as a storage area during operations. BART is now proposing to use the storage area for additional parking.

During construction of the station, the site was used to store rail, ties, ballast, and heavy equipment. The only improvements made at that time were some initial spreading of spoils from other areas of the project, the placement of compacted aggregate (drain rock) to a depth of 12 inches to provide a circular driveway to make the site useable in wet weather, and construction of a fence to provide security for the stored equipment and materials. It was used as a staging area for approximately four years. The site also was intended to serve as a long-term storage area to support eBART system operations following construction. For that use, the site would have continued to store rails, ties, and ballast.

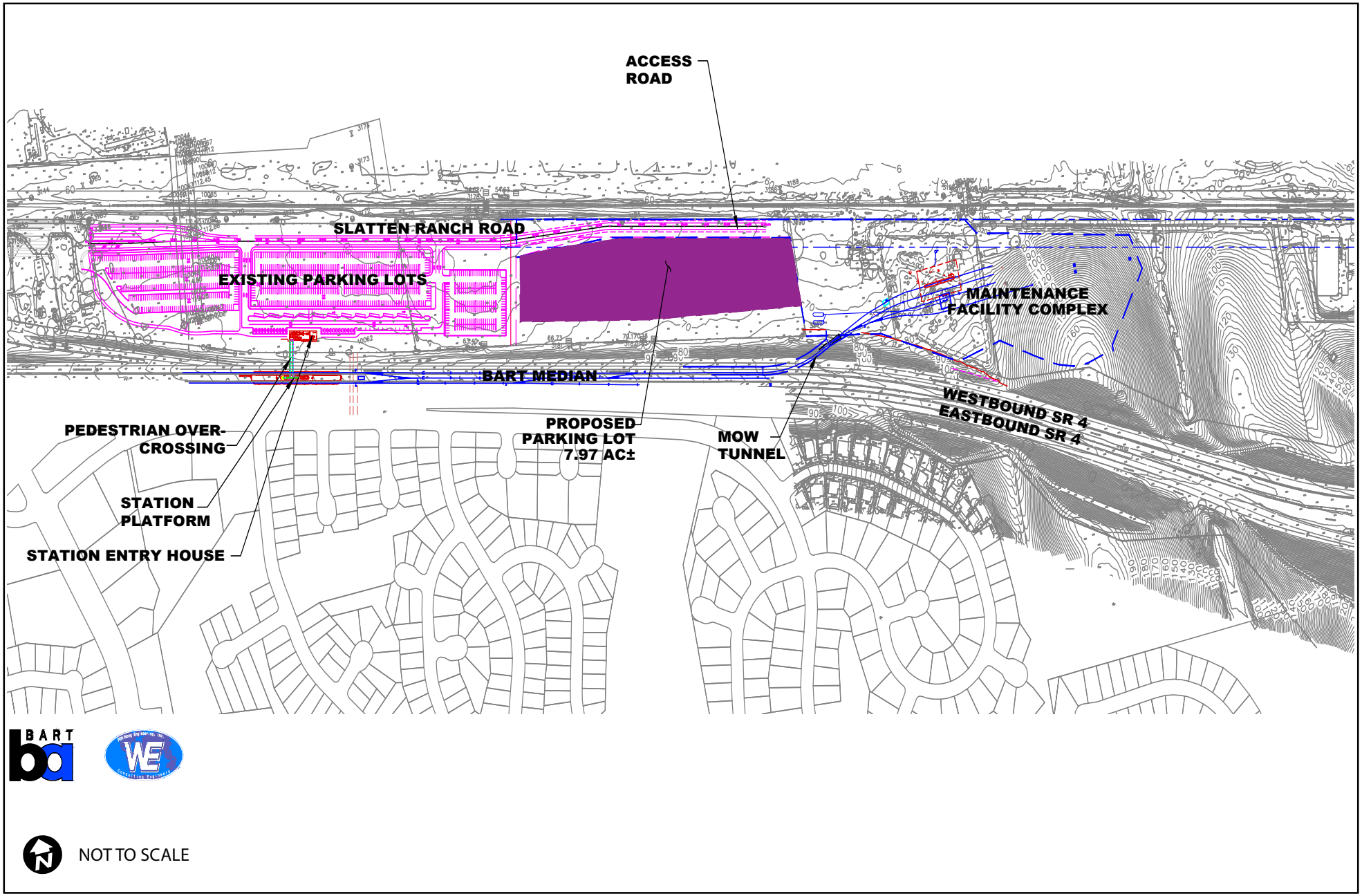
Proposed Parking Lot. The new preliminary parking plan would construct approximately 850 spaces on the 7.97-acre site. Figure 2 illustrates the location of the proposed parking between the existing station parking lot and the Maintenance Facility. The site is a rectangle that measures approximately 1,250 feet east to west and 240 feet north to south. The site is at a slightly lower elevation than the existing parking lot to the west and would be separated by an approximately 18-foot berm.



Source: National Geographic, 2018.

Figure 1

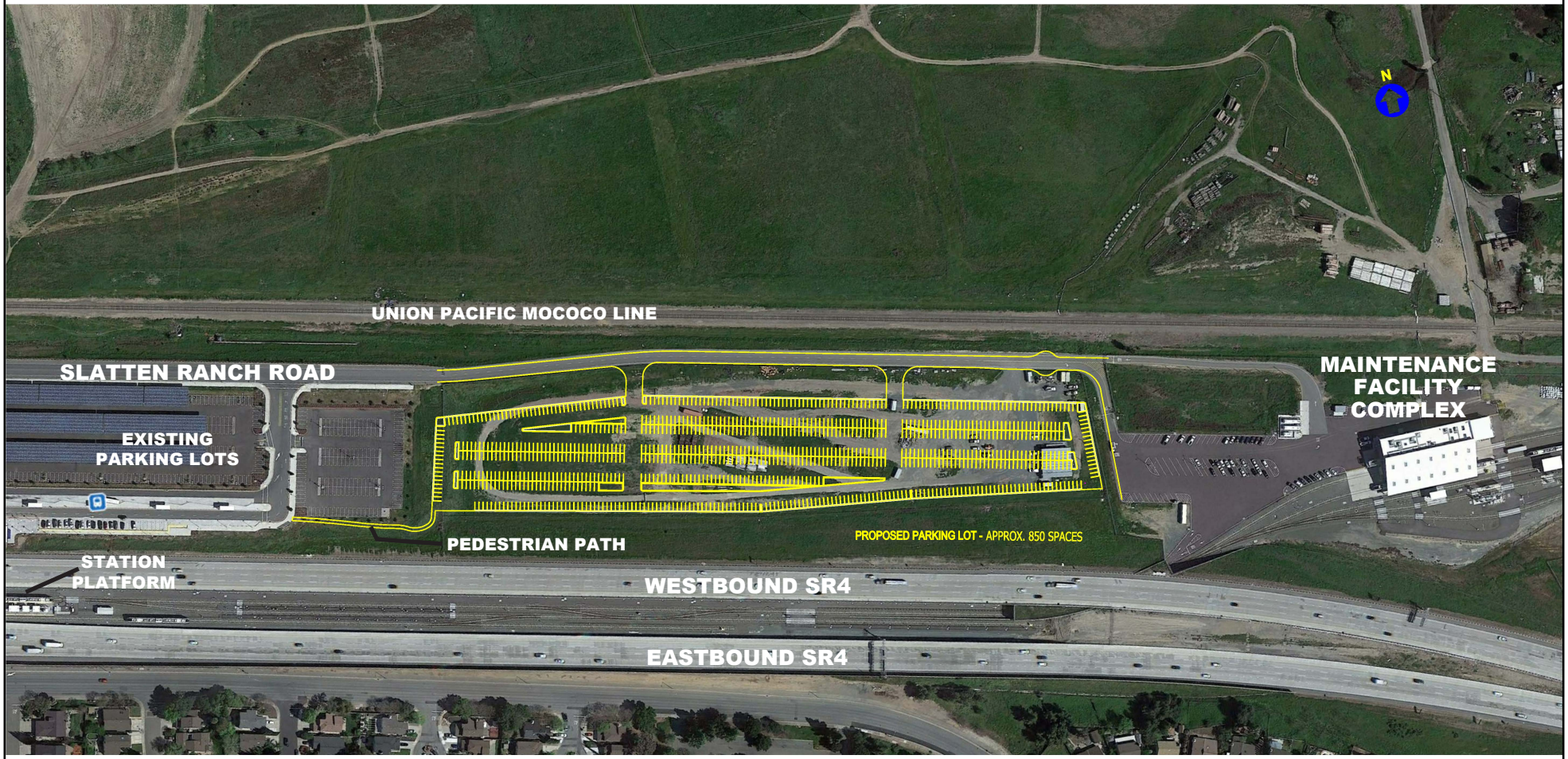
PROJECT LOCATION/VICINITY MAP



Source Date: October, 2018.

Figure 2

ANTIOCH BART STATION



BART

NOT TO SCALE

Source Date: October, 2018.

Figure 3

PARKING LOT EXPANSION PRELIMINARY SITE PLAN

Auto access would be via two driveways on the north side of the lot from Slatten Ranch Road. Figure 3 illustrates the proposed parking plan. The site would be graded and paved with asphalt. Parking lot lighting, CCTV (closed caption television cameras), and emergency phones would be provided. All development would be within the perimeter of the previously disturbed area. The lot would be designed with the following features:

1. Design would include a stormwater management system with minimal maintenance requirements. The stormwater management system for on-site storage and/or detention would follow Contra Costa County Stormwater C.3 Standards and BART's municipal separate storm sewer system (MS4) stormwater requirements.
2. The parking lot would incorporate groundcover and/or other low-growing plants coordinated with the stormwater management system. The landscaping may incorporate bioswales, which are earthen stormwater conveyance systems that absorb low velocity surface water flows or direct runoff from heavy rains into storm drain catch basins.
3. A pedestrian pathway would be constructed from the west end of the new parking lot to the east end of the existing parking lot (Figure 3). This would provide the shortest possible walking distance to the station entrance.
4. The new parking lot design would maintain the approximate 116- to 100-foot-wide road corridor along the northerly limits of the lot, which is intended for future public right-of-way.
5. A new vehicle turn-around would be added at the eastern end of Slatten Ranch Road just before the entrance to the Maintenance Facility for patrons who inadvertently travel east to the terminus of Slatten Ranch Road and need to turn around.
6. Solar panels would be provided in the new parking lot. Large solar panels similar to those on the existing parking lot would be installed along with the infrastructure necessary for the panels. Panels would cover approximately 18 percent of the new parking lot area or approximately 40 percent of the planned parking spaces. The panels would be in the center rows of the parking lot. The landscaping would include low-growing plants such as groundcover and/or bioswales designed to accommodate the solar infrastructure.

Modifications to the Existing Parking Lot

As part of the Revised Project, three modifications are being made in the existing parking lot:

1. The approximately 850-stall increase in parking would require eight accessible parking spaces compliant with the Americans with Disabilities Act (ADA). The accessible parking spaces would not be in the new parking lot but would be incorporated into the existing lot by restriping a portion of the lot near the station entry house. This would place the ADA facilities as close as possible to the station entrance. No construction would be necessary. Approximately 12 standard parking spaces would be replaced by the accessible spaces, reducing the total number of parking spaces in the existing lot by four, from 1,038 to 1,034 spaces.
2. Relocation of passenger drop-off area to consolidate ADA-accessible parking spaces in a central location and to improve circulation.
3. The auto entry lane in the existing parking lot would be modified to improve circulation as it approaches the station entry house. The traffic lanes would be widened from 22 feet to approximately 25 feet by removing some landscaping to provide two full traffic lanes on the approach to the station entry house.

No Solar Panels Option

The No Solar Panels Option would involve installation of additional landscaping in the parking lot instead of installing solar panels. The basic configuration of parking spaces provided would be the approximately the same under this option. This option would incorporate landscaping throughout parking lot, such as planter strips between parking rows. The number of parking spaces would be reduced by approximately 10 percent or 85 spaces to accommodate the planter strips, resulting in a total of approximately 765 spaces. Trees would be planted within the lot and around the perimeter of the site.

The environmental analysis presented in Section 3 considers both the implementation of solar panels and the No Solar Panels Option. For most impact categories, the level of impact is the same. However, where there is a potential difference in level of impacts, this difference is identified (i.e., visual resources, hydrology, and energy).

Construction

Construction is proposed to start in summer 2019 and have a duration of 12 to 14 months. BART anticipates that the new parking spaces would be available by the end of 2020.

Construction activities would include site clearing, site preparation, grading, and installation of paving, landscaping and other site amenities described above. Grading would primarily consist of a cut along the existing slope on the west side of the project site and the spreading of that material over the remainder of the site so that the existing ground level will be raised slightly. No material would be exported off-site. Most of the material below the current ground level would not be disturbed. It is estimated that a maximum of 18 construction workers would be required for each phase of construction. Construction is planned to generally occur within daylight hours Monday through Friday. It is anticipated that no nighttime or weekend construction would occur.

A construction phase analysis estimated that construction activity would include a total of 600 truckloads (assuming 20 percent partial loads), representing a total of 1,200 truck trips (2 trips per load). If these truckloads were concentrated over a concentrated 120-day (6-month) work period, this would represent an average of 10 truck trips per work day. Activity on the peak days when the aggregate base for the parking lot and roadways would be laid would represent an average of 25–30 truck trips per work day. However, construction rarely proceeds so efficiently, and construction is estimated to be 12 to 14 months. Assuming a 12- to 14-month construction period, the average number of truck trips per work day would be fewer (12–15 per day). The types of equipment associated with construction are shown in Table 1 below.

Table 1: Construction Equipment and Usage

Construction Task	***Equipment***	***Number***	***Horsepower (HP)***	***Usage Amount (hours per day)***
Demolition and site clearing	Excavators	3	158	8
	Dozers	2	247	8
Site Preparation	Dozers	1	247	8
	Tractors/loaders/backhoes	4	97	8
Grading	Excavators	1	158	8
	Graders	1	187	8
	Dozers	1	247	8
	Tractors/loaders/backhoes	3	97	8
Paving and Architectural Coating	Pavers	2	130	8
	Paving Equipment	2	132	8
	Rollers	2	80	8
	Air Compressors	1	78	8

Section 3
Environmental Analysis

3.1 Existing Conditions

Construction of the Antioch Station and the associated facilities was completed and the station began operations in May 2018. The new parking lot would be located on a 7.97-acre lot between the existing parking lot and Maintenance Facility that was previous used for construction staging and is currently used for storage. Access to the site is from Slatten Ranch Road east of entrance to the station and existing parking lot.

The proposed site has a flat topography and is at a slightly lower elevation than the existing parking lot and SR 4. It is separated from the existing parking lot to the west by a berm that is approximately 18 feet high and is approximately 15–18 feet below SR 4.

The only improvements at the site consist of some initial spreading of spoils from other areas of the project and a circular driveway constructed to make the site useable in wet weather; the driveway is composed of compacted aggregate (drain rock) to a depth of 12 inches. The site is surrounded by a chain-link fence to provide security for the stored equipment and materials. The remainder of the site primarily consists of hardpacked dirt and sparse vegetation. Figure 3 shows an aerial view of the site.

This site was part of the project area evaluated in the Final EIR and use of the site for construction staging and storage was specifically evaluated in Addendum 3. Conditions in this area are essentially the same as those described in the Final EIR and subsequent Addenda, with the exception of the opening and operation of Antioch Station and associated facilities.

3.2 Environmental Issues

Transportation

Traffic Impacts

The transportation analysis in the Final EIR evaluated potential Project ridership and Project impacts to SR 4, local streets, intersections, local transit operations, parking availability, pedestrian and bicycle circulation, and construction impacts. The Final EIR identified significant impacts at several intersections within the study area and mitigation measures were identified. Implementation of those mitigation measures identified in Section 3.2, Transportation, of the Final EIR would reduce impacts to less than significant, with the exception of impacts at the SR 4 Eastbound Ramps/Hillcrest Avenue intersection, which would remain significant and unavoidable. The three previous Addenda did not identify any new or more severe impacts due project revisions. As illustrated in the Transportation analysis below, the proposed parking expansion (Revised Project) would not create any new or more severe impacts.

Revised Project Traffic Analysis

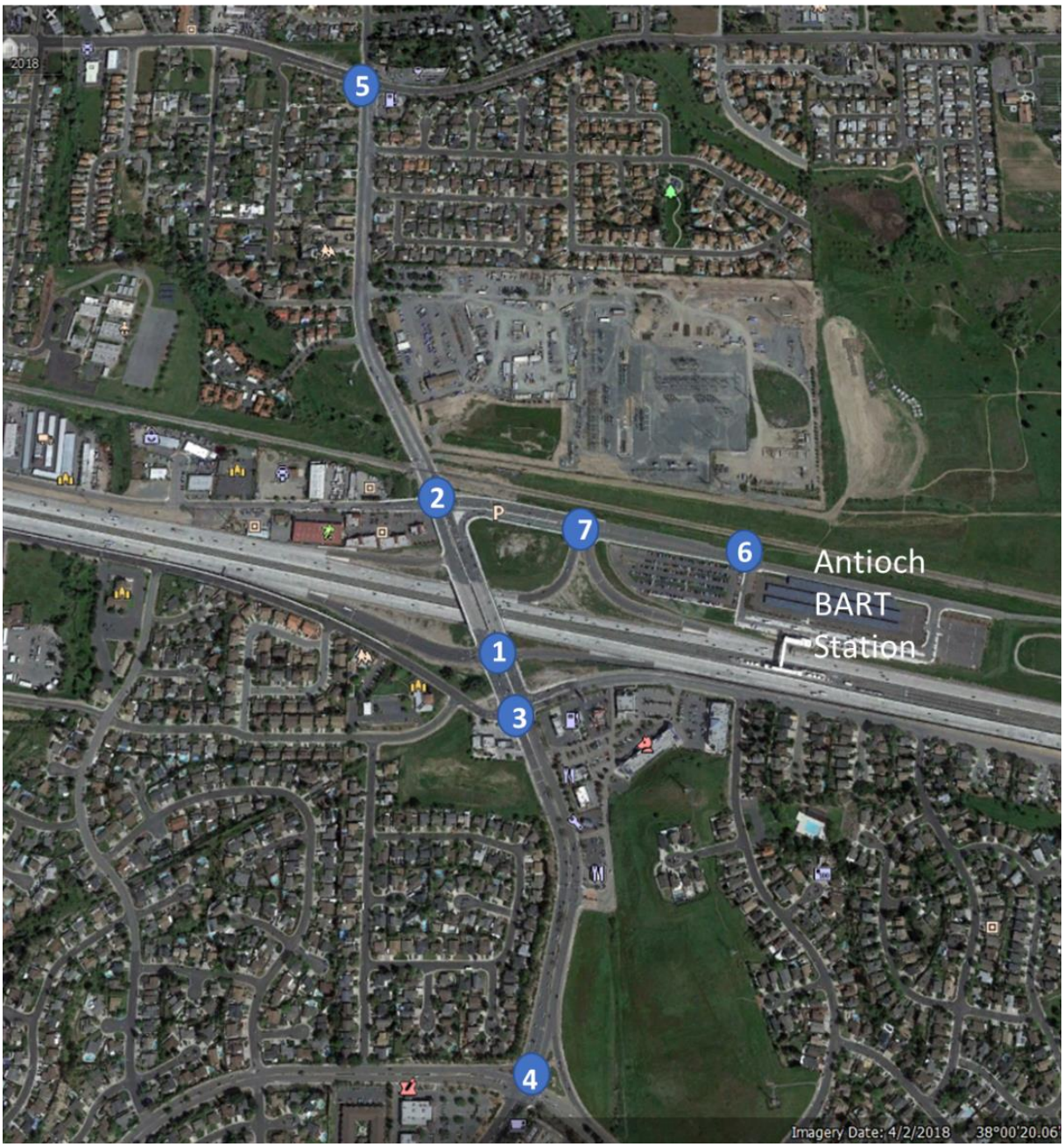
A traffic analysis was conducted for the Revised Project that focuses on the evaluation of impacts at seven key intersections near the Antioch BART station. The study intersections are listed below and shown on Figure 4:

1. Hillcrest Avenue/Eastbound SR 4 Ramps
2. Hillcrest Avenue/Sunset Drive/Slatten Ranch Road
3. Hillcrest Avenue/Tregallas Road/Larkspur Drive

4. Hillcrest Avenue/Davison Drive/Deer Valley Road
5. Hillcrest Avenue/East 18th Street
6. Slatten Ranch Road/BART Parking Lot Entrance
7. Slatten Ranch Road/Westbound SR 4 Off-Ramp

These are the same intersections that were studied in the first Addendum to the Final EIR. That analysis is the most recent analysis conducted of the Antioch BART station traffic conditions.

Figure 4: Revised Project Study Intersections



Source: CDM Smith Analysis – October 2018

Methodology

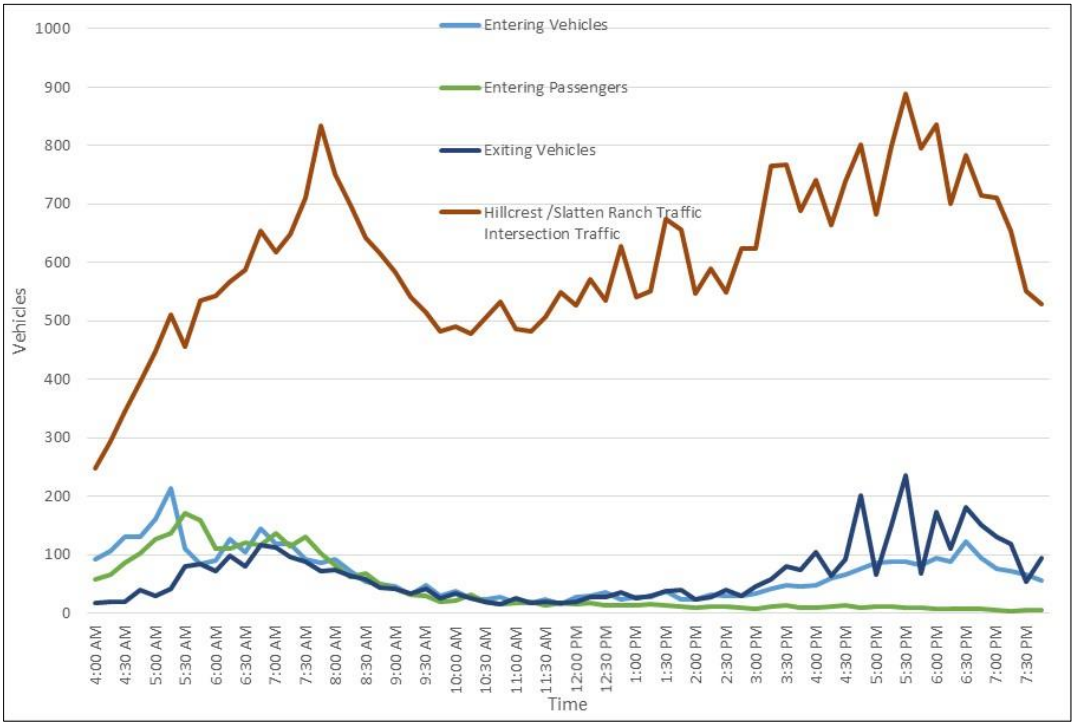
The methodology for the traffic analysis included the following data collection:

- All-day traffic counts were conducted at the Hillcrest Avenue/Sunset Drive/Slatten Ranch Road intersection (Intersection 2) and the Slatten Ranch Road/BART Parking Lot Entrance (Intersection 6). These counts included pedestrian and bicycle observations. The counts were used to determine the peak traffic hour for the Hillcrest Avenue/Sunset Drive/Slatten Ranch Road intersection and for the traffic going in and out of Antioch BART Station.
- AM and PM Peak period counts were conducted at all seven study intersections on August 28, 2018, a Tuesday. These counts are provided in Appendix A.
- Ridership data, entry and exiting gate counts, were obtained from BART for the same week as the traffic counts were conducted.
- Clipper Card data was obtained that provides the zip code information for passengers using the Antioch BART station.

Peak Hour Determination

There are three peak hours related to the station and the project area: the local traffic peak hour (as determined by volumes at Hillcrest/Slatten Ranch Road), the peak for all Antioch BART station traffic (as determined by the combination of inbound and outbound cars at the station), and parking peak (the hour when the greatest number of trips are generated by BART-related parking). It is important to note that not all BART traffic is parking-related. There are numerous drop-offs and ride-share vehicles both before and after all the parking is occupied. It is the parking-related trips that we are most interested in here. The traffic and passenger counts were used to determine the peak hours for the BART station traffic and the surrounding area traffic. The results are illustrated in Figure 5 and Table 2.

Figure 5: Antioch BART Station Passenger/Vehicle Counts by Hour of Day



Source: CDM Smith Analysis – October 2018

AM Peak. As illustrated in Table 2, the peak hour for BART parking-related traffic is 5:00-6:00 AM (443 parking in). The peak hour for all BART traffic entering the Antioch BART station is 6:00 -7:00 AM (468 inbound/342 outbound), whereas the peak hour for traffic in the area, as represented by the Hillcrest Avenue/Slatten Ranch Road intersection, is 7:00-8:00 AM. So generally, in the morning BART passengers arrive well before the peak traffic time on the surrounding streets.

PM Peak. In the afternoon, however, the peak hour for traffic in the area is 5:00-6:00 PM, and the peak hour for all BART-related traffic is 6:00-7:00 PM (400 inbound/618 outbound). It is also important to note that in the afternoon, the peak hour for BART-parking-related traffic leaving the station (251 parking out) is actually 4:00–5:00 PM, one hour before the peak for general traffic in the area. So, in the afternoon the BART peak (for both all traffic and parking only traffic) and the peak for general traffic are closer together than in the morning, a one hour offset, as compared an offset of two hours in the morning peak period.

Trip Generation

The number of vehicle trips associated with parking at BART today (September 2018) was used to estimate the trip generation of the approximately 850 new parking spaces. This was done by analyzing the traffic count information at the Slatten Ranch Road/BART Parking Lot Entrance. In the morning the traffic volume exiting the station was subtracted from the traffic entering the station. The difference represents the number of vehicles that arrived in a given hour and parked. The rest of the vehicles are related to dropping people off or other non-parking-related activities.

The reverse was done to estimate PM peak hour trip generation per space. An adjustment was made to account for people that would arrive at the station in the afternoon and then park in spaces that had been vacated by that time. The results are shown in Table 2. For example, for the AM peak period the peak hour for BART parking arrivals is 5:00-6:00 AM when, out of 572 arriving vehicles, an estimated 443 vehicles park at the station. As the unreserved parking usually fills up before 6:00 AM, the number of vehicles seeking parking declines dramatically after that time. Two hours after the peak arrival hour at Antioch Station the total traffic entering the Hillcrest Avenue/Sunset Drive/Slatten Ranch Road intersection reaches its peak, during the 7:00-8:00 AM hour.

Table 2: Existing BART Station Traffic – Antioch BART Station

AM Peak Period				
	Existing BART Station Traffic			
Hour	Inbound	Outbound	Parking In	Parking Out
4-5 AM	460	96	364	1
5-6 AM	572	129	443	2
6-7 AM	468	342	126	6
7-8 AM	435	362	73	9
8-9 AM	248	200	48	12
PM Peak Period				
	Existing BART Station Traffic			
Hours	Inbound	Outbound	Parking In	Parking Out
3-4 PM	170	259	16	105
4-5 PM	210	444	17	251
5-6 PM	325	514	14	203
6-7 PM	400	618	11	229
7-8 PM	271	397	7	133
	= Peak Hour for BART parking related traffic			
	= Peak Hour for Hillcrest/Slatten Ranch/Sunset Intersection			

Source: CDM Smith Analysis – October 2018

During the PM peak period, the peak departure time for parking-related traffic is 4:00-5:00 PM when 251 parked vehicles leave the station. The peak time for traffic entering the Hillcrest Avenue/Sunset Drive/Slatten Ranch Road intersection is one hour later, 5:00-6:00 PM. So, similar to the situation during the morning peak period, the peak time for BART parking activity occurs before the peak traffic hour for the surrounding area.

As illustrated in Table 2, the trip generation rate for the BART parking varies by the hour. The traffic generation related to parking for any hour can be calculated by dividing the number of vehicles entering (or exiting) parking by the number of spaces (1,040). For example, for the 6:00-7:00 AM hour, when 126 vehicles arrive to use parking, the parking-related traffic generation rate for that hour is:

$$126\ vehicles \div 1{,}040\ total\ spaces\ =\ 0.12\ vehicles/space$$

Multiplying this number (0.12) by the approximate number of new spaces (850) gives the existing parking-related traffic generation for the new parking facility for the 5:00-6:00 AM hour, which would be 103 inbound vehicles per hour. The trip generation related to the new parking for any hour of the day is calculated in this manner, but the adjustment described below was used to reflect changes in traffic patterns that would likely occur when new parking is added.

When the 850 spaces are added it is anticipated that traffic patterns will change somewhat because BART patrons will be able to come later and still get a space. To reflect this, it was decided to shift the traffic generation rates for the new parking-related traffic forward by one hour, taking the traffic that would be calculated from hourly trip rates for the existing period from 3:00-7:00 AM, and using this traffic to represent the time period from 4:00-8:00 AM. Thus, shifting the trip generation for the new parking-related traffic forward by one hour helps to reflect this expected shift in traffic demand.

In the PM peak the increase in demand due to the added spaces is likely to be more uniformly spread; however, to be conservative, the new outbound parking-related traffic generation was shifted forward one

hour so that the traffic generation from the period of 1:00-5:00 PM would represent the expected traffic from 2:00-6:00 PM. This helps reflect the expectation that if people arrive later in the morning to go to work they are likely to return later in the evening to get in their full work day.

Table 3 shows the calculated traffic generation by hour for the AM and PM peak periods and how the shifting of the traffic forward by one hour affects the peak hour for traffic flow in the area.

Table 3: Traffic Generation of New BART Parking (850 Spaces)

AM Peak Period		
	Inbound Parking Trip Generation	
Hour	Based on Existing Traffic	Based on Traffic Shifted One-Hour Forward
4-5 AM	298	72
5-6 AM	362	298
6-7 AM	103	362
7-8 AM	60	103
PM Peak Period		
	Outbound Parking Trip Generation	
Hours	Based on Existing Traffic	Based on Traffic Shifted One-Hour Forward
3-4 PM	86	18
4-5 PM	205	86
5-6 PM	166	205
6-7 PM	187	166

= Peak Traffic Hour

Source: CDM Smith Analysis – October 2018

Table 4 shows the resulting traffic generation when the assumptions described above are used to estimate the number of future trips associated with adding approximately 850 additional parking spaces. First, it is important to note that in the AM period the sum of all the traffic arriving to park under current conditions is 1,076 vehicles, which compares well with the existing count of 1,040 parking spaces, showing that this method of estimating parking-related traffic is accurate since there will be a few people returning to the station in the late morning and vacating their parking space. Because the traffic impact analysis is focused on the peak hour for traffic in the study area, the trip generation shown for the hours of 7:00-8:00 AM and 5:00-6:00 PM in Table 3 were used in the traffic impact analysis. These hours are when traffic volumes entering the Hillcrest Avenue/Sunset Drive/Slatten Ranch Road intersection would be highest. Note that in the afternoon peak period, the hour when the traffic leaving parking at BART is highest coincides with the peak traffic hour for the Hillcrest Avenue/Sunset Drive/Slatten Ranch Road intersection. In the AM peak period, the peak time for the BART parking-related traffic would continue to occur two hours before the peak hour for the Hillcrest Avenue/Sunset Drive/Slatten Ranch Road intersection. The analysis assumes that all approximately 850 new parking spaces would fill up each weekday during the first year of operation, which is likely as there is currently a waiting list of over 1,600 persons for reserved parking permits at the Antioch station.

Table 4: Future BART Parking-Related Traffic Generation – Antioch Station

AM Hours Inbound					
	Existing BART Traffic			Added Future BART Parking Related Traffic with 850 Spaces	Total Future Inbound Parking Related Traffic
Hours	Inbound	Outbound	Parking In (1040 Spaces)		
4-5 AM	460	96	364	72	436
5-6 AM	572	129	443	298	741
6-7 AM	468	342	126	362	488
7-8 AM	435	362	73	103	176
8-9 AM	248	200	48	15	63
9-10 AM	152	143	9	0	9
10-11 AM	114	96	18	0	18
11-12 AM	75	80	-5	0	-5
			1076	850	1926
		= Peak Hour for entering BART parking			
		= Peak Hour for Hillcrest/Slatten Ranch/Sunset Intersection			

PM Hours Outbound					
	Existing BART Traffic			Added Future BART Parking Related Traffic with 850 Spaces	Total Future Outbound Parking Related Traffic
Hours	Inbound	Outbound	Parking Out (1040 Spaces)		
12-1 PM	115	109	15	-	15
1-2 PM	118	132	33	12	45
2-3 PM	113	120	22	27	48
3-4 PM	170	259	105	18	123
4-5 PM	210	444	251	86	337
5-6 PM	325	514	203	205	408
6-7 PM	400	618	229	166	394
7-8 PM	271	397	133	187	320
After 8			50	150	200
Total			1,040	850	1890
		= Peak Hour for exiting BART parking			
		= Peak Hour for Hillcrest/Slatten Ranch/Sunset Intersection			

Source: CDM Smith Analysis – October 2018

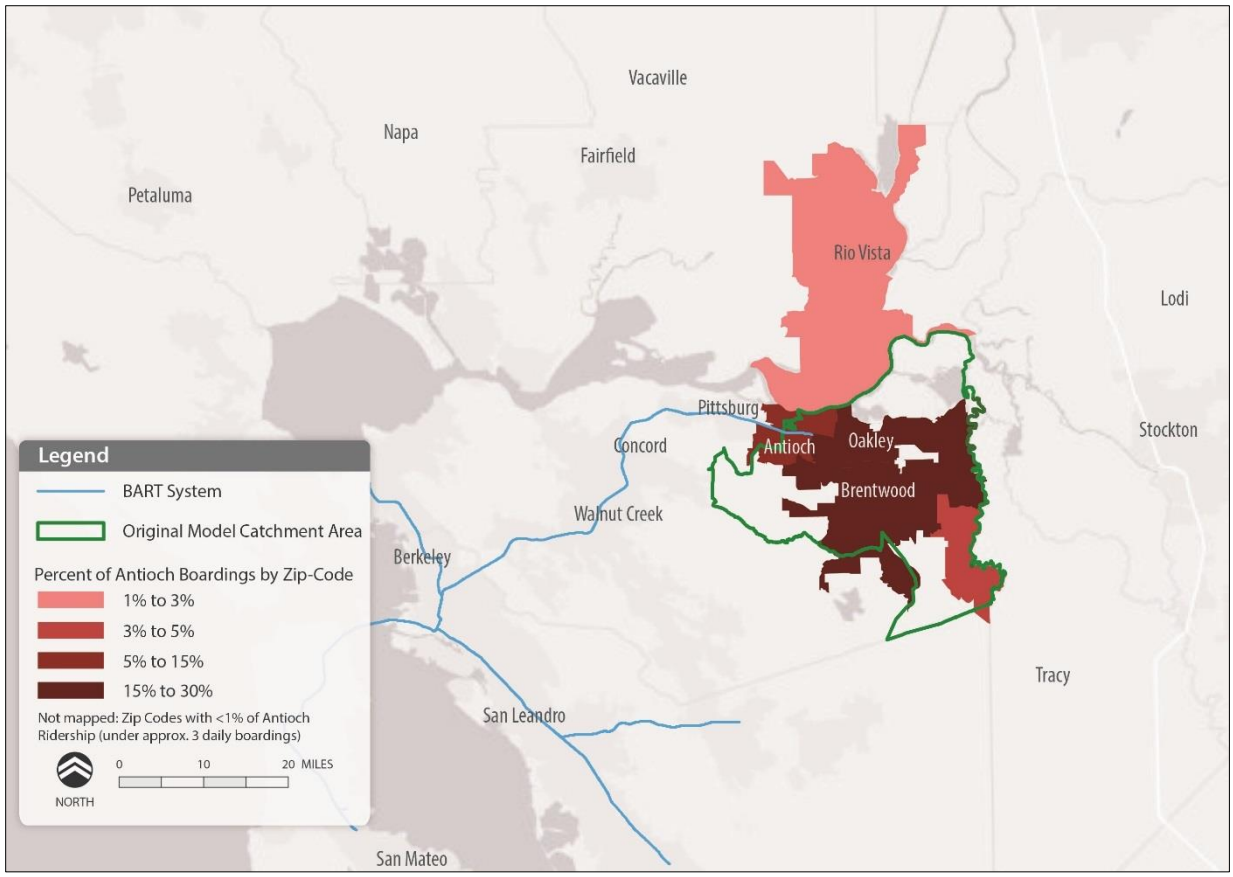
Thresholds of Significance

The City of Antioch has established a standard to maintain level of service (LOS) D or better at all intersections, and the Contra Costa Countywide Transportation Plan has a policy also requiring LOS D or better. The East County Action Plan has established LOS D as the standard for Hillcrest Avenue and Deer Valley Road, which are identified as Routes of Regional Significance. For Caltrans facilities, operational standards and significance criteria are established by the Contra Costa County Transportation Authority (CCTA) acting as the designated Congestion Management Agency (CMA) and responsible for updating and adopting a Congestion Management Plan. As the CMA, the Contra Costa County Transportation Authority establishes traffic LOS standards for all state highway facilities in the county.

Year 2018 Conditions

Traffic conditions for the year 2018 were estimated for both the no project condition and Revised Project represents the construction of approximately 850 additional parking spaces at the Antioch BART station. The trip generation analysis as outlined above was used to estimate the number of additional vehicular trips that would be added during the AM and PM peak traffic hours on a typical weekday. These added trips were distributed over the roadway network based on their trip origin zip code zone as determined from the analysis of the Clipper Card data for the station. Figure 6 shows the distribution of trip origins by zip code.

Figure 6: Zone of Trip Origin Distribution by Zip Code – Antioch BART Station



Source: CDM Smith Analysis – October 2018

The map shows the percentage of BART passengers who use the Antioch station from each zip code zone in the catchment area of the station. The catchment area is the total geographic area from which the riders start their trip. The actual catchment area as indicated by the zip code data is slightly larger than the area estimated in the original traffic studies conducted in 2009.

Table 5 shows the results of the traffic analysis, which was conducted using the Synchro traffic analysis software. Signal timing data was obtained from Caltrans and the City of Antioch.

Table 5: Level of Service Comparison – Year 2018 – No Project and Revised Project Conditions

Intersection	***AM No Project LOS***		***AM Revised Project LOS***		***PM No Project LOS***		***PM Revised Project LOS***	
1 - Hillcrest Avenue/ Eastbound SR-4 Ramps	Delay	20.0	Delay	20.4	Delay	35.0	Delay	37.7
	LOS	C	LOS	C	LOS	D	LOS	D
2 - Hillcrest Avenue/ Sunset Drive/Slatten Ranch Road	Delay	31.0	Delay	32.8	Delay	29.9	Delay	33
	LOS	C	LOS	C	LOS	C	LOS	C
3 - Hillcrest Avenue/ Tregallas Road/Larkspur Drive	Delay	26.3	Delay	26.4	Delay	24.3	Delay	24.4
	LOS	C	LOS	C	LOS	C	LOS	C
4 - Hillcrest Avenue/ Davison Drive/Deer Valley Road	Delay	43.5	Delay	43.6	Delay	51.1	Delay	54.9
	LOS	D	LOS	D	LOS	D	LOS	D
5 - Hillcrest Avenue/ E. 18th Street	Delay	21.9	Delay	22.5	Delay	20.4	Delay	21.6
	LOS	C	LOS	C	LOS	C	LOS	C
6 - Slatten Ranch Road/ BART Parking Lot Entrance	Delay	13.3	Delay	16.2	Delay	15.3	Delay	27.2
	LOS	B	LOS	C	LOS	C	LOS	D
7 - Slatten Ranch Road/ Westbound SR-4 Off-Ramp	Delay	11.1	Delay	11.3	Delay	10.7	Delay	10.8
	LOS	B	LOS	B	LOS	B	LOS	B

Source: CDM Smith Analysis – October 2018

In the AM peak hour, the Revised Project condition would not result in any significant worsening of conditions at the seven study intersections. In the PM peak hour, the Revised Project condition would result in the deterioration of the LOS at one location. Intersection 6 – Slatten Ranch Road/BART Parking Lot Entrance would deteriorate from a LOS C to a LOS D. This intersection is currently controlled by stop signs. The impact would not exceed the threshold of significance, and therefore, the impact is less than significant.

Future Year 2040 Conditions

Year 2040 conditions were estimated by revisiting the analysis conducted in the first Addendum to the Final EIR certified in April 2011. The forecast year of 2040 was selected to represent the long-range future, using the standard Caltrans practice of selecting a time horizon of at least 20 years into the future. To establish a year 2040 no build condition the difference between the year 2015 and year 2030 no build traffic movements at each intersection were calculated. These differences were then increased by a factor of 1.47, which represents the ratio of the 22 years between 2018 and 2040, and the 15-year span addressed in the 2011 Addendum. The Revised Project condition assumes the completion of two roadway projects

that would change traffic circulation in the area, and provide alternative access routes to and from the BART station:

- Slatten Ranch Road would be extended eastward under SR 160 to connect with Neroly Road in Oakley.
- Viera Avenue/Willow Avenue would be extended south to connect with Slatten Ranch Road creating a new connection north to 18th Street and Wilbur Avenue.

These improvements are identified in the City of Antioch's General Plan. It was estimated that 30 percent of the BART station traffic would use these new routes. There would also be other local traffic that would find these routes to be an attractive alternative to using Hillcrest Avenue and the Hillcrest SR 4 interchange. Table 6 provides a comparison of the estimated year 2040 no build and Revised Project conditions.

Table 6: Level of Service Comparison – Year 2040 – No-Build and Build Conditions

Intersection	*AM No Build LOS*		*AM Revised Project LOS*		*PM No Build LOS*		*PM Revised Project LOS*	
1 - Hillcrest Avenue/ Eastbound SR-4 Ramps	Delay	28.3	Delay	28.6	Delay	196.1	Delay	198.4
	LOS	C	LOS	C	LOS	F	LOS	F
2 - Hillcrest Avenue/ Sunset Drive/Slatten Ranch Road	Delay	119.7	Delay	132.3	Delay	66.8	Delay	69
	LOS	F	LOS	F	LOS	E	LOS	E
3 - Hillcrest Avenue/ Tregallas Road/Larkspur Drive	Delay	47.2	Delay	48.4	Delay	66.2	Delay	68
	LOS	D	LOS	D	LOS	E	LOS	E
4 - Hillcrest Avenue/ Davison Drive/Deer Valley Road	Delay	60.5	Delay	61.1	Delay	90.4	Delay	91.9
	LOS	E	LOS	E	LOS	F	LOS	F
5 - Hillcrest Avenue/ E. 18th Street	Delay	22.7	Delay	23.3	Delay	35.7	Delay	38.5
	LOS	C	LOS	C	LOS	D	LOS	D
6 - Slatten Ranch Road/ BART Parking Lot Entrance	Delay	221.3	Delay	248.5	Delay	174.5	Delay	193.9
	LOS	F	LOS	F	LOS	F	LOS	F
7 - Slatten Ranch Road/ Westbound SR-4 Off-Ramp	Delay	71.2	Delay	70.5	Delay	63.3	Delay	63.1
	LOS	E	LOS	E	LOS	E	LOS	E

Note: Highlighted cells represent conditions (level-of-service E or F) that exceed the City of Antioch's level-of-service threshold.

Source: CDM Smith Analysis – October 2018

There are a number of intersections that would be at LOS E or F in the no build condition: four intersections in the AM peak hour, and six intersections in the PM peak hour. These conditions would exceed the City's LOS D threshold. In the Revised Project scenario, the same number of intersections would be affected, and while the amount of delay is increased, in no case was the LOS changed. Therefore, the impact would be less than significant.

Vehicle Miles of Travel

One benefit of adding parking at the Antioch BART station is that vehicle trips that would have occurred on the roadway network would be diverted to transit, saving vehicle miles of travel (VMT) in the region. The following assumptions were used to estimate the annual VMT reduction because of the added parking spaces:

- The approximately 850 spaces would represent 935 vehicle round-trips assuming a daily parking space turnover of 1.1 parked vehicles per space or 1,870 total one-way trips
- One-third (33 percent) of these trips would be existing trips made via transit or drop-offs and therefore would not result in VMT savings
- The average trip length (weighted average) will be 41.1 miles, calculated as shown in Table 7, which is based upon the current travel characteristics of BART riders using the Antioch station
- An annualization factor of 300 average days per year was used to convert daily VMT into annual VMT

Table 7: Average BART Trip Length – Antioch BART Station

Destination	***Percent***	***Distance (Miles)***
San Francisco	48%	45.0
Oakland	20%	37.5
Other	32%	37.4
Average Trip Length	100%	41.1

Source: Google Maps

These calculations result in an estimated annual VMT savings of 15,204,000 VMT. This would be a benefit and would not result in a new significant impact.

Modifications to the Existing Parking Lot and Slatten Ranch Road

Modifications to the existing parking lot include the consolidation of ADA-accessible parking spaces in a central location and the modification of the auto entry lane in the existing parking lot to improve circulation as it approaches the station entry house. The traffic lanes would be widened from 22 feet to approximately 25 feet to provide two full traffic lanes on the approach to the station entry house. Additionally, a new turn-around would be provided on Slatten Road for patrons who inadvertently travel east to the terminus of Slatten Ranch Road and need to turn around. These modifications would improve circulation in the existing parking lot and on Slatten Ranch Road which would be a benefit and no new significant traffic impacts would occur.

Transit Impacts

As described under Impact TR-5 beginning on page 3.2-85 of the Final EIR, the projected 2030 BART ridership with the Project would not exceed the practical capacity of the Concord Line, between Pittsburg/Bay Point and San Francisco International Airport, which is expected to carry the greatest number of riders from the Project. As shown in Table 3.2-26 of the Final EIR, during the AM peak hour, the system would not reach or exceed the practical capacity load factor of 2.10, which represents practical system capacity in 2030 as determined based on existing train loads and average train capacity; impacts on BART system capacity would be less than significant.

The Revised Project would increase the number of parking spaces available to BART riders at Antioch Station. This is likely to result in increased ridership. In addition, the added spaces will likely result in some riders that currently use alternative modes to access the station (i.e., by bus, ride-share, or drop-off), to

drive and park instead, taking advantage of the added parking capacity. This could result in a decrease in riders using transit to access the station. The approximately 850 new parking spaces would add approximately 935 new daily riders if the spaces were to all be used at a rate of 1.1 vehicles per space per day, which is a typical usage rate for BART station parking. An increase in ridership associated with an increase in available parking would not exceed the BART load factor in 2030 of 2.10 identified in the Final EIR. BART has planned service improvements (new cars and 12-minute headways) that would alleviate current crowding in peak hour on the BART system between Pittsburg Bay Point and San Francisco.

The current load factor on eBART trains departing Antioch during the AM peak period (5:00-8:00 AM) is 0.57. The approximately 850 new parking spaces would add approximately 935 new daily riders if the spaces were to all be used at a rate of 1.1 vehicles per space per day, which is a typical usage rate for BART station parking. The current weekday ridership is 8,300 or approximately 4,150 riders westbound, representing an approximate 23 percent increase in ridership. This would increase the eBART load factor to 0.75, which would still leave ample capacity on the trains. Therefore, no decrease in service quality or productivity on the eBART DMU vehicles would occur, and impacts would remain less than significant.

The Final EIR determined that ridership on buses along or near the project corridor is expected to decline as riders shift to the Project; ridership on feeder routes to the Project stations is expected to increase. The Final EIR determined that Tri Delta Transit, the local bus operator, had plans to improve bus service to the new BART stations as well as to improve other local transit services. These improvements were implemented at the time eBART opened, enhancing the amount and quality of bus service to the Antioch BART Station. The Final EIR determined that other transit operators providing service in the study area may experience some increases in ridership because of the increased number of transit riders. The potential increase in ridership were determined to be beneficial to the viability of the transit services. Impacts were determined to be less than significant.

Under the Revised Project, the increased availability of parking that would occur during operation could result in a reduction of bus users using feeder routes to the station (i.e., if drivers chose to drive to the station instead of using the bus). This is anticipated to be a negligible change in bus ridership overall as currently transit ridership to the station is low, and the service quality or productivity of bus service would not be impacted.

The proposed modifications to the existing parking lot, including modifications to the auto entry lane and relocation of passenger drop off to consolidate ADA accessible parking spaces would better facilitate circulation within the existing parking lot. This would be beneficial to transit services operating at the station. Therefore, transit impacts would remain less than significant.

Pedestrian and Bicycle Impacts

The Final EIR determined that the Project would generate a large number of walking and biking trips to and from the new stations. Because at that time there were no sidewalks or bicycle lanes along segments of several thoroughfares to Antioch Station, impacts were determined to be significant. The Final EIR determined that this impact would be mitigated to less than significant with implementation of Mitigation Measure TR-8.1 to construct sidewalks and bicycle lanes along Hillcrest Avenue and Slatten Ranch Road. Construction of the sidewalk and bicycle facilities identified in Mitigation Measures TR-8.1 has been completed.

The increased availability of parking that would occur during operation of the Revised Project could result in a reduction of pedestrians and bicyclists accessing the station (i.e., if drivers chose to drive to the station instead of walking or bicycling), but this is anticipated to be a negligible change and would not affect existing or planned pedestrian or bicycle circulation or accessibility in the project vicinity. Additionally, the new parking lot would be within the station boundaries and would not affect existing sidewalks or bicycle lanes. A pedestrian pathway would be constructed from the west end of the new parking lot to the east end of the existing parking lot to provide shortest possible walking distance to the station entrance.

There would be no additional pedestrian and bicycle related impacts due to the Revised Project.

Construction Impacts

The Final EIR determined that during construction, construction workers, vehicles, and equipment would use SR 4 and local roadways to access construction sites and that lane closures could be necessary for certain construction activities and material deliveries; therefore, temporary impacts on SR 4, local streets, and circulation around the proposed station areas could occur. These temporary construction impacts could be mitigated to less than significant with implementation of Mitigation Measure TR-9.1 to implement a Construction Phasing and Traffic Management Plan. Additionally, the Final EIR determined that construction of the Project would potentially result in significant impacts on Tri Delta Transit services around the station areas, which could be mitigated to less than significant with implementation of Mitigation Measure TR-10.1 to plan, schedule, and coordinate construction activities to reduce effects on local transit bus lines.

During construction of the Revised Project, construction workers, vehicles, and equipment would need to use SR 4 and local roadways to access the project site, however, the number of workers, trucks, and equipment would be less than was required for construction of Antioch Station and would be for a shorter duration. It is estimated that a maximum of 18 construction workers would be required for each phase of construction. A construction phase analysis, which considered all the construction activities requires and the number of truck loads associated with each activity, estimated that construction activity would span approximately 120 work days and include a total of 600 truckloads (assuming 20 percent partial loads), representing a total of 1,200 truck trips (2 trips per load). This represents an average of 10 truck trips per work day. Activity on the peak days when the aggregate base for the parking lot and roadways would be laid, would represent an average of 25–30 truck trips per work day. This analysis was based on an estimated six-month construction period. However, under the expected 12- to 14-month construction period, the average number of truck trips per work day would be fewer (12–15 per day). Further, construction of the Revised Project would occur within the project site boundaries and is not expected to result in the need for lane closures. Therefore, there would be no additional construction traffic-related impacts due to the Revised Project. Additionally, construction activities would be required to adhere to Mitigation Measures TR-9.1 and TR-10.1.

Summary

As described above, the Revised Project would not result in any significant changes to the traffic operations on the circulation network near the Antioch Station, nor would the Revised Project result in any significant transit, pedestrian and bicycle, or construction impacts. Additionally, the new turn-around on the eastern end of Slatten Ranch Road and modifications to the existing parking lot, including consolidating ADA accessible parking spaces and widening traffic lanes, would improve circulation.

No Solar Panels Option: Should the No Solar Panels Option be implemented, the number of parking spaces would be reduced by approximately 85 spaces. This is likely to result in a slightly reduced number of vehicles traveling to and from the site to use the parking facilities. Traffic, transit, pedestrian and bicycle, and construction impacts would be similar or slightly reduced under this option as compared to the Revised Project and, thus, no new significant impacts would occur.

Therefore, the Revised Project would and option not have any new or substantially more severe impacts on transportation than those identified in the Final EIR.

Land Use

The Final EIR and Addenda evaluated the Project's consistency with plans, policies, and programs, and the Project's compatibility with existing uses. The Final EIR determined that the Project would not be incompatible with adjacent and surrounding land uses. California Government Code Section 53090 exempts rapid transit districts like BART from complying with local land use plans, policies, and zoning

ordinances, and thus the Final EIR does not make a significance finding regarding consistency with applicable development policies. Overall, the Final EIR identifies that the Project is consistent with applicable development policies, including the City of Antioch General Plan and development goals and policies.

The proposed parking lot would be adjacent to SR 4 on a parcel (assessor's parcel number [APN]# 052-030-017) that was used for construction staging during construction of Antioch Station and related facilities. It is currently in use as a storage site for BART system operations.

The new parking lot site is surrounded by transportation and transportation-related uses. It is bordered by the Maintenance Facility to the east, the existing Antioch Station parking lot to the west, Slatten Ranch Road, which provides access to the existing parking lot and Maintenance Facility, and Union Pacific Railroad tracks to the north, and SR 4 to the south. The nearest residential uses are across SR 4, more than 300 feet to the south. Land directly to the north is undeveloped. Industrial uses, such as a construction equipment storage yard and vehicle salvage and towing yard, are approximately 700 feet northeast, and a Pacific Gas & Electric distribution facility is located approximately 1,000 feet northwest. The nearest residences to the north are approximately 1,100 feet away.

The new parking lot would not be near any sensitive land uses and would be consistent with the surrounding transportation and transportation-related uses, including Antioch Station and associated facilities, which opened in May 2018. Therefore, the Revised Project would not be incompatible with surrounding land uses, and no significant impacts would occur.

The parking lot site is within the City of Antioch's Hillcrest Station Area Specific Plan (Specific Plan), which was adopted in April 2009. The Specific Plan was prepared in compliance with BART's requirements that a local jurisdiction must prepare a Ridership Development Plan for the area where a new station is proposed. The Specific Plan supports a future transit-oriented development (TOD) near the Antioch Station that includes new sites for employment and a transit village residential neighborhood within walking and bicycling distance to the station. Antioch Station and the parking lot site are in the Specific Plan sub-area identified as the "Freeway Area," which is surrounded by Hillcrest Avenue to the west, Willow Avenue to the east, SR 4 to the south and Slatten Ranch Road to the north. The Freeway Area is identified as accommodating transit facilities (including eBART and associated facilities such as parking), TOD office uses and commercial development. The Specific Plan presents two development concepts for the Freeway Area based on two layouts that were proposed for the location of the eBART station. The concept based on the location for Antioch Station that was ultimately selected, identifies the parking lot site as Office TOD and Community Retail. Office TOD is intended to provide a compact office employment center close to the eBART station, and Community Retail is intended to facilitate the development of a community commercial center with highway frontage. Construction of the additional BART parking would not necessarily preclude the future development of the site for commercial purposes and would yield a substantial benefit to the transit community by providing additional parking in the interim.

The Specific Plan identifies that the development that occurs under the plan is contingent on construction of major infrastructure components that are beyond the City's jurisdiction, including the final location of the eBART station and alignment of the eBART extension. Additionally, the Specific Plan states that development of the Freeway Area requires coordination between the City and BART, including coordination on future development of parking. Consistent with this requirement, BART has been coordinating with the City of Antioch on the proposed parking lot expansion. Also, as noted above, while the parking lot site is identified for Office TOD and Community Retail in the Specific Plan, BART is exempt from complying with local land use plans, policies, and zoning ordinances.

BART is coordinating with the City of Antioch, as specified in the Specific Plan, to develop additional parking available to transit riders, which supports the Specific Plan goal of enhancing multi-modal access and connectivity for pedestrians, bicyclists, automobile drivers, bus, and eBART passengers. Additionally,

the Revised Project is consistent with the City's General Plan, including one of the overall themes of the General Plan, which is to direct new growth to meet community needs and objectives. This theme includes the objective of "enhancing mobility for the movement of people and goods within the community and region through well-designed, balanced transportation systems that provides feasible alternatives to personal automobile travel (pedestrian, bicycle, and transit), and by maintaining a pattern of land uses that supports use of these alternatives modes of transportation."[4] The Revised Project supports this policy by improving site accessibility by providing additional parking and improving site circulation. As described above, based on the provisions of the State Government Code, Section 53090, no significance finding is made relative to the Revised Project's consistency with appropriate local land use policies and goals.

The Revised Project would not have any new or substantially more severe land use impacts than those identified in the Final EIR.

Population and Housing

The Population and Housing evaluation in the Final EIR and Addenda provided an overview of the population, housing, and economic characteristics of the communities in the project corridor. The analysis addresses whether the Project, including development of the Antioch Station and associated facilities, would result in significant impacts associated with inducement of substantial housing and employment growth and displacement due to land acquisition. The Final EIR determined that the Project would not induce substantial unplanned housing or employment growth, but that the impacts of acquisition of properties would be significant for affected privately-owned property and business owners. Mitigation Measure PH-2.1, which requires an acquisition and relocation program, would reduce impacts to less than significant.

The Revised Project would add additional parking capacity to the existing station that would be available for BART users and it would not induce housing or employment growth. The new parking lot site, (APN# 052-030-017) identified as a land acquisition in the Final EIR, Table 3.4-5 (page 3.4-12), was acquired by BART on August 16, 2013, consistent with Mitigation Measure PH-2.1 and applicable state acquisition and relocation laws. The new parking lot would make use of an undeveloped storage area formerly used for construction staging and would not displace or otherwise affect residences or businesses.

The Revised Project would not have any new or substantially more severe impacts on population and housing than those identified in the Final EIR.

Visual Quality

The Visual Quality evaluation in the Final EIR and Addenda addressed the effects of the Project related to its visual compatibility with the surrounding environment, the effect on significant views, and the potential occurrence of disruptive light and glare.

Although the parking lot site itself has not changed, the visual environment in the immediate vicinity has changed as the Antioch Station and Maintenance Facility have taken shape around it. Beyond the development of the Antioch Station and Maintenance Facility, the visual environment has remained consistent with the description in the Final EIR and Addenda. The Final EIR determined that the Antioch Station parking lot would appear out of character with the surrounding undeveloped landscape resulting in a significant impact. There are no feasible measures available to mitigate the loss of rural character in the proposed parking lot areas; therefore, the impact would remain significant and unavoidable. In addition, the Final EIR identified potentially significant impacts associated with light and glare from the stations and glare generated by reflective glass and automobile surfaces. Implementation of Mitigation Measure VQ-6.1 to design lighting fixtures to minimize spillover and avoid noticeable contrast would reduce potential

[4] City of Antioch. City of Antioch General Plan. Prepared by LSA. November 2003 updated.

lighting impacts to less than significant. However, the glare associated with the existing Antioch Station parking lot during daytime hours was determined to be significant and unavoidable even after the implementation of Mitigation Measure VQ-7.1 to visually screen the parking lot with landscaping. The Final EIR also identified potentially significant impacts associated with stockpiling and storage of materials and equipment during construction.

The new parking lot site is undeveloped with a graded loop road. The site is surrounded by a chain-link fence. The site was used for construction staging and is currently used for storage of materials such as railroad rails, ties, ballast and other material. While the new parking lot would change the existing undeveloped character of the site, it would be visually similar to the existing parking to the west and Maintenance Facility to the east. Light poles and large solar panels along with the infrastructure necessary for the panels would be installed in the parking lot, similar to the existing parking lot. The panels would be over the center rows of the parking lot, covering approximately 18 percent of the parking lot area and 40 percent of the parking spaces.

The closest residents are approximately 300 feet to the south across SR 4. These residences face the street frontage along Bluebell Circle, with the backyards aligned along SR 4. In most cases, these residences have backyard fences and landscaping that block most views towards SR 4 and the project site. Additionally, a sound wall along a portion of SR 4 further obscures views of the project site. There are also residences to the north, but these residences are more than 1,100 feet from the new parking lot and views of the parking lot would be distant and indistinct. The closest visual receptors would be auto drivers and passengers along SR 4. Auto speeds along SR 4 are frequently 65 miles per hour and, at those speeds, there would be limited visual exposure to the parking lot. At freeway speed, drivers and passengers would view the project site for approximately 15 to 20 seconds. In addition, SR 4 is on an embankment adjacent to the project site and approximately 15–18 feet above it, further reducing its visibility from the highway.

Because the project site has limited visibility to sensitive receptors, and it is consistent with the surrounding uses that currently exist (i.e., Antioch Station and associated facilities), the parking lot would not have a significant visual impact.

New lighting at the parking lot would be similar to existing lighting at the adjacent facilities and would comply with Mitigation Measure VQ-6.1. The new parking lot is at a lower grade that SR 4 and smaller than the existing parking lot and as such is not expected to result in significant impacts associated with daytime glare. Additionally, the solar panels would further reduce the potential for glare from automobile surfaces to cause an annoyance to motorists.

No Solar Panels Option: Under the No Solar Panels Option, no solar panels would be installed and the landscaping would be supplied consistent with Mitigation Measure VQ-7.1. Therefore, the No Solar Panels Option would not have a significant visual impact.

The Revised Project and option would not have any new or substantially more severe impacts on visual quality than those identified in the Final EIR.

Cultural Resources

The Final EIR and Addenda evaluated the operational and construction effects of the Project on archaeological and historic resources in the project corridor and determined that construction activities have the potential to damage previously unknown cultural deposits or human remains during ground disturbance. Adherence to the requirements identified in Mitigation Measures CR-2.1 and CR-2.2 in the Final EIR that identify protocols and procedures to be followed if archaeological resources or human remains are uncovered during construction, would reduce impacts on cultural resources to less than significant.

There is no indication that there are any unknown subsurface archaeological resources in the project vicinity. Additionally, no resources were uncovered during construction of the Antioch Station and associated BART facilities. Further, the new parking lot is in an area that has been subject to disturbance, including construction of the existing station and associated facilities to the east and west, SR 4 to the south, and the Union Pacific Railroad tracks to the north, and installation of the on-site loop road. Therefore, intact archaeological resources are not expected to be recovered. Additionally, the only grading that would occur under the Revised Project would primarily consist of a cut along the existing slope on the west side of the project site. That material would be spread over the remainder of the site without disturbing the soils below. However, while it is unlikely, the possibility remains that should native soils be disturbed during grading activities archaeological resources could be encountered.

Therefore, the Revised Project would result in the same impacts on potential historic or archeological resources near the Antioch Station as analyzed in the Final EIR. Mitigation Measures CR-2.1 and CR-2.2 identified in Section 3.6, Cultural Resources, of the Final EIR would ensure that the Revised Project would not disturb or destroy undocumented archaeological resources that may be present near the Antioch Station.

The Revised Project would not have any new or substantially more severe impacts on cultural resources than those identified in the Final EIR.

Geology, Soils, and Seismicity

The Final EIR and Addenda assessed the geologic, soil, and seismic hazards along the project corridor and the potential for transit service in this corridor to expose people or structures to these hazards. The Final EIR determined that compliance with project design criteria would ensure that geological risks during project operation would be less than significant. During construction, the Final EIR determined that construction of the Project could result in soil erosion impacts as a result of excavation and grading activities. Mitigation measure GEO-7.1 identified in the Final EIR would require BART's contractors to develop and implement a Stormwater Pollution Prevention Plan (SWPPP) that would include standard temporary erosion control measures. Implementation of best management practices (BMPs) included in the SWPPP would reduce impacts to less than significant throughout the various construction phases. Construction of the Project would also adhere to engineering design standards and principles that are intended to avoid structural failure from soil and limitations and geologic hazards during operation.

The proposed parking lot is on a generally flat site in an area identified in the Final EIR as having silty clay loam and clay loam soils, indicating a low potential for soil erosion. Additionally, the Revised Project would adhere to Mitigation Measure GEO-7.1 requiring preparation of a SWPPP and implementation of BMPs to control erosion, as well as engineering design standards and principles, which would ensure that the Revised Project would have a less than significant impact relative to geology.

The Revised Project would not have any new or substantially more severe geology and soils impacts than those identified in the Final EIR.

Hydrology and Water Quality

The Final EIR and Addenda described the existing hydrology and water quality conditions along the project corridor and evaluated the Project's potential impacts on surface water quality, groundwater, flooding, hydrology, and stormwater runoff. The Final EIR determined that construction activities associated with the Antioch Station and ancillary facilities could have potentially significant impacts primarily related to soil erosion and siltation that could exacerbate or cause flooding and a violation of water quality standards.

The Final EIR determined that construction of the Antioch Station would involve substantial ground-disturbing activities because a substantial area would be disturbed (51 acres) and expose soils and soil stockpiles to erosion that could clog culverts and restrict runoff. Implementation of Mitigation Measure HY-

6.1 requiring development and implementation of a SWPPP with specific erosion and sediment BMPs, in combination with Mitigation Measures GEO-7.1 and HY-5.1 would reduce construction-related flooding impacts to less than significant.

The Final EIR further determined that erosion and siltation, as well as other potential contaminants associated with construction equipment and activities, could degrade water quality during construction if contaminants are introduced into East Antioch Creek. Implementation of Mitigation Measure HY-8.1 requiring development and implementation of a SWPPP with specific stormwater discharge BMPs, in combination with Mitigation Measures GEO-7.1 and HY-6.1 would reduce construction-related water quality impacts to less than significant.

As determined in the Final EIR, operation of the Antioch Station and ancillary facilities could have potentially significant impacts related to an increase in impervious surface area and the potential exacerbation of existing constraints on the stormwater drainage system, which could create a flood hazard. Compliance with Contra Costa County Stormwater C.3 Standards and Mitigation Measure HY-1.1, which requires implementation of BMPs to control surface water runoff would reduce impacts to less than significant.

Additionally, during operation, contaminants that have accumulated on impervious surfaces associated with the Project, such as parking lots and pedestrian pathways, could be conveyed by stormwater runoff to local water bodies, thereby degrading the water quality. Landscaping could also be a source for nutrients and pesticides that can enter receiving waters. The Project incorporated design measures to reduce excessive stormwater runoff, including inclusion of bioswales similar to those at the existing Antioch Station parking lot, to capture and treat surface water runoff. Additionally, Mitigation Measure HY-5.1 requires that BART's contractor prepare a SWPPP to document and identify pollutants and describe BMPs to reduce stormwater pollution. Adherence to these design measures and mitigation measures reduces potential operational water quality impacts to less than significant.

The new parking lot site is currently pervious. The new parking lot would be impervious with the exception of landscaped areas, primarily along the boundary. Similar to the existing parking lot at Antioch Station, the new parking lot would include a stormwater management system for on-site storage and/or detention that follows Contra Costa County Stormwater C.3 Standards and BART's municipal separate storm sewer system (MS4) stormwater requirements. The stormwater management system would be coordinated with the landscape design. Due to the incorporation of a stormwater management system to collect runoff from the new parking lot, as well as compliance with mitigation measures requiring development and implementation of BMPs, the Revised Project would have a less than significant impact on hydrology and water quality. The modifications to the existing parking would include widening of traffic lanes from 22 feet to approximately 25 feet by removing some existing landscaped area, which would slightly reduce the amount of pervious surface area. This would result in a minor change in the quantity and quality of stormwater runoff, and it would not exceed the capacity of the existing stormwater management system. Therefore, the modifications to the existing parking lot would not result in any new significant hydrology and water quality impacts.

No Solar Panels Option: Should the No Solar Panels Option be implemented, the amount of impervious areas would be slightly reduced because the amount of landscaping provided would be greater, however, the difference in stormwater runoff would be negligible.

The Revised Project and option would not have any new or substantially more severe impacts on hydrology and water quality than those identified in the Final EIR.

Biological Resources

The Final EIR evaluated the biological resources along the project corridor and the potential for the Project to disturb sensitive biological species and habitats. The Final EIR determined that potential impacts to

biological resources could occur during construction and operation near the Antioch Station due to the presence of suitable habitat for wildlife. Significant impacts that could occur as result of construction and operation of Antioch Station are associated with the loss of foraging habitat for the Swainson's hawk, disturbance of special-status nesting birds such as the burrowing owl, and tree removal. Implementation of mitigation measures specified in the FEIR would reduce these construction and operation impacts to biological resources to less significant.

Habitat loss for the eBART Project was mitigated through in-lieu payments to the East Contra Costa County Conservancy Habitat Conservation Plan and Natural Community Conservation Plan (Conservancy). The Conservancy issued a Certificate of Inclusion for the Antioch Station and Maintenance Facility (Phase II) on January 26, 2012 and a second Certificate of Inclusion for additional grading (Phase II-Addendum 1.0) on September 10, 2013. BART entered into a third agreement with the Conservancy (Phase II-Addendum 2.0) to cover the habitat loss related to the 7.97-acre site for the staging and storage area. The Certificate of Inclusion for the storage area was issued on December 19, 2013. Except for a 0.21-acre portion of the project site, the mitigation for the storage area covers the same area as the proposed parking lot. BART intends to amend its agreement with the Conservancy to mitigate for the additional 0.21 acres not covered under previous agreements.

BART's agreement with the Conservancy requires preconstruction surveys for Western burrowing owl, Swainson's hawk, and San Joaquin kit fox, which are listed species in the Conservancy's HCP/NCCP. Biologists began monitoring the eBART site in February 2012, and consistent with BART's agreement with the Conservancy, preconstruction surveys for sensitive animal species were conducted in August 2012. Surveys and monitoring indicated burrowing owls in the project vicinity, principally along the railroad alignment to the north. There was no evidence of Swainson's hawk; however, due to the presence of potential nest trees in the site vicinity, continued surveys and minimization measures were warranted. There was no evidence of San Joaquin kit fox; and due to the marginal nature of the habitat and its isolated location, it was determined that no further kit fox monitoring would be conducted.[5]

A biological site survey was conducted in compliance with and permit coverage under the Conservancy in October 2018 to determine the suitability of the new parking lot site to support any of the special-status species. The results of the survey are summarized below and provided in full in Appendix B.

Habitat in the new parking lot site is ruderal and highly disturbed, consisting of non-native annual grassland on compacted soils along with bare areas covered in road gravel or barren dirt. Based on the results of the previous surveys discussed above, reduction in habitat due development of the Antioch Station and associated facilities, and the highly disturbed site conditions, only burrowing owl, Swainson's hawk and nesting migratory birds have any potential to be affected by development of the proposed parking area.

No burrowing owls or burrowing owl sign were observed during the survey. Based on the lack of burrowing owl sign, the relatively small number of ground squirrel burrows observed, and the poor quality of the adjacent foraging habitat, along with the increased levels of human activity in the area, this species is unlikely to be present in the new parking lot site. Therefore, the likelihood of burrowing owls being affected by development of the additional parking area is very low.

No Swainson's hawk nest trees are present in the new parking lot site, and the only known nest tree present in the vicinity is approximately 1,500 feet east/northeast of the new parking lot site, and it is separated from it by the existing Maintenance Facility and other offsite human activity. The likelihood that the development of the parking area could affect an active Swainson's hawk nest (if one were determined to be present) is very low. Additionally, as the remaining potential foraging habitat in the new parking lot

[5] San Francisco Bay Area Rapid Transit District, eBART Construction Monitoring Plan, September 17, 2012.

site is small and of poor quality compared to the fields to the north, west and east of the nest tree, the loss of that poor quality foraging habitat to the parking facility is unlikely to affect the species.

As there is currently no evidence of nesting migratory birds in the new parking lot site, development of the proposed parking area is unlikely to affect this resource.

Based on the lack of suitable habitat, as described above, development of land within the new parking lot site is unlikely to affect any special-status plant or wildlife species known from the region and thus no significant impacts would occur.

The Revised Project would not have any new or substantially more severe impacts on biological resources than those identified in the Final EIR.

Noise and Vibration

The Final EIR and Addenda evaluated the noise and vibration impacts associated with eBART's proposed DMU transit vehicles, increased traffic, and Project construction. The Final EIR determined that the Project would have less than significant noise and vibration impacts associated with the operation of the Project, including the increase in traffic surrounding Antioch station. The evaluation further determined that although construction impacts would be temporary, construction activities could have potentially significant impacts on sensitive receptors along the project corridor. Mitigation Measures NO-6.1 requiring implementation of noise reducing construction practices, NO-6.2 requiring designation of a noise disturbance coordinator, and NO-7.1 to employ vibration reducing construction practices would reduce impacts but may not reduce impacts to a less than significant level. Therefore, the Final EIR determined that noise and vibration impacts during construction would be significant and unavoidable.

Table 3.10-18 and Table 3.10-19 of the Final EIR identify the distances at which significant noise and vibration impacts would occur from the various construction activities involved in the Project. The greatest potential for significant impacts identified in the Final EIR are associated with the use of impact pile drivers and construction that occur during nighttime hours. Under the Revised Project, pile drivers would not be used and nighttime construction would not occur. Table 3.10-18 and Table 3.10-19 identify that significant noise impacts for equipment (other than pile drivers) could occur if construction were to take place within 130 feet of residential uses during daytime hours. The closest residences to the new parking lot site are over 350 feet from the site boundary. These residences are to the south, opposite SR 4. There is a sound wall between the residences and SR 4 south of the new parking lot site that would shield those residences south of SR 4 from much of the noise during construction and operation. Additionally, SR 4 is on an embankment above the parking lot site, which would also reduce construction and operations noise to the residences south of SR 4.

As described under Transportation above, the Revised Project would not result in any significant impacts on traffic at intersections near the Antioch Station, and would contribute to an overall reduction in VMT. As shown on Table 3.10-16 of the Final EIR, the predicted increase in noise levels associated with the Project near Hillcrest Avenue and Sunset Drive are well below the "allowable increase," which is the minimum increase in the noise level required to reach the U.S. Federal Transit Administration (FTA) criterion for "moderate impact." The traffic associated with the Revised Project represents a 23 percent increase over the existing volume of BART station related traffic. Additionally, the traffic conditions forecast in the analysis conducted in the first Addendum to the Final EIR certified in April 2011 (the last traffic analysis that was conducted) are all the same or worse that the actual conditions today, indicating that current traffic volumes related are equal to or lower than those predicted in 2011. The increased traffic associated with the Revised Project would continue to be below the minimum increase in noise level and no new significant impacts would occur.

Noise and vibration impacts would be no greater than those analyzed in the Final EIR and the Addenda. Moreover, construction noise and vibration mitigation measures would also apply to construction of the

new parking lot. Therefore, the Revised Project would not have any new or substantially more severe noise and vibration impacts than those identified in the Final EIR.

Air Quality

The Final EIR and Addenda conducted a full analysis of air quality impacts related to the Project, including regional greenhouse gas, ozone precursors, construction exhaust pollutants, fugitive dust, and diesel particulate matter (DPM). The analysis considered the potential impacts related to the use of DMU technology and the increase in local automobile congestion around station areas as they relate to local, state, and federal air quality thresholds.

The Final EIR determined that overall the Project would have a net beneficial impact on the Bay Area's implementation of the Clean Air Plan and a net reduction in regional greenhouse gas and ozone precursor emissions due to a reduction in VMT associated with the Project. The Final EIR determined that the Project would add carbon monoxide (CO) emissions from vehicles using parking lots at the stations. Using conservative assumptions, including overestimating the number of parking spaces that would be provided, the Final EIR determined that CO concentrations at intersections with LOS E and F are below state ambient standards for CO and, thus, would not have a significant impact.

The Final EIR determined that construction activities would generate exhaust pollutants, including CO, reactive organic gases (ROG), nitrous oxides (NOx), and particulate matter (PM_{10} and $PM_{2.5}$), through the use of construction equipment. Construction activities would also generate fugitive dust that could adversely affect sensitive receptors. According to the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines, CO, ROG, and NOx emissions from construction equipment are accounted for in the regional air quality plans and are not expected to impede the region's attainment status. PM_{10} control measures identified by BAAQMD for construction activities would reduce potential construction-related emissions of the Project. With implementation of Mitigation Measures AQ-8.1 to incorporate the BAAQMD control measures and BMPs into construction contracts and AQ-8.2 to implement a construction emission reduction plan for heavy equipment exhaust, impacts were determined to be less than significant. In addition, the Final EIR determined that odors and DPM emitted from construction equipment exhaust would have potentially significant impacts. Mitigation Measure AQ-8.2 requires BART's contractor to design and implement a construction emissions reduction plan for heavy equipment exhaust that would reduce all exhaust-related impacts to a less-than-significant level.

In 2017, subsequent to certification of the Final EIR, BAAQMD adopted new significance thresholds for determining if a project would have significant air quality impacts. The thresholds adopted in 2017, presented in Table 8 below, are used to evaluate whether the Revised Project would result in a new significant impact.

For the Revised Project, construction exhaust emissions associated with construction of the parking lot were estimated using the California Emissions Estimator Model (CalEEMod) using project-specific information, such as the number of proposed parking spaces and the lot acreage, when available. Default assumptions were used when project-specific data was not available. Table 8 summarizes the CalEEMod results and compares them to the BAAQMD's significance thresholds. Appendix C contains the CalEEMod output report. As shown in Table 8, construction of the Revised Project would not exceed the significance thresholds and, as such, no new significant impacts would occur.

Table 8: Summary of Construction-Related Air Quality Impacts

Thresholds of Significance for Construction-Related Criteria Air Pollutants and Precursors		***Project Emissions***	***Significant Cumulative Impact?***
Pollutant/Precursor	**Average Daily Emissions (lb/day)**	**Maximum Daily Emissions (lb/day)**	
ROG	54	12.2	No
NOx	54	45.6	No
PM_{10}	82 (exhaust)	2.4	No
$PM_{2.5}$	54 (exhaust)	2.2	No

Source: BAAQMD. 2017. California Environmental Quality Act Air Quality Guidelines. May. Site accessed November 6, 2018. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

Key:

lb/day = pounds per day; NOx = nitrogen oxides; PM_{10} = inhalable particulate matter; $PM_{2.5}$ = fine particulate matter; ROG = reactive organic gas

As described in the Transportation evaluation, operation of the Revised Project would result in reduced VMT overall. This would further contribute to the beneficial impact on the Bay Area's implementation of the Clean Air Plan and a net reduction in regional greenhouse gas and ozone precursor emissions identified in the Final EIR.

While the Revised Project would result in reduced VMT overall, traffic at intersections near the Antioch Station would increase. As described in the Transportation evaluation, the Revised Project could add 935 daily vehicle round-trips assuming a parking space turnover of 1.1 parked vehicles per space or 1,870 total one-way trips. These trips would occur throughout the day, though primarily in peak morning and afternoon hours. The 2017 BAAQMD CEQA Guidelines have screening criteria for CO impacts that state a less-than-significant impact if the following would occur:

1. Project is consistent with an applicable congestion management program.
2. The Project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
3. The Project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, etc.)

Because the Revised Project is consistent with the Contra Costa County Transportation Authority's Congestion Management Plan and would not increase traffic beyond the levels contained in the BAAQMD's CEQA Guidelines, CO impacts would be less than significant.

As described above, air quality impacts would be less than significant. Therefore, the Revised Project would not have any new or substantially more severe air quality impacts than those identified in the Final EIR.

Public Health and Safety

The Final EIR and Addenda identified hazards that may exist along the project corridor and the potential for these hazards to adversely affect public health and safety. Potential public hazards along the corridor include hazardous materials sites, hazardous materials used in project construction and operation, and overall system safety.

Operation and maintenance of transit vehicles requires the use of hazardous materials including diesel fuel, car-washing chemicals, solvents, and oils that if accidentally released could significantly impact public health and safety. The Final EIR determined that compliance with BART's emergency response procedures,

hazardous material handling/disposal regulations, such as the Resource Conservation and Recovery Act (RCRA) and the California Hazardous Waste Control Law, and Mitigation Measure HS-4.1 to develop and implement a spill prevention plan, would reduce impacts to less than significant.

The Final EIR determined that the project corridor is near hazardous materials sites and as such, construction of the Project could expose construction workers to hazardous materials in contaminated soils and groundwater. However, implementation of mitigation measures, including HS-8.1 to conduct a Phase I Environmental Site Assessment, HS-8.2 to conduct further soil and groundwater investigations, and HS-8.3 to remediate any potential contaminated sites before construction would mitigate impacts to less than significant.

Consistent with the mitigation measures listed above, a Phase I Environmental Site Assessment was prepared for properties to be acquired by BART in 2011, including the property [APN# 052-030-017]) where the new parking lot would be constructed.

Observations made at the site as part of the 2011 Phase I Environmental Site Assessment indicated that the area west of the new parking lot contained multiple pieces of farm equipment, rubbish piles, and two 55-gallon drums with unknown contents. This debris was removed and disposed of properly during construction of Antioch Station and associated facilities. Due to its location between SR 4 and the Union Pacific Railroad tracks and its past agricultural use, the Phase I Report also identified potential soil and groundwater contamination on-site from aerially deposited leads (ADLs) from auto exhaust, spills from railroad operations along the northern property boundary, petroleum pipelines in the railroad right-of-way, and long-term use of agricultural chemicals in the project vicinity. In addition, metals from historic industrial operations uses to the east were identified as potential pollutants.

BART conducted a Phase II soil and groundwater sampling effort in 2011 to assess the potential presence of soil and groundwater contamination for the project area.[6] The results of the Phase II investigation were intended to determine soil handling requirements for construction, potential disposal issues of impacted soil and potential areas of remediation. The Phase II report was completed for the Project footprint, which included the portions of the property that became the existing parking lot and the access road to the Maintenance Facility.

Because the area proposed for the new parking lot was not included in the original project footprint, no sampling was conducted for the subject property in the Phase II Report. However, sampling was conducted at locations on three sides of the new parking lot site and may be considered generally representative of the subject property. The Phase II report made the following findings:

- Soil characteristics across the top 3 feet of all parcels exhibited no impacts from ADLs.
- Pesticides were detected at levels below environmental screening levels (ESLs) at most locations, with concentrations exceeding ESLs occurring on the westernmost portion of the property (APN# 052-030-017) (west of the project site).
- Petroleum hydrocarbons were detected in soil samples near the top of the groundwater (30 feet below ground surface) along a petroleum pipeline easement at the northern edge of the Maintenance Facility from an undocumented release and are impacting groundwater.
- Diesel and motor-oil range hydrocarbons were detected at levels below ESLs across the area sampled.
- Metals from historic industrial operations did not appear to affect on-site parcels.

[6] CDM, Letter Report of Findings, eBART Phase II Environmental Site Assessments of BART Parcels P-5020, P-5030, P-5040, P-5050, and P-5060, July 7, 2011.

Grading for the Revised Project would primarily consist of a cut along the existing slope on the west side of the project site and the spreading of that material over the remainder of the site so that the existing ground level will be raised slightly. The material below the current ground level would not be disturbed. Given that minimal disturbance of material below the current ground level would occur and that no hazardous materials were detected above screening levels in the top 3 feet of the surrounding parcels, contaminated soils are not expected to be uncovered. Groundwater would not be encountered. Therefore, no significant impacts would occur.

The spreading of excess soil from project construction, addition of drain rock, and site paving would serve to encapsulate existing soils. Thus, should contaminated soils be located beneath the disturbed soils, it would be encapsulated and no exposure would occur during operations. Operation of the Revised Project would not change or increase the use, storage, handling, or transport of hazardous materials analyzed in the Final EIR.

The Revised Project would not have any new or substantially more severe impacts to public health and safety than those identified in the Final EIR.

Community Services

The Final EIR and Addenda described community services, specifically police, fire, and emergency medical services, along the project corridor. Information regarding existing services levels was obtained for these service providers to evaluate how the Project might affect their capacity to meet the demand generated by the extension of transit services along SR 4 and if the Project would trigger the need for new police or fire department facilities.

As described in the Final EIR, BART would assume responsibility for law enforcement at Antioch Station along with ancillary facilities. The Antioch Police Department expects an increased workload related to the Project and may require an additional officer but would not require additional police facilities to maintain existing service levels. In addition, operation of the Project would increase the demand for Contra Costa County Fire Protection District (CCCFPD) emergency services but would not trigger the need for additional fire facilities. The Antioch Station is near existing CCCFPD stations that could provide sufficient emergency8. response services with existing staff levels. Therefore, the Final EIR determined that operation of the Project would not have a significant impact on police or fire services along the project corridor.

The Final EIR determined that construction of the Project would require road detours and temporary lane and freeway ramp closures, which have the potential to create traffic disruptions that could impede emergency response times by police and fire departments. To reduce this significant impact to a less than significant level, Mitigation Measure CS-3.1 requires that construction contractors prepare a Traffic Management Plan (TMP) to be implemented during construction of the Project to reduce the potential for traffic disruptions and road detours that could impede emergency response times by police and fire departments. The TMP would be consistent with City and Caltrans roadway construction guidelines and could be implemented as a part of construction-related mitigation measures identified in Section 3.2, Transportation, of the Final EIR.

The Revised Project would not create any new uses, or expansion of population that would require the need for, or provision of, expanded community services, nor does it introduce changes to the size or location of the Antioch Station. The Revised Project would not increase the number of BART personnel or substantially increase the expected level of ridership at Antioch Station. Therefore, the police and fire services identified in the Final EIR would have sufficient capacity to serve the Antioch Station and the additional parking proposed under the Revised Project. Additionally, the Revised Project would not change the expected construction-related impacts to roads and freeways in the project area. Mitigation Measure CS-3.1 and mitigation measures identified in Section 3.2 of the Final EIR would reduce potential impacts to less than significant. Further, the proposed modifications to the existing parking lot and the new vehicle

turn-around at the eastern end of Slatten Ranch Road would improve site circulation, which would benefit all vehicles accessing the Antioch Station, including emergency vehicles.

The Revised Project would not have any new or substantially more severe impacts to community services than those identified in the Final EIR.

Utilities

The Final EIR and Addenda determined that operation of the Project would not exceed available potable water supplies, such that new or expanded municipal water supply entitlements would be needed to meet the expected water demand. Similarly, the Project would generate negligible amounts of wastewater from station and ancillary facilities and would not exceed available wastewater treatment capacity. Therefore, the Project was determined to have less than significant impacts to water and wastewater treatment facilities.

The Final EIR evaluated construction-related impacts based on the potential for disruption to the use of utility lines in the project area. The Final EIR determined that ground excavation activities north of the SR 4 median (i.e., construction of station facilities) could require relocation of underground utilities. However, with compliance with California Government Code (Sections 4216-4216.9) that require BART to notify and coordinate with the affected utility providers prior to beginning construction, and Mitigation Measures UT-3.1, UT-3.2, and UT-3.3 to restrict utility relocations to off-peak hours, arrange temporary backup service, and notify customers of service interruptions, impacts would be reduced to less than significant. Further, implementation of Mitigation Measure UT7.1 would ensure that the locations of existing utilities are confirmed prior to conducting ground-disturbing activities along the project corridor.

The Revised Project would not involve construction of new structures requiring water or wastewater service and would not change water demand or wastewater generation associated with the Project analyzed in the Final EIR. Further, BART has identified the location of utility lines crossing the project site. In addition, the Revised Project would be required to comply with California Government Code (Sections 4216-4216.9) and Mitigation Measures UT-3.1, UT-3.2, and UT-3.3 to ensure that any disturbance to utilities during construction activities would be less than significant.

The Revised Project would not have any new or substantially more severe impacts to utilities than those identified in the Final EIR.

Energy

The Final EIR and Addenda considered the energy required for both the construction and operation of the Project, as well as the energy savings associated with the Project's reduction in VMT. The Final EIR conservatively determined that because a detailed conservation plan was not currently in place for construction, construction of the Project may result in potentially significant energy consumption impacts. Impacts would be reduced to less than significant with implementation of Mitigation Measure EN-4.1 that requires development and implementation of a construction energy conservation plan.

The Final EIR determined that overall, the Project would result in a net reduction in energy consumption by providing an alternative means of transportation to individuals along the project corridor. Additionally, the Project would have beneficial impacts on petroleum demand by reducing reliance on automobiles and thereby reducing VMT.

Energy use associated with construction activities, including new parking lots, was included in the energy analysis for the Project in the Final EIR. Further, construction activities under the Revised Project would also be required to comply with the construction energy conservation plan identified in the Final EIR, which would reduce impacts associated with construction to a less-than-significant level.

Operation of the proposed new parking lot would require minimal amounts of energy associated with parking lot lighting and CCTV. Further, the Revised Project includes installation of solar (photovoltaic) panels over the central portion of the new parking lot. The panels could produce up to approximately one megawatt of electricity in addition to the electricity already being produced by the solar panels at the existing parking lot. This electricity would be sent to the local electrical grid. Because the project would generate more electrical power than it would use, there would be a net energy benefit associated with the Revised Project.

No Solar Panels Option: There is a Revised Project option that would not include the installation of the solar panels. While this option would not a have beneficial impact on energy usage, the lighting fixtures would comply with Building Energy Efficiency standards (Title 24, Part 6 of the California Code of Regulations [CCR]) and would not result in a substantial increase in energy use.

The Revised Project and option would not have any new or substantially more severe energy impacts than those identified in the Final EIR.

Appendix A

Traffic Analysis Supporting Materials

Prepared by National Data & Surveying Services

Hillcrest Ave & EB SR-4 Ramps

Peak Hour Turning Movement Count

ID: 18-08415-001
City: Antioch

Day: Tuesday
Date: 08/28/2018

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

Hillcrest Ave — SOUTHBOUND

AM	0	706	196	1	1595	AM
NOON	0	0	0	0	0	NOON
PM	0	838	323	2	1523	PM

EB SR-4 Ramps — EASTBOUND

AM	NOON	PM	
0	0	0	
0	0	0	0
185	0	328	0
0	0	0	0
812	0	1249	0
AM	NOON	PM	

CONTROL

0

TEV	3700 AM	0 NOON	4340 PM
PHF	0.94		0.98

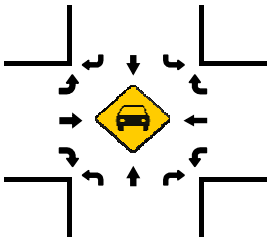
WESTBOUND — EB SR-4 Ramps

PM	NOON	AM	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
730	0	587	
PM	NOON	AM	

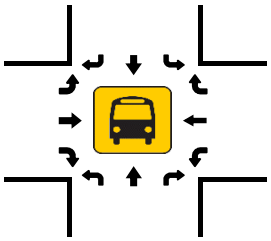
Hillcrest Ave — NORTHBOUND

PM	2087	0	0	1193	407	PM
NOON	0	0	0	0	0	NOON
AM	1518	0	0	1409	391	AM

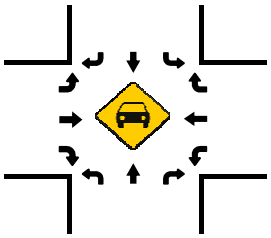
Total Vehicles (AM)



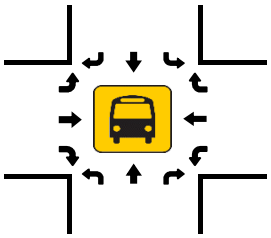
Total Vehicles (AM)



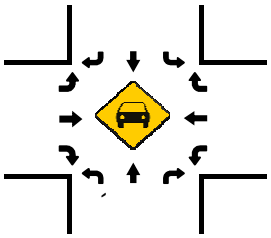
Total Vehicles (NOON)



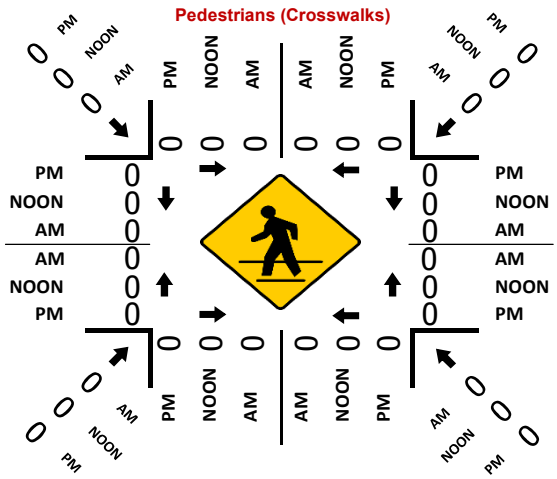
Total Vehicles (NOON)



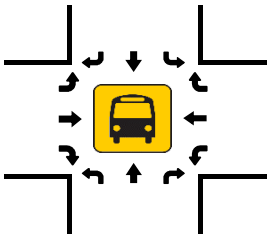
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



Prepared by National Data & Surveying Services

Hillcrest Ave & Sunset Dr/Slatten Ranch Rd

Peak Hour Turning Movement Count

ID: 18-08415-002
City: Antioch

Day: Tuesday
Date: 08/28/2018

PEAK HOURS: AM 07:15 AM - 08:15 AM; NOON NONE; PM 04:45 PM - 05:45 PM

COUNT PERIODS: AM 07:00 AM - 09:00 AM; NOON NONE; PM 04:00 PM - 06:00 PM

Hillcrest Ave — SOUTHBOUND

AM	35	592	40	0	597	AM
NOON	0	0	0	0	0	NOON
PM	29	511	38	0	778	PM

Sunset Dr/Slatten Ranch Rd — EASTBOUND

AM	NOON	PM	
151	0	190	⇦
0	0	0	↶ 0
27	0	41	↱ 0
8	0	16	→ 0
57	0	103	↷ 0
AM	NOON	PM	

CONTROL

0

TEV	3027 AM	0 NOON	3245 PM
PHF	0.94		0.96

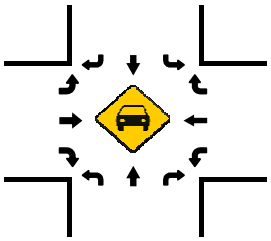
Sunset Dr/Slatten Ranch Rd — WESTBOUND

PM	NOON	AM	
157	0	95	0 ↰
96	0	71	0 ←
724	0	485	0 ↙
0	0	0	0 ↲
835	0	970	⇨
PM	NOON	AM	

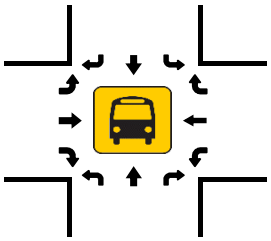
Hillcrest Ave — NORTHBOUND

PM	1442	104	65	580	781	PM
NOON	0	0	0	0	0	NOON
AM	1309	175	45	475	922	AM

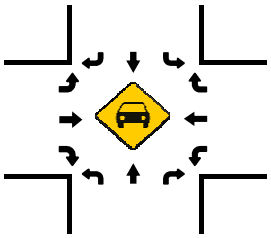
Total Vehicles (AM)



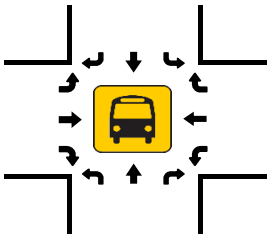
Total Vehicles (AM)



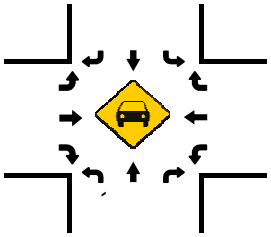
Total Vehicles (NOON)



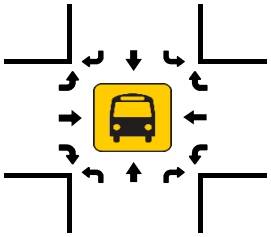
Total Vehicles (NOON)



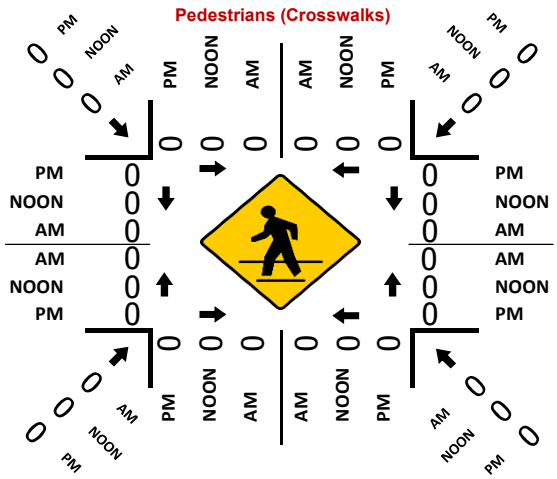
Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

Hillcrest Ave & Tregallas Rd/Larkspur Dr

Peak Hour Turning Movement Count

ID: 18-08415-003
City: Antioch

Day: Tuesday
Date: 08/28/2018

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

Hillcrest Ave — SOUTHBOUND

AM	89	1266	134	0	1775	AM
NOON	0	0	0	0	0	NOON
PM	190	1629	277	0	1625	PM

Tregallas Rd/Larkspur Dr — EASTBOUND

AM	NOON	PM	
198	0	264	
0	0	0	0
157	0	128	0
23	0	49	0
96	0	78	0
AM	NOON	PM	

Tregallas Rd/Larkspur Dr — WESTBOUND

PM	NOON	AM	
194	0	233	0
23	0	31	0
25	0	19	0
0	0	0	0
335	0	166	
PM	NOON	AM	

CONTROL

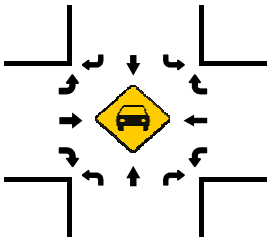
0

TEV	3530	0	3967
	AM	NOON	PM
PHF	0.89		0.97

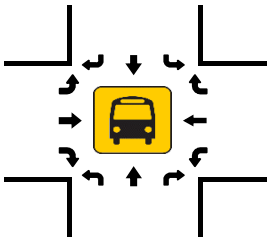
Hillcrest Ave — NORTHBOUND

PM	1743	11	51	1303	9	PM
NOON	0	0	0	0	0	NOON
AM	1391	10	78	1385	9	AM

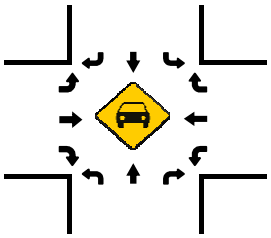
Total Vehicles (AM)



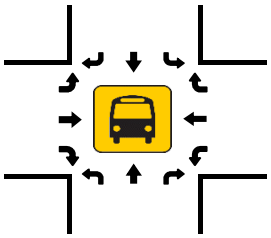
Total Vehicles (AM)



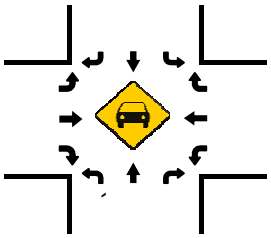
Total Vehicles (NOON)



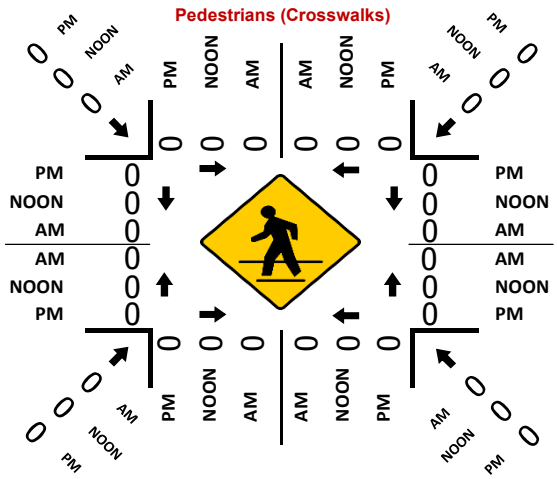
Total Vehicles (NOON)



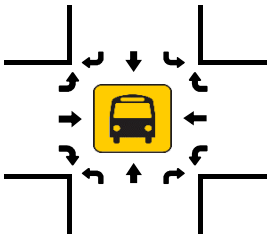
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



Prepared by National Data & Surveying Services

Deer Valley Rd & Davison Dr/Hillcrest Ave

Peak Hour Turning Movement Count

ID: 18-08415-004
City: Antioch

Day: Tuesday
Date: 08/28/2018

PEAK HOURS

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 05:00 PM - 06:00 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

SOUTHBOUND — Deer Valley Rd

AM	126	842	431	0	1510	AM
NOON	0	0	0	0	0	NOON
PM	177	860	720	0	1447	PM

EASTBOUND — Davison Dr/Hillcrest Ave

AM	NOON	PM	
327	0	392	
11	0	11	0
123	0	148	0
104	0	155	0
66	0	96	0
AM	NOON	PM	

WESTBOUND — Davison Dr/Hillcrest Ave

PM	NOON	AM	
510	0	712	0
96	0	137	0
30	0	27	0
2	0	2	0
899	0	548	
PM	NOON	AM	

CONTROL

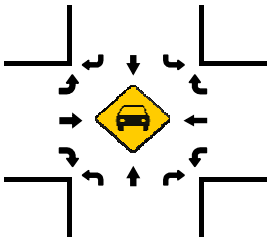
0

TEV	3322 AM	0 NOON	3726 PM
PHF	0.91		0.96

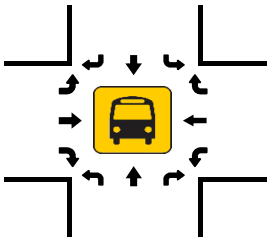
NORTHBOUND — Deer Valley Rd

PM	988	2	108	789	22	PM
NOON	0	0	0	0	0	NOON
AM	937	2	53	675	11	AM

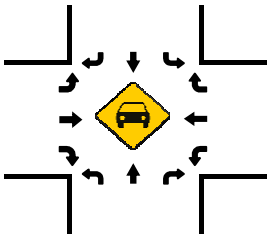
Total Vehicles (AM)



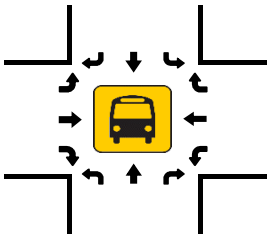
Total Vehicles (AM)



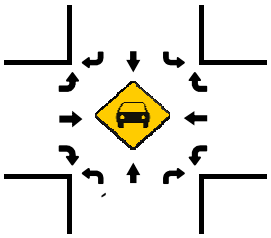
Total Vehicles (NOON)



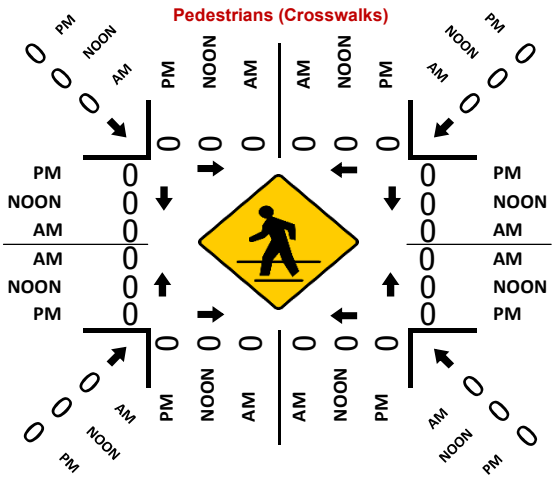
Total Vehicles (NOON)



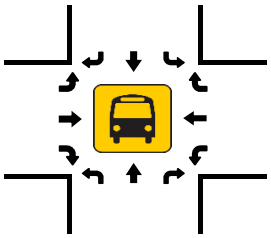
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



Prepared by National Data & Surveying Services

Hillcrest Ave & E 18th St

Peak Hour Turning Movement Count

ID: 18-08415-005
City: Antioch

Day: Tuesday
Date: 08/28/2018

PEAK HOURS

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 05:00 PM - 06:00 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

Hillcrest Ave — SOUTHBOUND

AM	31	97	36	0	120	AM
NOON	0	0	0	0	0	NOON
PM	25	101	39	0	250	PM

EASTBOUND — E 18th St

AM	NOON	PM	
554	0	379	⇦
2	0	0	↩ 0
27	0	32	↱ 0
183	0	210	→ 0
199	0	162	↳ 0
AM	NOON	PM	

WESTBOUND — E 18th St

PM	NOON	AM	
24	0	18	↰ 0
210	0	273	← 0
280	0	306	↶ 0
6	0	6	↲ 0
600	0	497	⇨
PM	NOON	AM	

CONTROL

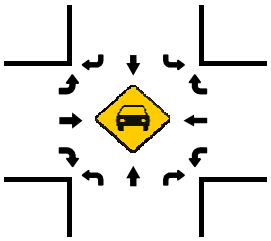
0

TEV	1790	0	1782
	AM	NOON	PM
PHF	0.81		0.97

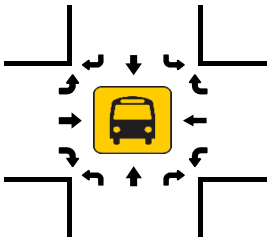
Hillcrest Ave — NORTHBOUND

PM	553	10	144	194	345	PM
NOON	0	0	0	0	0	NOON
AM	619	17	248	75	272	AM

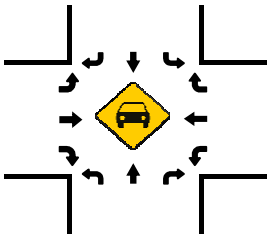
Total Vehicles (AM)



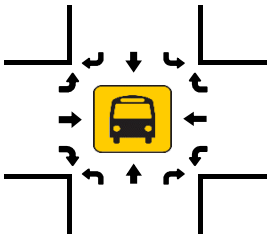
Total Vehicles (AM)



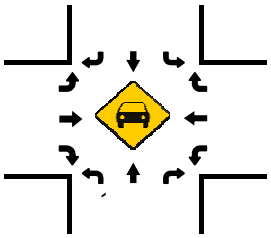
Total Vehicles (NOON)



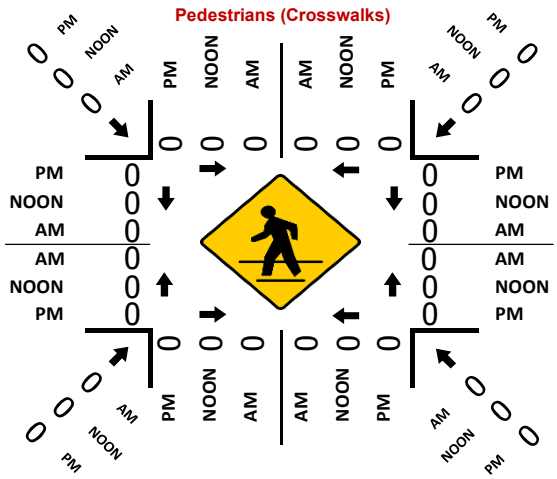
Total Vehicles (NOON)



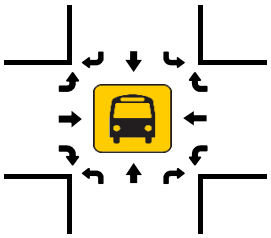
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



Prepared by National Data & Surveying Services

BART Parking Lot Entrance & Slatten Ranch Rd

Peak Hour Turning Movement Count

ID: 18-08415-006
City: Antioch

Day: Tuesday
Date: 08/28/2018

PEAK HOURS

AM: 07:00 AM - 08:00 AM
NOON: NONE
PM: 05:00 PM - 06:00 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

BART Parking Lot Entrance — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

Slatten Ranch Rd — EASTBOUND

AM	NOON	PM		
380	0	514	⇦	
0	0	0	↶	0
0	0	0	↱	0
10	0	9	→	0
425	0	325	↴	0
AM	NOON	PM		

CONTROL

0

TEV	820	0	868
	AM	NOON	PM
PHF	0.79		0.79

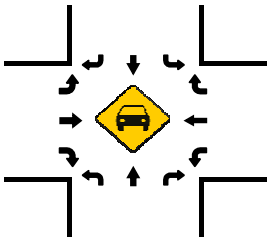
Slatten Ranch Rd — WESTBOUND

PM	NOON	AM		
0	0	0	↰	0
273	0	358	←	0
16	0	4	↰	0
3	0	0	↰	0
13	0	11	⇨	
PM	NOON	AM		

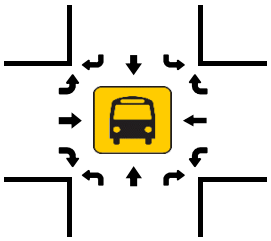
BART Parking Lot Entrance — NORTHBOUND

PM	341	0	241	0	1	PM
NOON	0	0	0	0	0	NOON
AM	429	0	22	0	1	AM

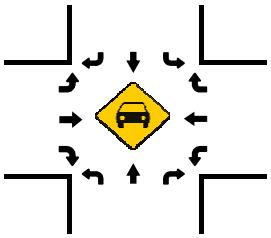
Total Vehicles (AM)



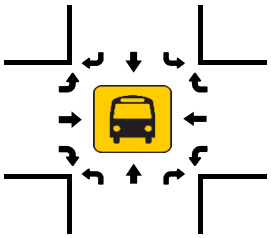
Total Vehicles (AM)



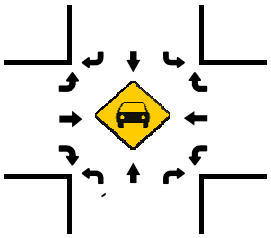
Total Vehicles (NOON)



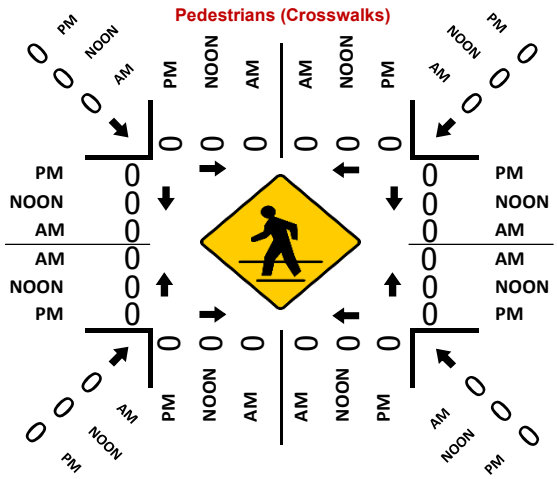
Total Vehicles (NOON)



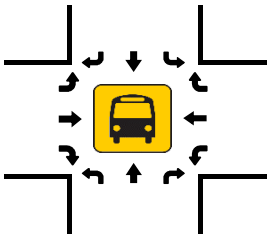
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



Prepared by National Data & Surveying Services

WB SR-4 Off-Ramp & Slatten Ranch Rd

Peak Hour Turning Movement Count

ID: 18-08415-007
City: Antioch

Day: Tuesday
Date: 08/28/2018

PEAK HOURS
AM: 07:00 AM - 08:00 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

COUNT PERIODS
AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

WB SR-4 Off-Ramp — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

Slatten Ranch Rd — EASTBOUND

AM	NOON	PM	
643	0	985	
1	0	1	0
0	0	0	0
263	0	223	0
761	0	615	0
AM	NOON	PM	

Slatten Ranch Rd — WESTBOUND

PM	NOON	AM	
0	0	0	0
468	0	327	0
58	0	53	0
0	0	0	0
307	0	422	
PM	NOON	AM	

CONTROL

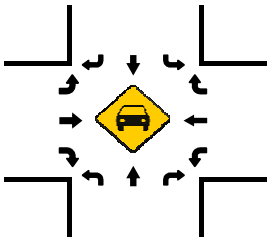
0

TEV	1879	0	1965
	AM	NOON	PM
PHF	0.95		0.92

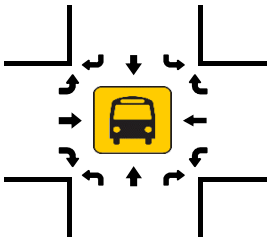
NORTHBOUND — WB SR-4 Off-Ramp

PM	673	0	516	0	84	PM
NOON	0	0	0	0	0	NOON
AM	814	0	315	0	159	AM

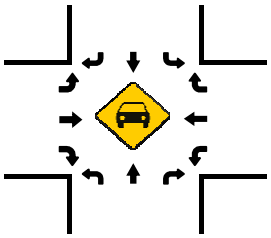
Total Vehicles (AM)



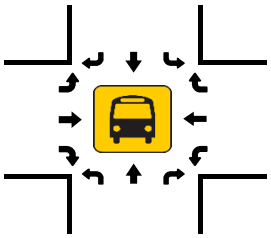
Total Vehicles (AM)



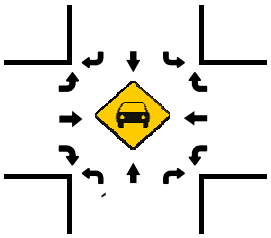
Total Vehicles (NOON)



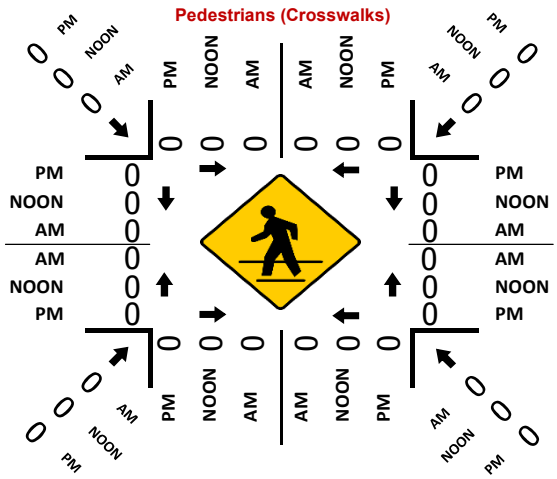
Total Vehicles (NOON)



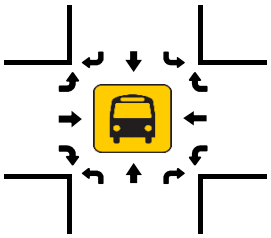
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: BART Parking Lot Entrance & Slatten Ranch Rd
City: Antioch
Control:

Project ID: 18-08488-006
Date: 9/26/2018

Total

NS/EW Streets:	BART Parking Lot Entrance				BART Parking Lot Entrance				Slatten Ranch Rd				Slatten Ranch Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 AM	2	0	0	0	0	0	0	0	0	5	88	0	0	15	0	0	110
4:15 AM	1	0	0	0	0	0	0	0	0	11	95	0	0	19	0	0	126
4:30 AM	2	0	0	0	0	0	0	0	0	27	103	0	0	18	0	0	150
4:45 AM	3	0	0	0	0	0	0	0	0	23	108	0	0	36	0	0	170 556
5:00 AM	0	0	0	0	0	0	0	0	0	31	131	0	0	30	0	0	192
5:15 AM	2	0	1	0	0	0	0	0	0	83	131	0	0	40	0	0	257
5:30 AM	13	0	1	0	0	0	0	0	0	28	83	0	2	68	0	0	195
5:45 AM	10	0	1	0	0	0	0	0	0	9	76	0	3	74	0	0	173 817
6:00 AM	6	0	0	0	0	0	0	0	0	4	87	0	0	66	0	0	163
6:15 AM	10	0	0	0	0	0	0	0	0	3	123	1	1	89	0	0	227
6:30 AM	8	0	1	0	0	0	0	0	0	7	98	0	2	72	0	0	188
6:45 AM	5	0	0	0	0	0	0	0	0	6	140	0	0	112	0	0	263 841
7:00 AM	5	0	0	0	0	0	0	0	0	4	115	0	1	108	0	0	233
7:15 AM	3	0	0	0	0	0	0	0	0	2	117	1	0	93	0	0	216
7:30 AM	7	0	0	0	0	0	0	0	0	1	92	0	0	81	0	0	181
7:45 AM	3	0	0	0	0	0	0	0	0	1	86	2	0	69	0	0	161 791
8:00 AM	3	0	0	0	0	0	0	0	0	1	91	1	2	72	0	0	170
8:15 AM	8	0	0	0	0	0	0	0	0	4	68	0	1	57	0	0	138
8:30 AM	8	0	0	0	0	0	0	0	0	2	53	0	0	51	0	0	114
8:45 AM	3	0	0	0	0	0	0	0	0	2	48	0	1	40	0	0	94 516
9:00 AM	3	0	0	0	0	0	0	0	0	3	42	1	1	39	0	0	89
9:15 AM	5	0	0	0	0	0	0	0	0	1	30	1	2	29	0	0	68
9:30 AM	3	0	1	0	0	0	0	0	0	2	45	0	2	38	0	0	91
9:45 AM	5	0	0	0	0	0	0	0	0	6	23	0	1	21	0	0	56 304
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	118	0	5	0	0	0	0	0	0	266	2073	7	19	1337	0	0	3825
APPROACH %'s :	95.93%	0.00%	4.07%	0.00%					0.00%	11.34%	88.36%	0.30%	1.40%	98.60%	0.00%	0.00%	
PEAK HR :	06:15 AM - 07:15 AM																TOTAL
PEAK HR VOL :	28	0	1	0	0	0	0	0	0	20	476	1	4	381	0	0	911
PEAK HR FACTOR :	0.700	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.714	0.850	0.250	0.500	0.850	0.000	0.000	0.866
		0.725								0.851				0.859			

NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
10:00 AM	2	0	0	0	0	0	0	0	0	0	37	0	0	32	0	0	71
10:15 AM	3	0	0	0	0	0	0	0	0	2	24	0	0	23	0	0	52
10:30 AM	0	0	0	0	0	0	0	0	0	2	21	1	0	20	0	0	44
10:45 AM	1	0	0	0	0	0	0	0	0	4	24	1	0	15	0	0	45 212
11:00 AM	1	0	0	0	0	0	0	0	0	2	16	1	7	24	0	0	51
11:15 AM	2	0	0	0	0	0	0	0	0	1	17	1	0	16	0	0	37
11:30 AM	1	0	0	0	0	0	0	0	0	1	22	0	0	19	0	0	43
11:45 AM	1	0	0	0	0	0	0	0	0	1	15	0	1	16	0	0	34 165
12:00 PM	1	0	1	0	0	0	0	0	0	1	26	0	0	18	0	0	47
12:15 PM	4	0	0	0	0	0	0	0	0	4	26	0	3	23	0	0	60
12:30 PM	3	0	1	0	0	0	0	0	0	1	34	0	1	25	0	0	65
12:45 PM	9	0	0	0	0	0	0	0	0	2	21	0	0	26	0	0	58 230
1:00 PM	8	0	1	0	0	0	0	0	0	4	24	1	1	18	0	0	57
1:15 PM	6	0	0	0	0	0	0	0	0	1	27	0	0	23	0	0	57
1:30 PM	9	0	0	0	0	0	0	0	0	0	38	0	1	28	0	0	76
1:45 PM	8	0	0	0	0	0	0	0	0	1	23	1	1	32	0	0	66 256
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	59	0	3	0	0	0	0	0	0	27	395	6	15	358	0	0	863
APPROACH %'s :	95.16%	0.00%	4.84%	0.00%					0.00%	6.31%	92.29%	1.40%	4.02%	95.98%	0.00%	0.00%	
PEAK HR :	01:00 PM - 02:00 PM																TOTAL
PEAK HR VOL :	31	0	1	0	0	0	0	0	0	6	112	2	3	101	0	0	256
PEAK HR FACTOR :	0.861	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.737	0.500	0.750	0.789	0.000	0.000	0.842
		0.889								0.789				0.788			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:00 PM	3	0	0	0	0	0	0	0	0	2	22	3	1	20	0	0	51
2:15 PM	5	0	0	0	0	0	0	0	0	4	27	0	1	22	0	0	59
2:30 PM	15	0	1	0	0	0	0	0	0	1	28	1	0	25	0	0	71
2:45 PM	4	0	0	0	0	0	0	0	0	4	25	0	0	26	0	0	59 240
3:00 PM	15	0	0	0	0	0	0	0	0	2	31	1	3	31	0	0	83
3:15 PM	18	0	0	0	0	0	0	0	0	0	42	0	1	40	0	0	101
3:30 PM	34	0	0	0	0	0	0	0	0	1	48	0	3	46	0	0	132
3:45 PM	38	0	0	0	0	0	0	0	0	2	44	0	1	37	0	0	122 438
4:00 PM	44	0	0	0	0	0	0	0	0	0	48	1	2	61	0	0	156
4:15 PM	34	0	0	0	0	0	0	0	0	2	59	0	2	31	0	0	128
4:30 PM	43	0	0	0	0	0	0	0	0	3	63	0	0	49	0	0	158
4:45 PM	93	0	0	0	0	0	0	0	0	0	76	1	2	108	0	0	280 722
5:00 PM	23	0	0	0	0	0	0	0	0	2	85	0	3	43	0	0	156
5:15 PM	67	0	0	0	0	0	0	0	0	0	88	0	3	84	0	0	242
5:30 PM	116	0	1	0	0	0	0	0	0	2	86	1	6	120	0	0	332
5:45 PM	19	0	0	0	0	0	0	0	0	1	82	0	1	50	0	0	153 883
6:00 PM	80	0	0	0	0	0	0	0	0	4	90	0	3	94	0	0	271
6:15 PM	35	0	0	0	0	0	0	0	0	1	88	1	3	76	0	0	204
6:30 PM	82	0	0	0	0	0	0	0	0	2	121	2	3	100	0	0	310
6:45 PM	75	0	0	0	0	0	0	0	0	2	92	0	2	76	0	0	247 1032
7:00 PM	59	0	0	0	0	0	0	0	0	3	74	0	3	71	0	0	210
7:15 PM	45	0	0	0	0	0	0	0	0	2	70	1	4	73	0	0	195
7:30 PM	20	0	0	0	0	0	0	0	0	2	64	0	2	35	0	0	123
7:45 PM	41	0	0	0	0	0	0	0	0	2	54	0	3	53	0	0	153 681
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1008	0	2	0	0	0	0	0	0	44	1507	12	52	1371	0	0	3996
APPROACH %'s :	99.80%	0.00%	0.20%	0.00%					0.00%	2.82%	96.42%	0.77%	3.65%	96.35%	0.00%	0.00%	
PEAK HR :	06:00 PM - 07:00 PM																TOTAL
PEAK HR VOL :	272	0	0	0	0	0	0	0	0	9	391	3	11	346	0	0	1032
PEAK HR FACTOR :	0.829	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.563	0.808	0.375	0.917	0.865	0.000	0.000	0.832
		0.829								0.806				0.867			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Hillcrest Ave & Sunset Dr/Slatten Ranch Rd
City: Antioch
Control:

Project ID: 18-08488-002
Date: 9/26/2018

Total

NS/EW Streets:	Hillcrest Ave				Hillcrest Ave				Sunset Dr/Slatten Ranch Rd				Sunset Dr/Slatten Ranch Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 AM	1	7	154	35	6	26	0	0	1	2	2	0	12	2	1	0	249	
4:15 AM	0	10	174	35	4	33	0	0	0	3	1	0	27	2	5	0	294	
4:30 AM	1	4	220	42	7	46	0	0	0	2	1	0	18	3	2	0	346	
4:45 AM	2	20	208	47	8	56	3	0	0	2	8	0	26	6	9	0	395	1284
5:00 AM	2	21	235	51	17	68	1	0	0	4	3	0	37	3	7	0	449	
5:15 AM	2	16	272	56	18	79	0	0	0	5	6	0	47	3	6	0	510	
5:30 AM	2	27	221	45	14	73	1	0	3	1	6	0	41	3	20	0	457	
5:45 AM	5	47	229	65	8	68	4	0	4	5	11	0	59	10	20	0	535	1951
6:00 AM	5	25	267	71	7	73	9	0	1	3	3	0	61	6	12	0	543	
6:15 AM	5	35	251	80	11	74	2	0	0	4	6	0	68	7	25	0	568	
6:30 AM	4	52	233	73	8	93	5	0	2	4	7	0	73	10	23	0	587	
6:45 AM	10	62	241	59	17	82	2	0	3	4	6	0	125	12	32	0	655	2353
7:00 AM	7	55	237	46	12	89	7	0	1	3	10	0	111	13	27	0	618	
7:15 AM	10	73	228	47	11	109	1	0	1	5	8	0	105	17	33	0	648	
7:30 AM	7	142	207	46	10	117	4	0	4	2	11	0	112	20	28	0	710	
7:45 AM	17	151	222	43	7	164	14	0	9	7	14	0	134	14	39	0	835	2811
8:00 AM	6	101	222	40	5	164	5	0	10	4	15	0	126	23	31	0	752	
8:15 AM	13	117	206	31	8	115	7	0	3	4	10	0	135	22	28	0	699	
8:30 AM	14	86	208	38	7	114	7	0	5	2	19	0	93	20	29	0	642	
8:45 AM	17	86	203	32	4	104	9	0	7	3	13	0	105	16	17	0	616	2709
9:00 AM	15	74	224	29	7	93	9	0	7	0	14	0	85	11	16	0	584	
9:15 AM	10	69	208	27	6	101	3	0	8	2	16	0	67	9	16	0	542	
9:30 AM	16	62	196	20	6	76	8	0	5	2	18	0	82	12	12	0	515	
9:45 AM	15	67	160	22	2	76	7	0	6	0	16	0	76	11	24	0	482	2123
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
TOTAL VOLUMES :	186	1409	5226	1080	210	2093	108	0	80	73	224	0	1825	255	462	0	13231	
APPROACH %'s :	2.35%	17.83%	66.14%	13.67%	8.71%	86.81%	4.48%	0.00%	21.22%	19.36%	59.42%	0.00%	71.79%	10.03%	18.17%	0.00%		
PEAK HR :	07:30 AM - 08:30 AM																TOTAL	
PEAK HR VOL :	43	511	857	160	30	560	30	0	26	17	50	0	507	79	126	0	2996	
PEAK HR FACTOR :	0.632	0.846	0.965	0.870	0.750	0.854	0.536	0.000	0.650	0.607	0.833	0.000	0.939	0.859	0.808	0.000	0.897	
	0.907				0.838				0.775				0.952					

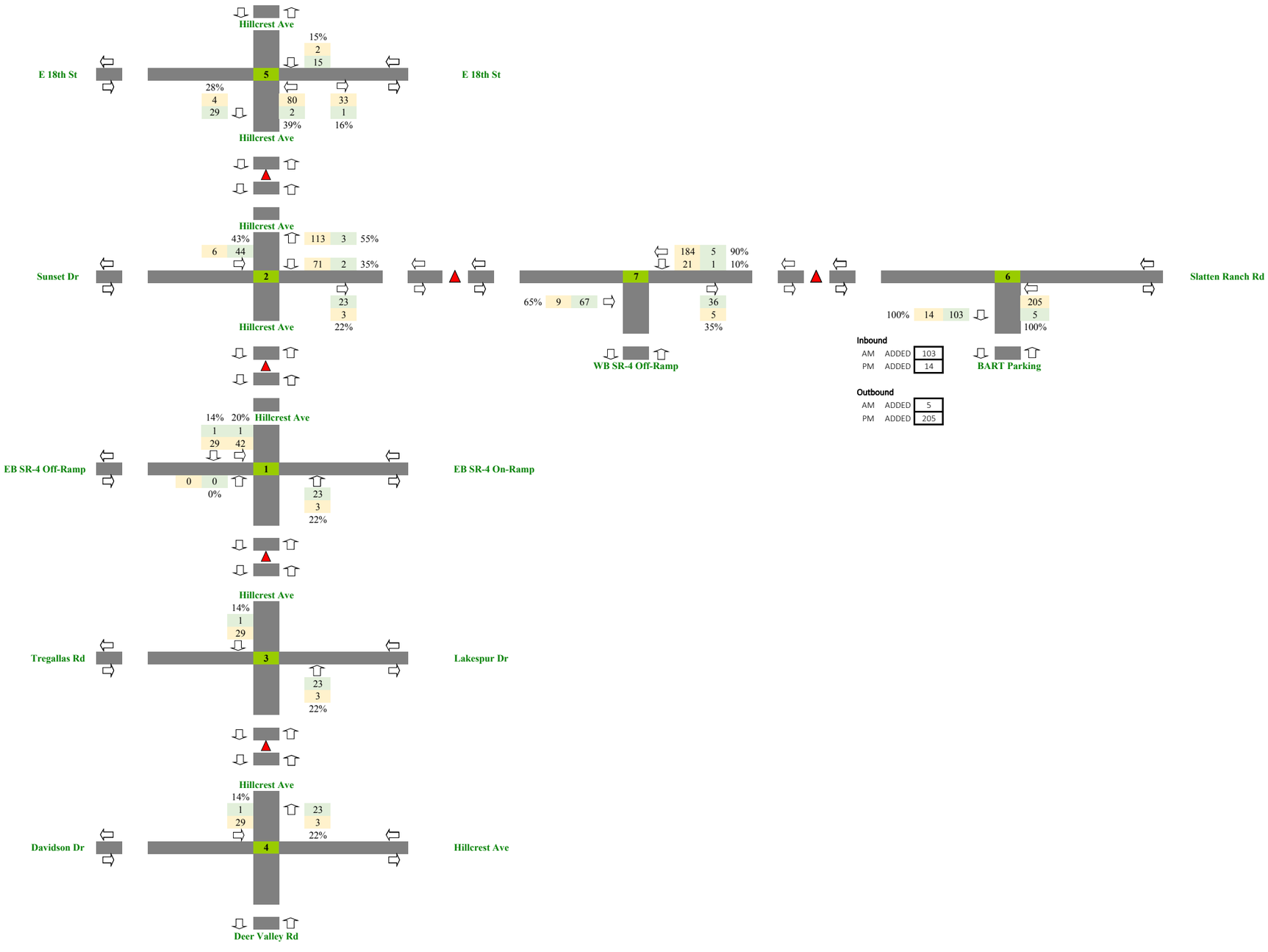
NS/EW Streets:	Hillcrest Ave				Hillcrest Ave				Sunset Dr/Slatten Ranch Rd				Sunset Dr/Slatten Ranch Rd				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
10:00 AM	13	70	179	20	11	78	8	0	6	1	18	0	58	12	17	0	491	
10:15 AM	19	59	171	25	3	90	3	0	6	2	20	0	55	9	17	0	479	
10:30 AM	14	83	187	24	2	82	9	0	3	0	17	0	67	7	9	0	504	
10:45 AM	18	65	188	18	4	86	7	0	5	1	25	0	78	21	18	0	534	2008
11:00 AM	21	77	154	16	3	77	7	0	8	1	22	0	66	15	20	0	487	
11:15 AM	21	80	151	22	2	89	4	0	5	1	20	0	58	7	23	0	483	
11:30 AM	13	86	150	19	6	117	6	0	6	3	22	0	47	14	18	0	507	
11:45 AM	17	110	161	23	1	96	6	0	4	1	15	0	81	11	23	0	549	2026
12:00 PM	11	89	159	21	5	97	8	0	1	1	25	0	81	12	17	0	527	
12:15 PM	21	99	197	21	3	96	5	0	6	4	14	0	70	6	29	0	571	
12:30 PM	14	94	151	20	6	98	10	0	6	2	18	0	82	7	27	0	535	
12:45 PM	11	142	171	16	1	98	9	0	10	2	15	0	118	14	22	0	629	2262
1:00 PM	15	76	155	21	4	107	15	0	5	1	20	0	86	16	20	0	541	
1:15 PM	14	85	165	13	6	95	8	0	12	2	16	0	98	19	19	0	552	
1:30 PM	21	101	203	44	8	114	16	0	9	1	15	0	113	7	23	0	675	
1:45 PM	12	125	194	25	3	119	8	0	14	0	16	0	92	15	33	0	656	2424
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
TOTAL VOLUMES :	255	1441	2736	348	68	1539	129	0	106	23	298	0	1250	192	335	0	8720	
APPROACH %'s :	5.33%	30.15%	57.24%	7.28%	3.92%	88.65%	7.43%	0.00%	24.82%	5.39%	69.79%	0.00%	70.34%	10.80%	18.85%	0.00%		
PEAK HR :	01:00 PM - 02:00 PM																TOTAL	
PEAK HR VOL :	62	387	717	103	21	435	47	0	40	4	67	0	389	57	95	0	2424	
PEAK HR FACTOR :	0.738	0.774	0.883	0.585	0.656	0.914	0.734	0.000	0.714	0.500	0.838	0.000	0.861	0.750	0.720	0.000	0.898	
	0.860				0.911				0.925				0.946					

NS/EW Streets:	Hillcrest Ave				Hillcrest Ave				Sunset Dr/Slatten Ranch Rd				Sunset Dr/Slatten Ranch Rd				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:00 PM	21	79	167	24	6	100	6	0	7	0	15	0	87	13	22	0	547	
2:15 PM	14	103	184	18	7	102	4	0	3	3	16	0	92	10	34	0	590	
2:30 PM	9	101	141	22	5	93	9	0	4	1	21	0	93	12	38	0	549	
2:45 PM	13	127	160	21	5	127	6	0	6	1	13	0	90	21	34	0	624	2310
3:00 PM	19	119	157	23	7	134	11	0	9	2	18	0	83	13	30	0	625	
3:15 PM	14	163	191	22	6	136	8	0	5	0	18	0	140	20	42	0	765	
3:30 PM	14	153	187	20	10	145	10	0	8	5	19	0	147	12	37	0	767	
3:45 PM	14	128	182	24	9	111	5	0	8	0	16	0	141	16	34	0	688	2845
4:00 PM	18	120	192	27	6	114	11	0	4	4	26	0	156	30	34	0	742	
4:15 PM	19	106	155	16	6	91	10	0	8	3	26	0	155	36	33	0	664	
4:30 PM	24	126	189	22	11	113	8	0	4	5	38	0	148	23	29	0	740	
4:45 PM	13	122	205	23	9	89	4	0	2	3	28	0	224	28	52	0	802	2948
5:00 PM	14	118	176	23	10	95	6	0	8	6	36	0	128	20	43	0	683	
5:15 PM	11	121	193	19	11	123	3	0	4	4	22	0	228	22	38	0	799	
5:30 PM	10	124	227	34	11	122	6	0	11	7	29	0	231	23	54	0	889	
5:45 PM	26	165	195	29	6	117	6	0	13	2	23	0	153	19	41	0	795	3166
6:00 PM	22	119	188	17	11	136	6	0	7	5	61	0	207	29	28	0	836	
6:15 PM	6	114	205	18	3	108	4	0	2	1	15	0	166	19	40	0	701	
6:30 PM	10	122	209	24	10	110	2	0	2	4	21	0	222	16	32	0	784	
6:45 PM	18	121	185	15	5	95	1	0	2	6	22	0	186	26	33	0	715	3036
7:00 PM	15	122	178	26	12	110	7	0	8	1	25	0	167	14	26	0	711	
7:15 PM	14	119	161	20	10	105	10	0	4	1	12	0	151	19	29	0	655	
7:30 PM	12	79	143	9	4	100	5	0	7	3	16	0	122	16	36	0	552	
7:45 PM	12	90	147	14	5	86	6	0	8	0	11	0	113	11	26	0	529	2447
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
TOTAL VOLUMES :	362	2861	4317	510	185	2662	154	0	144	67	547	0	3630	468	845	0	16752	
APPROACH %'s :	4.50%	35.54%	53.63%	6.34%	6.16%	88.70%	5.13%	0.00%	19.00%	8.84%	72.16%	0.00%	73.44%	9.47%	17.09%	0.00%		
PEAK HR :	05:15 PM - 06:15 PM																TOTAL	
PEAK HR VOL :	69	529	803	99	39	498	21	0	35	18	135	0	819	93	161	0	3319	
PEAK HR FACTOR :	0.663	0.802	0.884	0.728	0.886	0.915	0.875	0.000	0.673	0.643	0.553	0.000	0.886	0.802	0.745	0.000	0.933	
	0.904				0.912				0.644				0.871					

BART Antioch Traffic Volumes

Applied Inbound and Outbound Additional Traffic Volumes - Build 2018

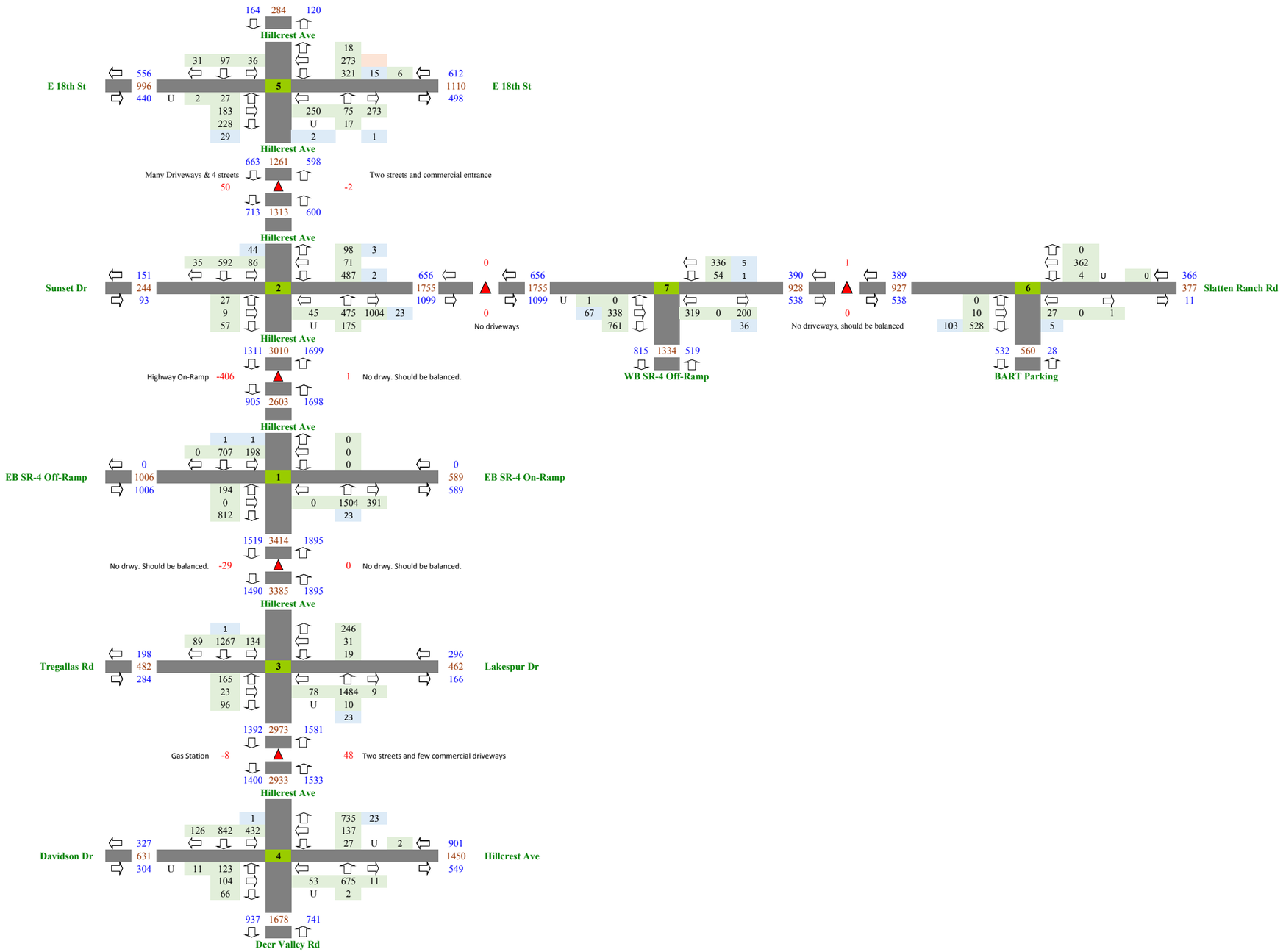
AM Traffic Added
PM Traffic Added



BART Antioch Traffic Volumes

Balanced Volumes - Build AM Peak 2018

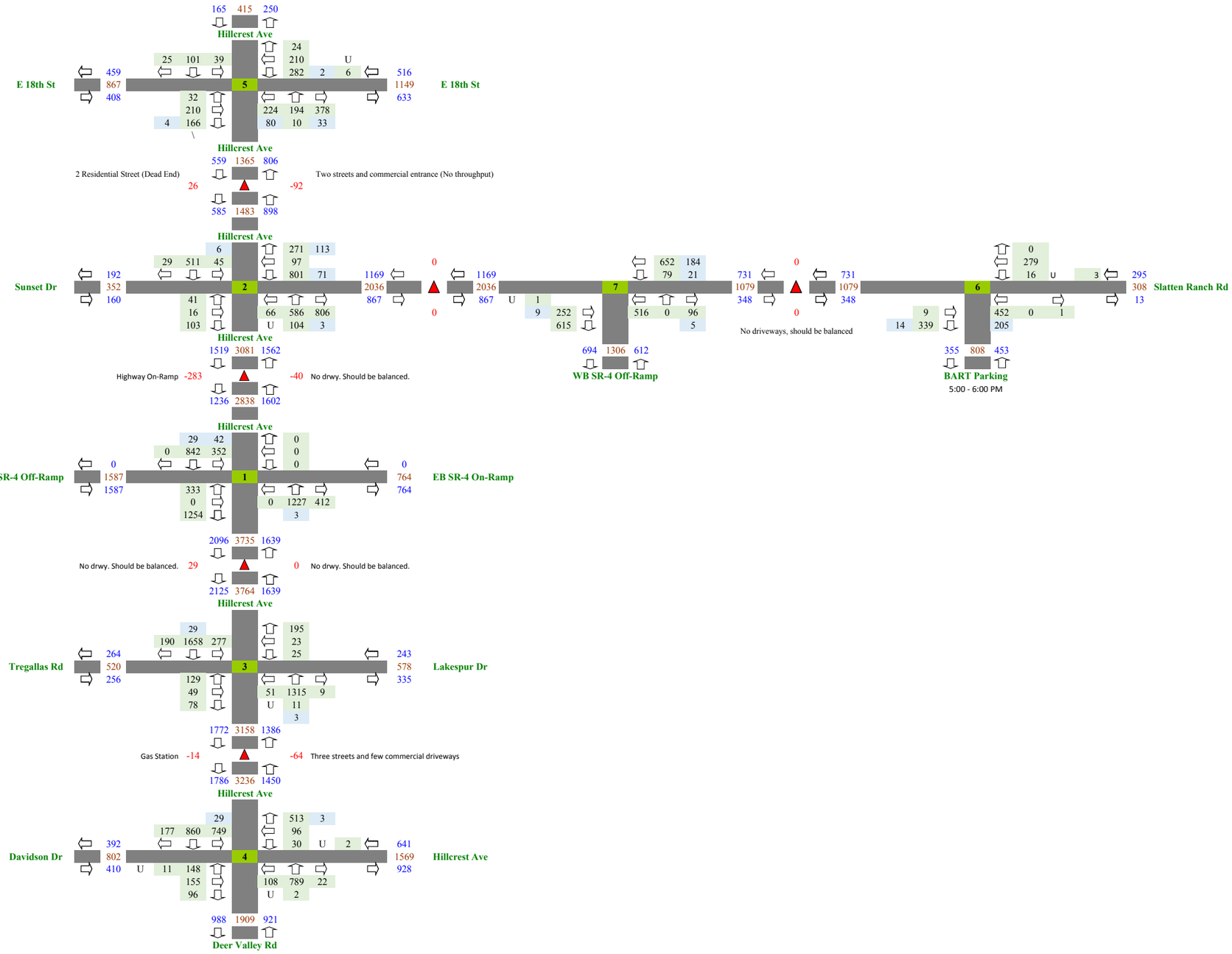
= Additional Volume due to Parking Expansion



BART Antioch Traffic Volumes

Balanced Volumes - Build PM Peak 2018

= Additional Volume due to Parking Expansion



Existing No-Build AM LOS

Intersection		**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	***Intersection Summary***	
1 - Hillcrest Avenue/ Eastbound SR-4 Ramps	Delay	16.6	-	22.8	-	-	-	-	21.4	27.6	28.2	7.0	-	Delay	20.0
	LOS	B	-	C	-	-	-	-	C	C	C	A	-		
	Approach Delay		21.6			-			22.9			12.5		LOS	C
	Approach LOS		C			-			C			B			
2 - Hillcrest Avenue/ Sunset Drive/Slatten Ranch Road	Delay	55.8	47.6		44.4	35.0		52.2	20.9	12.9	53.7	39.4		Delay	31.0
	LOS	E	D		D	D		D	C	B	D	D			
	Approach Delay		49.5			42			21.5			40.2		LOS	C
	Approach LOS		D			D			C			D			
3 - Hillcrest Avenue/ Tregallas Road/Larkspur Drive	Delay	46.6		32.2	41.2	41.8	49.8	45.0	22.7		35.4	20.0	7.4	Delay	26.3
	LOS	D		C	D	D	D	D	C		D	B	A		
	Approach Delay		41.4			48.4			24.6			20.5		LOS	C
	Approach LOS		D			D			C			C			
4 - Hillcrest Avenue/ Davison Drive/Deer Valley Road	Delay	64.5	29.7		64.5	45.7	27.7	62.1	49.8		58.7	36.6	28.4	Delay	43.5
	LOS	E	C		E	D	C	E	D		E	D	C		
	Approach Delay		43.6			39.3			50.9			42.5		LOS	D
	Approach LOS		D			D			D			D			
5 - Hillcrest Avenue/ E. 18th Street	Delay	34.4	24.3		25.5	11.6		26.2	25.4	19.9	19.7	20.0	18.3	Delay	21.9
	LOS	C	C		C	B		C	C	B	B	C	B		
	Approach Delay		25.2			18.8			23.0			19.6		LOS	C
	Approach LOS		C			B			C			B			
6 - Slatten Ranch Road/ BART Parking Lot Entrance	Delay													Delay	13.3
	LOS														
	Approach Delay		12.6			14.2			10.0			-		LOS	B
	Approach LOS		B			B			A			-			
7 - Slatten Ranch Road/ Westbound SR-4 Off-Ramp	Delay		11.3	6	16.2	5.7		12.8		11.1				Delay	8.8
	LOS		B	A	B	A		B		B					
	Approach Delay		7.6			6.9			12.3			-		LOS	A
	Approach LOS		A			A			B			-			

Existing AM Build LOS

Intersection		**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	***Intersection Summary***	
1 - Hillcrest Avenue/ Eastbound SR-4 Ramps	Delay	16.7	-	22.9	-	-	-	-	21.8	28.6	28.3	7.0	-	Delay	20.4
	LOS	B	-	C	-	-	-	-	C	C	C	A	-		
	Approach Delay		21.7			-			23.5			12.5		LOS	C
	Approach LOS		C			-			C			B			
2 - Hillcrest Avenue/ Sunset Drive/Slatten Ranch Road	Delay	55.3	47.2		43.5	34.4		50.9	24.8	16.9	49.8	40.5		Delay	32.8
	LOS	E	D		D	C		D	C	B	D	D			
	Approach Delay		49.1			41.2			24.5			41.6		LOS	C
	Approach LOS		D			D			C			D			
3 - Hillcrest Avenue/ Tregallas Road/Larkspur Drive	Delay	46.6		32.3	41.3	41.8	50.1	45.2	23.0		35.4	20.0	7.4	Delay	26.4
	LOS	D		C	D	D	D	D	C		D	B	A		
	Approach Delay		41.5			48.7			24.8			20.5		LOS	C
	Approach LOS		D			D			C			C			
4 - Hillcrest Avenue/ Davison Drive/Deer Valley Road	Delay	64.5	29.7		64.5	46.3	28.2	62.1	49.8		58.8	36.6	28.4	Delay	43.6
	LOS	E	C		E	D	C	E	D		E	D	C		
	Approach Delay		43.6			39.8			50.9			42.5		LOS	D
	Approach LOS		D			D			D			D			
5 - Hillcrest Avenue/ E. 18th Street	Delay	34.7	24.5		27.5	11.8		26.6	25.7	20.1	19.9	20.2	18.5	Delay	22.5
	LOS	C	C		C	B		C	C	C	B	C	B		
	Approach Delay		25.4			20.0			23.3			19.8		LOS	C
	Approach LOS		C			C			C			B			
6 - Slatten Ranch Road/ BART Parking Lot Entrance	Delay													Delay	16.2
	LOS														
	Approach Delay		17.4			15.1			10.4			-		LOS	C
	Approach LOS		C			C			B			-			
7 - Slatten Ranch Road/ Westbound SR-4 Off-Ramp	Delay		9.0	8.3	21.0	4.2		19.1		20.7				Delay	11.3
	LOS		A	A	C	A		B		C					
	Approach Delay		8.5			6.3			19.6			-		LOS	B
	Approach LOS		A			A			B			-			

Existing No-Build PM LOS

Intersection		**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	***Intersection Summary***	
1 - Hillcrest Avenue/ Eastbound SR-4 Ramps	Delay	18.2	-	65.4	-	-	-	-	26.0	39.2	31.9	9.6	-	Delay	35.0
	LOS	B	-	F	-	-	-	-	C	D	C	A	-		
	Approach Delay		53.5			-			29.5			16.5		LOS	C
	Approach LOS		D			-			C			B			
2 - Hillcrest Avenue/ Sunset Drive/Slatten Ranch Road	Delay	47.5	42.3		36.5	30.0		44.6	28.1	12.6	47.5	36.7		Delay	29.9
	LOS	D	D		D	C		D	C	B	D	D			
	Approach Delay		43.5			34.8			22.4			37.7		LOS	C
	Approach LOS		D			C			C			D			
3 - Hillcrest Avenue/ Tregallas Road/Larkspur Drive	Delay	46.1		33.6	41.5	40.8	32.4	43.3	22.4		38.9	19.9	6.6	Delay	24.3
	LOS	D		C	D	D	C	D	C		D	B	A		
	Approach Delay		42.3			34.4			23.4			21.2		LOS	C
	Approach LOS		D			C			C			C			
4 - Hillcrest Avenue/ Davison Drive/Deer Valley Road	Delay	71.6	44.5		72.0	63.7	30.3	71.2	51.6		90.1	30.6	24.3	Delay	54.5
	LOS	E	D		E	E	C	E	D		F	C	C		
	Approach Delay		54.5			51.8			54.2			55.5		LOS	D
	Approach LOS		D			D			D			E			
5 - Hillcrest Avenue/ E. 18th Street	Delay	35.9	22.1		21.9	9.0		25.8	23.7	20.6	20.5	20.6	19.1	Delay	20.4
	LOS	D	C		C	A		C	C	C	C	C	B		
	Approach Delay		23.3			15.6			22.6			20.3		LOS	C
	Approach LOS		C			B			C			C			
6 - Slatten Ranch Road/ BART Parking Lot Entrance	Delay													Delay	15.3
	LOS														
	Approach Delay		13.4			17.9			14.3			-		LOS	C
	Approach LOS		B			C			B			-			
7 - Slatten Ranch Road/ Westbound SR-4 Off-Ramp	Delay		10.0	8.0	18.4	4.6		18.3		15.9				Delay	10.7
	LOS		A	A	B	A		B		B					
	Approach Delay		8.6			7.0			17.9			-		LOS	B
	Approach LOS		A			A			B			-			

Existing Build PM LOS

Intersection		**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	***Intersection Summary***	
1 - Hillcrest Avenue/ Eastbound SR-4 Ramps	Delay	18.9	-	73.1	-	-	-	-	27.3	41.9	34.0	9.5	-	Delay	37.7
	LOS	B	-	F	-	-	-	-	C	D	C	A	-		
	Approach Delay		59.4			-			31.1			17.6		LOS	D
	Approach LOS		E			-			C			B			
2 - Hillcrest Avenue/ Sunset Drive/Slatten Ranch Road	Delay	49.9	41.1		41.0	35.4		47.6	30.5	14.6	49.9	39.0		Delay	33.0
	LOS	D	D		D	D		D	C	B	D	D			
	Approach Delay		43.0			39.2			24.6			40.1		LOS	C
	Approach LOS		D			D			C			D			
3 - Hillcrest Avenue/ Tregallas Road/Larkspur Drive	Delay	46.4		33.8	41.7	40.9	32.6	43.8	22.3		39.1	20.1	6.6	Delay	24.4
	LOS	D		C	D	D	C	D	C		D	C	A		
	Approach Delay		42.6			34.6			23.4			21.4		LOS	C
	Approach LOS		D			C			C			C			
4 - Hillcrest Avenue/ Davison Drive/Deer Valley Road	Delay	76.7	47.6		77.1	68.7	30.3	76.3	55.8		81.1	30.4	24.3	Delay	54.9
	LOS	E	D		E	E	C	E	E		F	C	C		
	Approach Delay		58.3			54.9			58.5			52.1		LOS	D
	Approach LOS		E			D			E			D			
5 - Hillcrest Avenue/ E. 18th Street	Delay	34.5	25.4		26.1	12.3		25.7	22.6	19.3	18.7	18.7	17.4	Delay	21.6
	LOS	C	C		C	B		C	C	B	B	B	B		
	Approach Delay		26.2			19.4			21.8			18.5		LOS	C
	Approach LOS		C			B			C			B			
6 - Slatten Ranch Road/ BART Parking Lot Entrance	Delay													Delay	27.2
	LOS														
	Approach Delay		18.4			25.1			33.5			-		LOS	D
	Approach LOS		C			D			D			-			
7 - Slatten Ranch Road/ Westbound SR-4 Off-Ramp	Delay		10.4	8.3	18.7	5.0		18.9		16.5				Delay	10.8
	LOS		A	A	B	A		B		B					
	Approach Delay		8.9			7.3			18.5			-		LOS	B
	Approach LOS		A			A			B			-			

Future No-Build AM LOS

Intersection		**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	***Intersection Summary***	
1 - Hillcrest Avenue/ Eastbound SR-4 Ramps	Delay	25.2	-	42.7	-	-	-	-	25.3	35.3	51.4	6.9	-	Delay	28.3
	LOS	C	-	D	-	-	-	-	C	C	D	A	-		
	Approach Delay		36.5			-			27.8			19.1		LOS	C
	Approach LOS		D			-			C			B			
2 - Hillcrest Avenue/ Sunset Drive/Slatten Ranch Road	Delay	103.8	66.4		47.7	20.9		234.6	46.6	180.7	72.7	122.2		Delay	119.7
	LOS	F	E		D	C		F	D	F	E	F			
	Approach Delay		70.7			43.8			170.8			116.6		LOS	F
	Approach LOS		E			D			F			F			
3 - Hillcrest Avenue/ Tregallas Road/Larkspur Drive	Delay	40.8		29.5	37.7	44.4	56.9	136.7	55.5		36.1	25.1	8.5	Delay	47.2
	LOS	D		C	D	D	E	F	E		D	C	A		
	Approach Delay		36.5			53.8			64.2			24.7		LOS	D
	Approach LOS		D			D			E			C			
4 - Hillcrest Avenue/ Davison Drive/Deer Valley Road	Delay	97.8	44.6		100.8	75.1	46.3	91.5	63.0		83.4	39.7	30.7	Delay	60.5
	LOS	F	D		F	E	D	F	E		F	D	C		
	Approach Delay		65.2			64.9			65.8			52.2		LOS	E
	Approach LOS		E			E			E			D			
5 - Hillcrest Avenue/ E. 18th Street	Delay	37.8	23.4		30.1	8.6		33.4	32.2	31.0	32.4	32.9	29.7	Delay	22.7
	LOS	D	C		C	A		C	C	C	C	C	C		
	Approach Delay		24.5			16.2			31.5			32.1		LOS	C
	Approach LOS		C			B			C			C			
6 - Slatten Ranch Road/ BART Parking Lot Entrance	Delay													Delay	221.3
	LOS														
	Approach Delay		212.9			244.2			12.8			-		LOS	F
	Approach LOS		F			F			B			-			
7 - Slatten Ranch Road/ Westbound SR-4 Off-Ramp	Delay		17.7	168.3	41.3	11.5		32.4		30.7				Delay	71.2
	LOS		B	F	D	B		C		C					
	Approach Delay		121.6			15.2			31.9			-		LOS	E
	Approach LOS		F			B			C			-			

Future AM Build LOS

Intersection		**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	***Intersection Summary***	
1 - Hillcrest Avenue/ Eastbound SR-4 Ramps	Delay	25.3	-	42.7	-	-	-	-	25.6	36.1	51.8	6.9	-	Delay	28.6
	LOS	C	-	D	-	-	-	-	C	D	D	A	-		
	Approach Delay		36.6			-			28.3			19.2		LOS	C
	Approach LOS		D			-			C			B			
2 - Hillcrest Avenue/ Sunset Drive/Slatten Ranch Road	Delay	103.8	66.3		46.2	20.4		234.5	50.2	208.5	73.6	137.0		Delay	132.3
	LOS	F	E		D	C		F	D	F	E	F			
	Approach Delay		70.7			42.5			193.3			127.8		LOS	F
	Approach LOS		E			D			F			F			
3 - Hillcrest Avenue/ Tregallas Road/Larkspur Drive	Delay	40.8		29.5	37.7	44.4	56.9	136.7	58.4		36.1	25.1	8.5	Delay	48.4
	LOS	D		C	D	D	E	F	E		D	C	A		
	Approach Delay		36.5			53.8			66.7			24.7		LOS	D
	Approach LOS		D			D			E			C			
4 - Hillcrest Avenue/ Davison Drive/Deer Valley Road	Delay	99.2	44.6		101.2	76.1	47.0	92.8	63.4		84.0	39.9	30.9	Delay	61.1
	LOS	F	D		F	E	D	F	E		F	D	C		
	Approach Delay		65.7			65.7			66.4			52.6		LOS	E
	Approach LOS		E			E			E			D			
5 - Hillcrest Avenue/ E. 18th Street	Delay	39.0	24.1		31.0	8.5		34.5	33.1	31.8	33.3	33.8	30.5	Delay	23.3
	LOS	D	C		C	A		D	C	C	C	C	C		
	Approach Delay		25.2			16.5			32.4			33.0		LOS	C
	Approach LOS		C			B			C			C			
6 - Slatten Ranch Road/ BART Parking Lot Entrance	Delay													Delay	248.5
	LOS														
	Approach Delay		263.6			247.7			13.0			-		LOS	F
	Approach LOS		F			F			B			-			
7 - Slatten Ranch Road/ Westbound SR-4 Off-Ramp	Delay		18.1	168.3	41.3	11.6		32.4		32.7				Delay	70.5
	LOS		B	F	D	B		C		C					
	Approach Delay		119.1			15.2			32.5			-		LOS	E
	Approach LOS		F			B			C			-			

Future No-Build PM LOS

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	*Intersection Summary*	
1	Delay	25.8	-	431.8	-	-	-	-	63.6	80.8	175.4	11.1	-	Delay	196.1
	LOS	C	-	F	-	-	-	-	E	F	F	B	-		
	Approach Delay		314.4			-			68.0			74.8		LOS	F
	Approach LOS		F			-			E			E			
2	Delay	291.5	58.4		31.5	20.2		113.9	74.3	91.5	158.4	68.7		Delay	66.8
	LOS	F	E		C	C		F	E	F	F	E			
	Approach Delay		74.5			28.4			89.0			85.8		LOS	E
	Approach LOS		E			D			F			F			
3	Delay	36.6		29.6	38.5	37.5	28.9	37.7	48.6		160.6	76.1	6.6	Delay	66.2
	LOS	D		C	D	D	C	D	D		F	E	A		
	Approach Delay		35.2			30.6			48.3			84.3		LOS	E
	Approach LOS		D			C			D			F			
4	Delay	163.0	80.4		121.1	136.1	45.6	143.5	105.2		116.5	51.5	27.6	Delay	90.4
	LOS	F	D		F	F	D	F	F		F	D	C		
	Approach Delay		102.8			100.9			109.8			71.5		LOS	F
	Approach LOS		F			F			F			E			
5	Delay	64.6	34.9		47.7	7.7		44.1	45.4	42.2	45.6	37.4	35.4	Delay	35.7
	LOS	E	C		D	A		D	D	D	D	D	D		
	Approach Delay		35.9			27.7			43.2			40.1		LOS	D
	Approach LOS		D			C			D			D			
6	Delay													Delay	174.5
	LOS														
	Approach Delay		214			238.8			53.9			-		LOS	F
	Approach LOS		F			F			D			-			
7	Delay		16.8	145.9	44.8	11.0		32.2		24.4				Delay	63.3
	LOS		B	F	D	B		C		C					
	Approach Delay		107.6			16.9			31.0			-		LOS	E
	Approach LOS		F			B			C			-			

Future Build PM LOS

Intersection		**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	***Intersection Summary***	
1 - Hillcrest Avenue/ Eastbound SR-4 Ramps	Delay	25.8	-	431.8	-	-	-	-	63.9	81.0	224.3	11.1	-	Delay	198.4
	LOS	C	-	F	-	-	-	-	E	F	F	B	-		
	Approach Delay		314.4			-			68.3			96.7		LOS	F
	Approach LOS		F			-			E			F			
2 - Hillcrest Avenue/ Sunset Drive/Slatten Ranch Road	Delay	291.5	58.4		32.2	22.9		113.9	82.5	97.6	134.8	68.7		Delay	69.0
	LOS	F	E		C	C		F	F	F	F	E			
	Approach Delay		74.5			29.4			95.1			81.8		LOS	E
	Approach LOS		E			C			F			F			
3 - Hillcrest Avenue/ Tregallas Road/Larkspur Drive	Delay	36.6		29.6	38.5	37.5	28.9	37.7	48.9		160.6	79.9	6.6	Delay	68.0
	LOS	D		C	D	D	C	D	D		F	E	A		
	Approach Delay		35.2			30.6			48.5			87.2		LOS	E
	Approach LOS		D			C			D			F			
4 - Hillcrest Avenue/ Davison Drive/Deer Valley Road	Delay	163.0	80.4		121.1	136.7	45.7	143.5	105.2		125.3	51.5	27.6	Delay	91.9
	LOS	F	F		F	F	D	F	F		F	D	C		
	Approach Delay		102.8			101.2			109.8			74.9		LOS	F
	Approach LOS		F			F			F			E			
5 - Hillcrest Avenue/ E. 18th Street	Delay	68.4	38.8		52.5	9.0		53.7	43.3	43.2	41.1	36.6	34.7	Delay	38.5
	LOS	E	D		D	A		D	D	D	D	D	C		
	Approach Delay		39.8			30.7			45.2			37.9		LOS	D
	Approach LOS		D			C			D			D			
6 - Slatten Ranch Road/ BART Parking Lot Entrance	Delay													Delay	193.9
	LOS														
	Approach Delay		224.7			241.2			124.5			-		LOS	F
	Approach LOS		F			F			F			-			
7 - Slatten Ranch Road/ Westbound SR-4 Off-Ramp	Delay		17.5	149.1	47.1	12.0		33.1		25.2				Delay	63.1
	LOS		B	F	D	B		C		C					
	Approach Delay		109.8			18.1			31.8			-		LOS	E
	Approach LOS		F			B			C			-			

Appendix B

Biological Survey

Memorandum

Cardno, Inc.

2890 Gateway Oaks Drive,
Suite 200
Sacramento, CA 95833
USA

Phone 916 923 1097
Toll-free 800 368 7511
Fax 916 923 6251

www.cardno.com

Date: November 14, 2018

To: Don Dean, BART

From: Sam Bacchini, Senior Project Scientist, Cardno

RE: **eBART Hillcrest Station Storage Site Parking Development Biological Survey**

INTRODUCTION

The purpose of this Technical Memorandum is to describe the methods and results for the biological evaluation conducted at the proposed additional parking area for the Bay Area Rapid Transit's (BART) eBART Hillcrest Station Project in Antioch, Contra Costa County, California. Cardno senior biologist, Sam Bacchini conducted this survey to support BARTs current Application and Planning Survey Report for compliance with and permit coverage under the East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan (HCP/NCCP). The proposed additional parking area (Study Area) is bounded by the existing Hillcrest Station parking lot to the west, the eBART maintenance yard to the east, Hwy 4 to the south, and Slatten Ranch Road and the Union Pacific Rail (UPRR) alignment to the north (Figure 1).

The Study Area includes the approximately 8-acre proposed parking area site, along with undeveloped land in the immediately surrounding area for a total of approximately 16 acres (Figure 1). Additionally, Cardno examined offsite property, including the UPRR alignment and other undeveloped land north of the Study Area. BART has used the proposed additional parking area as a staging and storage area during and after the construction phase of the existing Hillcrest Station and existing parking area and maintenance yard (Hillcrest Station and facilities).

Prior to the development of the Hillcrest Station and facilities, use of the proposed additional parking area primarily included livestock grazing and much of the site was disked on an annual or semiannual basis. During the Hillcrest Station construction phase, much of the proposed additional parking area was compacted and a gravel driveway encircling and crossing the site installed to ensure wet weather access (Figure 1). Traffic within the storage and staging area was at a peak while BART or their contractors moved equipment, materials, and supplies in and out of the area during construction of the Hillcrest Station and facilities. These development activities substantially reduced the suitability of the area to support any special-status plant or wildlife species known from the region. Permitting for the development of the Hillcrest Station and facilities (including the storage/staging area) occurred after the submittal of a previous Application and Planning Survey Report in 2011.

LEGEND

Study Area

C:\shared\gis\site\BART\Fig1 - Study Area.mxd Date: 11/9/2018

Cardno

N

0 250 500 1,000

SCALE IN FEET

eBART Hillcrest Station

Figure 1

Additional Parking Facility
Development Study Area

METHODS

Prior to conducting the site visit, Cardno reviewed the previous environmental documents related to the development of the Hillcrest Station and facilities, as well as the current Application and Planning Survey report being prepared for this project to determine what special-status species could potentially occur in the Study Area. The list of species resulting from this review is contained below in Table 1.

Cardno then conducted a visit to the Study Area on October 26, 2018 to determine the suitability of the site to support any of the special-status species identified in the Application and Planning Survey Report. The survey consisted of walking transects at approximately 30 foot intervals across undeveloped portions of the property until the entire site was covered. Plant species and general habitat conditions were recorded, but the survey focused primarily on identification of burrowing owls, burrowing owl sign (e.g., whitewash, feathers, or prey remains), or potential nest burrows. When any burrows were found, the diameter was measured to determine if it met the minimum requirement to be suitable for burrowing owl occupation (i.e., 4 inches or more in diameter). The surveyor also examined the site and surrounding area for suitable nesting habitat for Swainson's hawk (i.e., nest trees).

Cardno also examined offsite undeveloped land including the UPRR alignment and other undeveloped land to the north of the study area either visually using binoculars. Cardno conducted this portion of the survey from within BART property, as the Cardno biologist did not have permission to access non-BART properties.

Representative photos were taken of the Study Area and are included at the end of this report.

TABLE 1
SPECIAL-STATUS SPECIES RECORDED IN THE PROJECT AREA REGION

Scientific Name **Common Name**	**Status Fed/State/Other**	**Habitat Requirements**	**Likelihood of Occurrence in Project Area**
Plants			
Amsinckia grandiflora Large-flowered fiddleneck	FE/SE/1B.1	Occurs in cismontane woodland, valley and foothill grassland at elevations ranging from 275 to 550 meters. Blooms April to May. Known fewer than 5 natural occurrences.	**None:** Project area occurs outside the known elevation range for this species.
Arctostaphylos auriculata Mt. Diablo manzanita	None/None/1B.3	Occurs in chaparral (sandstone), and cismontane woodland. Blooms January to March. Elevation ranges from 135 to 650 meters. Known from fewer than twenty occurrences.	**None:** No suitable habitat in the project area.
Astragalus tener var. *tener* alkali milk-vetch	None/None/1B.2	Occurs in playas, valley and foothill grassland in adobe clay soil substrates, and vernal pools with alkaline soils at elevations ranging from 1 - 60 meters; blooms April to May	**None:** No suitable habitat in the project area.
Atriplex depressa Brittlescale	None/None/1B.2	Occurs in chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools, typically on alkaline, clay soils. Blooms from April to October. Elevation ranges from 1 to 320 meters.	**None:** No suitable habitat in the project area (i.e., no alkaline soils).
Atriplex joaquiniana San Joaquin spearscale	None/None/1B.2	Occurs in chenopod scrub, meadows and seeps, playas, valley and foothill grassland on alkaline soils. Blooms from April to October. Elevation range extends from 1 to 835 meters	**None:** No suitable habitat in the project area (i.e., no alkaline soils).
Blepharizonia plumosa Big tarplant	None/None/1B.1	Occurs in valley and foothill grassland. Blooms from July to October. Elevation range extends from 30 to 505 meters. Historical occurrences probably extirpated by agriculture and non-native plants.	**None:** Species not recorded during surveys conducted prior to development. Potential habitat has since degraded substantially due to development activities.

TABLE 1
SPECIAL-STATUS SPECIES RECORDED IN THE PROJECT AREA REGION

Scientific Name **Common Name**	**Status Fed/State/Other**	**Habitat Requirements**	**Likelihood of Occurrence in Project Area**
California macrophylla Round-leaved filaree	None/None/1B.1	Occurs in cismontane woodland, and valley and foothill grassland on clay soils. Blooms from March to May. Elevation range extends from 15 to 1,200 meters.	**None:** Species not recorded during surveys conducted prior to development. Potential habitat has since degraded substantially due to development activities.
Calochortus pulchellus Mt. Diablo fairy-lantern	None/None/1B.2	Occurs in chaparral, cismontane woodland, riparian woodland, and valley and foothill grassland. Blooms from April to June. Elevation range extends from 30 to 840 meters.	**None:** Species not recorded during surveys conducted prior to development. Potential habitat has since degraded substantially due to development activities.
Delphinium recurvatum Recurved larkspur	None/None/1B.2	Occurs in chenopod scrub, cismontane woodland, and valley and foothill grassland on alkaline soils. Blooms from March to June. Elevation ranges from 3 to 750 meters.	**None:** No suitable alkaline soil habitat in the project area.
Eriogonum truncatum Mt. Diablo buckwheat	None/None/1B.1	Occurs in chaparral, coastal scrub and valley and foothill grassland on sandy soils. Blooms from April to September, and occasionally into November or December. Elevation ranges from 3 to 350 meters. Rediscovered in May 2005 by Michael Park in Mount Diablo State Park.	**None:** No suitable habitat in the project area. Project area outside the known range of the species.
Eschscholzia rhombipetala Diamond-petaled California poppy	None/None/1B.1	Occurs in valley and foothill grassland on alkaline, clay soils. Blooms March to April. Elevation ranges from 0 to 975 meters.	**None:** No suitable alkaline soil habitat in the project area.
Helianthella castanea Diablo helianthella	None/None/1B.2	Occurs in broad-leafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland habitats. Blooms from March to June. Elevation range extends from 60 to 1,300 meters.	**None:** Project area outside the known elevation range of the species.
Hesperolinon breweri Brewer's western flax	None/None/1B.2	Occurs in chaparral, cismontane woodland, and valley and foothill grassland usually on serpentinite soils. Blooms May to July. Elevation ranges from 30 to 900 meters.	**None:** No suitable (serpentine) habitat in the project area.
Lasthenia conjugens Contra Costa goldfields	FE/None/1B.1	Occurs in cismontane woodland, alkaline playas, valley and foothill grassland, and mesic vernal pools ranging from 0 - 470 meters. Blooms from March to June.	**None:** No suitable habitat in the project area.
Madia radiata Showy golden madia	None/None/1B.1	Occurs in cismontane woodland, and valley and foothill grassland. Blooms March to May. Elevation ranges from 25 to 1,215 meters.	**None:** Species not recorded during surveys conducted prior to development. Potential habitat has since degraded substantially due to development activities.
Navarretia nigelliformis ssp. *radians* Adobe navarretia	None/None/1B.2	Occurs in vernal pools in cismontane woodlands and valley and foothill grasslands. Blooms (March) April to July. Elevation ranges from 65 to 1,000 meters.	**None:** No suitable habitat in the project area.
Tropidocarpum capparideum Caper-fruited tropidocarpum	None/None/1B.1	Occurs in valley and foothill grassland on alkaline hills. Blooms March to April. Elevation ranges from 1 to 455 meters.	**None:** No suitable alkaline soil habitat in the project area.
Invertebrates			
Branchinecta conservatio Conservancy fairy shrimp	FE/None/None	Large, alkaline playa pools in open grasslands	**None:** No suitable habitat in the project area.
Branchinecta longiantenna Longhorn fairy shrimp	FE/None/None	Endemic to the eastern margin of the central coast mountains in seasonally astatic grassland vernal pools. Typically inhabit small, clear-water depressions in sandstone and clear-to-turbid clay/grass-bottomed pools in shallow swales.	**None:** No suitable habitat in the project area.

TABLE 1 SPECIAL-STATUS SPECIES RECORDED IN THE PROJECT AREA REGION			
Scientific Name **Common Name**	**Status** **Fed/State/Other**	**Habitat Requirements**	**Likelihood of Occurrence in Project Area**
Branchinecta lynchi Vernal pool fairy shrimp	FT/None/None	Endemic to the grasslands of the central valley, central coast mountains, and south coast mountains, in astatic rain-filled pools. Typically inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	**None:** No suitable habitat in the project area.
Vernal pool fairy shrimp Critical Habitat	FX/None/None	N/A	**None:** Project area does not occur within a critical habitat unit for this species.
Lepidurus packardi Vernal pool tadpole shrimp	FE/None/None	Occurs in vernal pools and other seasonal wetlands in open grasslands. Does not occur in areas subject to flooding from large rivers or other waterways.	**None:** No suitable habitat in the project area.
Amphibians			
Ambystoma californiense California tiger salamander	FT/ST/CSC	Occurs in grasslands and open oak woodland that provide suitable aestivation (i.e., summer retreats) and/or breeding habitat in close proximity to vernal pools, seasonal wetlands, or artificial impoundments (e.g., stock ponds). Threatened by predation from Centrachid fish species (e.g., sunfish, bluegill, and large-mouth bass), bullfrogs, and signal and red swamp crayfish.	**None:** No suitable habitat in the project area.
Rana draytonii California red-legged frog	FT/None/None	Slow-flowing portions of perennial streams, ephemeral streams, and hillside seeps that maintain pool environments (including ponds) or saturated soils throughout the summer months	**None:** No suitable habitat in the project area.
Reptiles			
Thamnophis gigas Giant garter snake	FT/None/CSC	Historically occurred in cattail and tule marshes on the central valley floor. Has since adapted to a variety of artificial drainages, particularly those associated with rice farming. Requires open water supporting fish and/or amphibian prey, with vegetative cover in the water and on the banks. Also requires adjacent uplands for aestivation. Does not occur in major rivers.	**None:** No suitable habitat in the project area.
Birds			
Aquila chrysaetos golden eagle	SA	Occurs in rolling foothills, mountain areas, sage-juniper flats, and desert habitats. Nests on cliffs and in large trees in open areas. Alternative nest sites are maintained, and old nests are often reused	**Low:** No nesting habitat present, but this species may forage in grassland habitat in the vicinity.
Athene cunicularia burrowing owl	None/None/CSC	Nests in small mammal burrows that are in or adjacent to open dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**Known (formerly):** Previously documented in the Study Area, but not observed during the most recent surveys. Substantial degradation to potential habitat has occurred since that time due to development activities.
Buteo swainsoni Swainson's hawk	None/ST	Forages in a wide variety of open habitats such as grasslands, open scrub, and agricultural fields. Nests in large, typically riparian trees, but will occasionally utilize ornamental species such as Eucalyptus if they are near foraging habitat.	**Moderate:** Known to have historically nested nearby on an offsite property. Marginally suitable foraging habitat present in the project area. Not observed during surveys of the site.

November 14, 2018

TABLE 1
SPECIAL-STATUS SPECIES RECORDED IN THE PROJECT AREA REGION

Scientific Name **Common Name**	**Status Fed/State/Other**	**Habitat Requirements**	**Likelihood of Occurrence in Project Area**
Mammals			
Corynorhinus townsendii Townsend's big-eared bat	None/None/CSC	Roosts in the open in large caves, abandoned mines and occasionally buildings. Extremely sensitive to disturbance during roosting, particularly at maternity roosts.	**None:** No suitable habitat in the project area.
Vulpes macrotis mutica San Joaquin kit fox	FE/ST/CSC	Species inhabits suitable grassland, scrubland, alkali meadows and playas, and agricultural landscapes in the San Joaquin Valley and in surrounding foothill areas of the Coast Ranges, Sierra Nevada, and Tehachapi Mountains.	**None:** No suitable habitat in the project area. No suitable burrows. Known populations previously determined to be isolated from the site by development.
Sensitive Natural Communities			

Status Definitions:

Federal

- FE – Federally listed as Endangered
- FT – Federally listed as Threatened
- FX – Federally listed species for which Critical Habitat has been designated

State

- SE – State listed as Endangered
- ST – State listed as Threatened
- CSC – Species of Special Concern
- FP – Fully Protected
- SA – Included on the Special Animals List.

California Rare Plant Rank

- 1B.1 - Plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California
- 1B.2 - Plants rare, threatened, or endangered in California and elsewhere, fairly threatened in California
- 2.2 - Plants rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California

RESULTS

Habitat in the Study Area is ruderal and highly disturbed, consisting of non-native annual grassland on compacted soils along with bare areas covered in road gravel or barren dirt. The eastern half of the Study Area is the most heavily disturbed, with weedy herbaceous grassland species occupying much of the western portion of the study area and the slopes that extend up from the proposed parking area to Slatten Ranch Road and the existing parking area. As the survey was conducted in late fall, prior to any rains, the majority of the vegetation is dead, dry and mostly flattened. Species observed included wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), foxtail barley (*Hordeum murinum* ssp. *leporinum*), mustard (*Brassica* sp.), wild radish (*Raphanus sativa*), Italian thistle (*Carduus pycnocephalus*), clover (*Trifolium* sp.), prickly ox-tongue (*Picris echioides*), sow thistle (*Sonchus asper*), cheeseweed mallow (*Malva parviflora*), milk thistle (*Silybum marianum*), stinkwort (*Dittrichia graveolens*), curly dock (*Rumex crispus*), and jimsonweed (*Datura wrightii*).

Wildlife species observed during the survey included western fence lizard (*Sceloporus occidentalis*), American crow (*Corvus brachyrhynchos*), Brewer's blackbird (*Euphagus cyanocephalus*), mourning dove (*Zenaida macroura*), mockingbird (*Mimus polyglottos*), and California ground squirrel (*Spermophilus beecheyi*).

Previous environmental compliance efforts conducted to support the initial development of the site, along with an associated series of special-status plant and wildlife surveys were conducted by Cardno between 2011 and 2016. These studies determined that none of the special-status plant species, along with none of the invertebrate, amphibian, reptile and mammal species identified in Table 1 was present in the area due to lack of suitable habitat or isolation of the site from known populations (Table 1). Since the amount of undeveloped land on BART property has decreased substantially since that time, and the undeveloped land that remains is highly disturbed, none of the aforementioned species from Table 1 would be expected to occur in the Study Area. Therefore, these species will not be further addressed in this report. Only burrowing owl, Swainson's hawk and nesting migratory birds have any potential to be affected by development of the proposed parking area. These species are discussed further below.

Burrowing owls

There are a moderate number of ground squirrel burrows present, primarily on the east and south facing slopes between the current parking area, Slatten Ranch Road and the proposed parking area, along with a few burrows in a small soils pile the interior of the site. No burrowing owls or burrowing owl sign were observed in or around any of these burrows during the survey. Much of the rest of the ground in the proposed parking area is fairly compacted or covered in road gravel and no burrows are present. All of the burrows observed during the survey were four inches or less in diameter, and no owl sign or other evidence of owl use was present. Many of the burrows had spider webs or debris in the entrances at the time of the survey indicating that they were likely abandoned.

While no owls were observed during the survey, potential habitat is still present to the north of Slatten Ranch Road along the UPRR ROW and in the field to the north. However, a number of homeless encampments along the UPRR ROW, and other disturbance in the fields to the north (mostly materials storage by other property owners), has likely reduced the quality of the habitat, but burrowing owls could still be present in these offsite areas.

Swainson's hawk

Prior to development of the Hillcrest Station and facilities, there had been a number of large eucalyptus trees and other smaller ornamental trees on the property. All trees that were on the property were removed during that development. An active Swainson's hawk nest tree that was identified prior to the development of the Hillcrest Station and facilities approximately 800 feet north of the current maintenance yard location, and approximately 1,500 feet

east/northeast of the Study Area. This tree is still present, but the survey was conducted during a time when Swainson's hawk, a migratory species, is not in the region. While the tree is still there and foraging habitat in the surrounding area that could support the species is still present, there has been a lot of disturbance in the surrounding fields between the tree and the Study Area, in addition to the development of the Hillcrest Station and facilities that would make the habitat less suitable.

Within the Study Area, the acreage of potential foraging habitat that was present prior to the development of the Hillcrest Station and facilities has been greatly reduced. Since much of the site is compacted and covered with road gravel, it would only provide marginal to poor foraging habitat for Swainson's hawk.

Nesting birds

There are no trees or shrubs within the proposed parking area. Landscaping trees have been planted in and around the existing parking lot, but these are all still young and provide only sparse cover that is less suitable for bird nesting. While the survey was conducted outside the nesting season for migratory birds known from the region, no potential nest structures were observed during the survey.

DISCUSSION

No burrowing owls or burrowing owl sign were observed during the survey. Based on the lack of burrowing owl sign, the relatively small number of ground squirrel burrows observed and the poor quality of the adjacent foraging habitat, along with the increased levels of human activity in the area, this species is unlikely to be present in the Study Area. Therefore, the likelihood of burrowing owls being affected by development of the additional parking area is very low.

No Swainson's hawk nest trees are present in the Study Area, and the only known nest tree present in the vicinity is approximately 1,500 feet east/northeast of the Study Area, and is separated from it by the existing eBART maintenance yard and other offsite human activity. The likelihood that the development of the parking area could affect an active Swainson's hawk nest (if one were determined to be present) is very low. Additionally, as the remaining potential foraging habitat in the Study Area is small and of poor quality compared to the fields to the north, west and east of the nest tree, the loss of that poor quality foraging habitat to the parking facility is unlikely to affect the species.

As there is currently no evidence of nesting migratory birds in the Study Area, development of the proposed parking area is unlikely to affect this resource.

Based on the lack of suitable habitat, as described above, development of land within the Study Area is unlikely to affect any special-status plant or wildlife species known from the region.

We appreciate the opportunity to assist you with this project. If you have any questions regarding this report, please do not hesitate to contact Sam Bacchini (916-386-3850), or at sam.bacchini@cardno.com.

Site Photos

View of Study Area from eastern boundary looking west

View of Study Area from western boundary looking east

View of the eastern portion of the Study Area looking west from eastern boundary

View of northern boundary of the Study Area looking east from the northwest corner.

View of western boundary of the Study Area along slope to the existing parking area looking south from the northwest corner

View of southern boundary of the Study Area looking east from the southwest corner

View of eastern boundary of the Study Area looking south from the northeast corner

View of the eastern portion of the Study Area looking east from the center of the Study Area

View of the western portion of the Study Area looking west from the center of the Study Area

View of remaining materials storage in center of the Study Area, looking east

View of UPRR Alignment north of the Study Area looking west

View of northeast corner of the Study Area looking north

View of footpath route to Hillcrest Station looking west from southwest corner of the Study Area

View of footpath route to Hillcrest Station looking east from southwest corner of the Study Area

Typical California ground squirrel burrow on the slope to the existing parking area

Appendix C

Air Quality Modeling Results

Additional Parking Proposed at Antioch eBART Station

San Francisco Bay Area Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	850.00	Space	7.97	340,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot Acreage was adjusted based on eBART project description

Construction Phase -

Demolition -

Grading -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	7.65	7.97

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.4035	45.6156	23.1356	0.0546	18.2141	2.3913	20.6055	9.9699	2.2000	12.1699	0.0000	5,447.2961	5,447.2961	1.1957	0.0000	5,466.0580
2020	12.1622	25.8689	22.2076	0.0541	1.5538	1.1559	2.7097	0.4207	1.0873	1.5080	0.0000	5,360.3386	5,360.3386	0.7316	0.0000	5,378.6282
Maximum	**12.1622**	**45.6156**	**23.1356**	**0.0546**	**18.2141**	**2.3913**	**20.6055**	**9.9699**	**2.2000**	**12.1699**	**0.0000**	**5,447.2961**	**5,447.2961**	**1.1957**	**0.0000**	**5,466.0580**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.4035	45.6156	23.1356	0.0546	18.2141	2.3913	20.6055	9.9699	2.2000	12.1699	0.0000	5,447.2961	5,447.2961	1.1957	0.0000	5,466.0580
2020	12.1622	25.8689	22.2076	0.0541	1.5538	1.1559	2.7097	0.4207	1.0873	1.5080	0.0000	5,360.3386	5,360.3386	0.7316	0.0000	5,378.6282
Maximum	**12.1622**	**45.6156**	**23.1356**	**0.0546**	**18.2141**	**2.3913**	**20.6055**	**9.9699**	**2.2000**	**12.1699**	**0.0000**	**5,447.2961**	**5,447.2961**	**1.1957**	**0.0000**	**5,466.0580**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1935	8.1000e-004	0.0876	1.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004		0.1860	0.1860	5.0000e-004		0.1986
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.1935**	**8.1000e-004**	**0.0876**	**1.0000e-005**	**0.0000**	**3.1000e-004**	**3.1000e-004**	**0.0000**	**3.1000e-004**	**3.1000e-004**		**0.1860**	**0.1860**	**5.0000e-004**	**0.0000**	**0.1986**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1935	8.1000e-004	0.0876	1.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004		0.1860	0.1860	5.0000e-004		0.1986
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.1935**	**8.1000e-004**	**0.0876**	**1.0000e-005**	**0.0000**	**3.1000e-004**	**3.1000e-004**	**0.0000**	**3.1000e-004**	**3.1000e-004**		**0.1860**	**0.1860**	**5.0000e-004**	**0.0000**	**0.1986**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2019	5/28/2019	5	20	
2	Site Preparation	Site Preparation	5/29/2019	6/11/2019	5	10	
3	Grading	Grading	6/12/2019	7/9/2019	5	20	
4	Building Construction	Building Construction	7/10/2019	5/26/2020	5	230	
5	Paving	Paving	5/27/2020	6/23/2020	5	20	
6	Architectural Coating	Architectural Coating	6/24/2020	7/21/2020	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 7.97

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 20,400 (Architectural Coating – sqft)

OffRoad Equipment

Additional Parking Proposed at Antioch eBART Station - San Francisco Bay Area Air Basin, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Additional Parking Proposed at Antioch eBART Station - San Francisco Bay Area Air Basin, Summer

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	143.00	56.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	29.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697		3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**		**1.7949**	**1.7949**		**1.6697**	**1.6697**		**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

3.2 Demolition - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0570	0.0357	0.4473	1.2800e-003	0.1232	8.2000e-004	0.1240	0.0327	7.5000e-004	0.0334		127.1127	127.1127	3.3800e-003		127.1972
Total	**0.0570**	**0.0357**	**0.4473**	**1.2800e-003**	**0.1232**	**8.2000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**127.1127**	**127.1127**	**3.3800e-003**		**127.1972**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697	0.0000	3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**		**1.7949**	**1.7949**		**1.6697**	**1.6697**	**0.0000**	**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

3.2 Demolition - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0570	0.0357	0.4473	1.2800e-003	0.1232	8.2000e-004	0.1240	0.0327	7.5000e-004	0.0334		127.1127	127.1127	3.3800e-003		127.1972
Total	**0.0570**	**0.0357**	**0.4473**	**1.2800e-003**	**0.1232**	**8.2000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**127.1127**	**127.1127**	**3.3800e-003**		**127.1972**

3.3 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**		**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.3 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0685	0.0429	0.5367	1.5300e-003	0.1479	9.8000e-004	0.1488	0.0392	9.0000e-004	0.0401		152.5352	152.5352	4.0600e-003		152.6366
Total	**0.0685**	**0.0429**	**0.5367**	**1.5300e-003**	**0.1479**	**9.8000e-004**	**0.1488**	**0.0392**	**9.0000e-004**	**0.0401**		**152.5352**	**152.5352**	**4.0600e-003**		**152.6366**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.3 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0685	0.0429	0.5367	1.5300e-003	0.1479	9.8000e-004	0.1488	0.0392	9.0000e-004	0.0401		152.5352	152.5352	4.0600e-003		152.6366
Total	**0.0685**	**0.0429**	**0.5367**	**1.5300e-003**	**0.1479**	**9.8000e-004**	**0.1488**	**0.0392**	**9.0000e-004**	**0.0401**		**152.5352**	**152.5352**	**4.0600e-003**		**152.6366**

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.5805	28.3480	16.2934	0.0297		1.3974	1.3974		1.2856	1.2856		2,936.8068	2,936.8068	0.9292		2,960.0361
Total	**2.5805**	**28.3480**	**16.2934**	**0.0297**	**6.5523**	**1.3974**	**7.9497**	**3.3675**	**1.2856**	**4.6531**		**2,936.8068**	**2,936.8068**	**0.9292**		**2,960.0361**

3.4 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0570	0.0357	0.4473	1.2800e-003	0.1232	8.2000e-004	0.1240	0.0327	7.5000e-004	0.0334		127.1127	127.1127	3.3800e-003		127.1972
Total	**0.0570**	**0.0357**	**0.4473**	**1.2800e-003**	**0.1232**	**8.2000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**127.1127**	**127.1127**	**3.3800e-003**		**127.1972**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.5805	28.3480	16.2934	0.0297		1.3974	1.3974		1.2856	1.2856	0.0000	2,936.8068	2,936.8068	0.9292		2,960.0361
Total	**2.5805**	**28.3480**	**16.2934**	**0.0297**	**6.5523**	**1.3974**	**7.9497**	**3.3675**	**1.2856**	**4.6531**	**0.0000**	**2,936.8068**	**2,936.8068**	**0.9292**		**2,960.0361**

3.4 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0570	0.0357	0.4473	1.2800e-003	0.1232	8.2000e-004	0.1240	0.0327	7.5000e-004	0.0334		127.1127	127.1127	3.3800e-003		127.1972
Total	**0.0570**	**0.0357**	**0.4473**	**1.2800e-003**	**0.1232**	**8.2000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**127.1127**	**127.1127**	**3.3800e-003**		**127.1972**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.5 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2597	6.9940	1.7078	0.0155	0.3791	0.0484	0.4274	0.1091	0.0463	0.1554		1,643.9084	1,643.9084	0.0869		1,646.0816
Worker	0.5438	0.3406	4.2640	0.0122	1.1747	7.7800e-003	1.1825	0.3116	7.1700e-003	0.3188		1,211.8075	1,211.8075	0.0322		1,212.6129
Total	**0.8035**	**7.3346**	**5.9719**	**0.0277**	**1.5538**	**0.0562**	**1.6099**	**0.4207**	**0.0535**	**0.4742**		**2,855.7159**	**2,855.7159**	**0.1192**		**2,858.6945**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.5 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2597	6.9940	1.7078	0.0155	0.3791	0.0484	0.4274	0.1091	0.0463	0.1554		1,643.9084	1,643.9084	0.0869		1,646.0816
Worker	0.5438	0.3406	4.2640	0.0122	1.1747	7.7800e-003	1.1825	0.3116	7.1700e-003	0.3188		1,211.8075	1,211.8075	0.0322		1,212.6129
Total	**0.8035**	**7.3346**	**5.9719**	**0.0277**	**1.5538**	**0.0562**	**1.6099**	**0.4207**	**0.0535**	**0.4742**		**2,855.7159**	**2,855.7159**	**0.1192**		**2,858.6945**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2123	6.3819	1.5223	0.0154	0.3791	0.0313	0.4103	0.1091	0.0299	0.1390		1,633.5651	1,633.5651	0.0805		1,635.5762
Worker	0.4970	0.3009	3.8368	0.0118	1.1747	7.6100e-003	1.1823	0.3116	7.0100e-003	0.3186		1,173.7105	1,173.7105	0.0283		1,174.4175
Total	**0.7093**	**6.6828**	**5.3591**	**0.0272**	**1.5538**	**0.0389**	**1.5927**	**0.4207**	**0.0369**	**0.4576**		**2,807.2756**	**2,807.2756**	**0.1087**		**2,809.9937**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2123	6.3819	1.5223	0.0154	0.3791	0.0313	0.4103	0.1091	0.0299	0.1390		1,633.5651	1,633.5651	0.0805		1,635.5762
Worker	0.4970	0.3009	3.8368	0.0118	1.1747	7.6100e-003	1.1823	0.3116	7.0100e-003	0.3186		1,173.7105	1,173.7105	0.0283		1,174.4175
Total	**0.7093**	**6.6828**	**5.3591**	**0.0272**	**1.5538**	**0.0389**	**1.5927**	**0.4207**	**0.0369**	**0.4576**		**2,807.2756**	**2,807.2756**	**0.1087**		**2,809.9937**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	1.0441					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.4006**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.6 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0521	0.0316	0.4025	1.2400e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		123.1165	123.1165	2.9700e-003		123.1907
Total	**0.0521**	**0.0316**	**0.4025**	**1.2400e-003**	**0.1232**	**8.0000e-004**	**0.1240**	**0.0327**	**7.4000e-004**	**0.0334**		**123.1165**	**123.1165**	**2.9700e-003**		**123.1907**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	1.0441					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.4006**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.6 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0521	0.0316	0.4025	1.2400e-003	0.1232	8.0000e-004	0.1240	0.0327	7.4000e-004	0.0334		123.1165	123.1165	2.9700e-003		123.1907
Total	**0.0521**	**0.0316**	**0.4025**	**1.2400e-003**	**0.1232**	**8.0000e-004**	**0.1240**	**0.0327**	**7.4000e-004**	**0.0334**		**123.1165**	**123.1165**	**2.9700e-003**		**123.1907**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	11.8193					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**12.0614**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1008	0.0610	0.7781	2.3900e-003	0.2382	1.5400e-003	0.2398	0.0632	1.4200e-003	0.0646		238.0252	238.0252	5.7400e-003		238.1686
Total	**0.1008**	**0.0610**	**0.7781**	**2.3900e-003**	**0.2382**	**1.5400e-003**	**0.2398**	**0.0632**	**1.4200e-003**	**0.0646**		**238.0252**	**238.0252**	**5.7400e-003**		**238.1686**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	11.8193					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**12.0614**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1008	0.0610	0.7781	2.3900e-003	0.2382	1.5400e-003	0.2398	0.0632	1.4200e-003	0.0646		238.0252	238.0252	5.7400e-003		238.1686
Total	**0.1008**	**0.0610**	**0.7781**	**2.3900e-003**	**0.2382**	**1.5400e-003**	**0.2398**	**0.0632**	**1.4200e-003**	**0.0646**		**238.0252**	**238.0252**	**5.7400e-003**		**238.1686**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.570523	0.041853	0.194077	0.115893	0.018544	0.005373	0.016909	0.024079	0.002502	0.002562	0.005975	0.000872	0.000837

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1935	8.1000e-004	0.0876	1.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004		0.1860	0.1860	5.0000e-004		0.1986
Unmitigated	0.1935	8.1000e-004	0.0876	1.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004		0.1860	0.1860	5.0000e-004		0.1986

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0648					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1204					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.3000e-003	8.1000e-004	0.0876	1.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004		0.1860	0.1860	5.0000e-004		0.1986
Total	**0.1935**	**8.1000e-004**	**0.0876**	**1.0000e-005**		**3.1000e-004**	**3.1000e-004**		**3.1000e-004**	**3.1000e-004**		**0.1860**	**0.1860**	**5.0000e-004**		**0.1986**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0648					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1204					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.3000e-003	8.1000e-004	0.0876	1.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004		0.1860	0.1860	5.0000e-004		0.1986
Total	**0.1935**	**8.1000e-004**	**0.0876**	**1.0000e-005**		**3.1000e-004**	**3.1000e-004**		**3.1000e-004**	**3.1000e-004**		**0.1860**	**0.1860**	**5.0000e-004**		**0.1986**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation