

**July 8, 2022**

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**Re: Trip Generation and Parking Analysis for the Proposed Bay Point Construction Storage Yard Project**

This report presents the results of the trip generation analysis of the proposed Bigge Crane Storage Yard Project to be located on Port Chicago Highway in the unincorporated Bay Point community of Contra Costa County. The proposed project involves constructing a surface parking area with storage spaces for up to 110 trailers and/or pieces of construction equipment. The project is also proposing to have a moveable office trailer on the site with 1,440 square feet of office space and 7 parking spaces. It is our understanding the moveable office trailer will remain with its wheels installed for flood and storm response readiness, and that no permanent staff will be assigned to it. It is planned to be used primarily for site staging meetings and periodic security visits.

According to information provided by the applicant, the crane storage facility will have a maximum of nine employees and would only be active when a crane is being delivered to the site or being deployed from the site. Once a crane has been installed, if there is not sufficient room at the construction site the empty trailers would be returned to the storage facility until they are called back to move the crane to its next construction project. The facility is intended to have no more than two regular full-time staff for security and logistics. No customers or public (visitor) access is proposed for this site.

This facility is proposed to store from 1 to 20 crane groups. The largest cranes may take up the entire storage facility, or as many as 20 smaller crane groups can be stored as well. The region's construction needs will determine the type and number of cranes stored in this facility at any given time. When fully booked the cranes will normally move from one project to another and never be brought to a storage facility. In this situation, the storage facility will mainly be used for storing the empty transportation trailers while the cranes are in service. Our understanding is that no maintenance will be performed at the storage facility. Due to safety regulations and OSHA compliance, it is our understanding that maintenance and repair operations are only performed in specially equipped repair facilities.

**PROJECT TRIP GENERATION**

The trip generation rates are based on the Institute of Transportation Engineers (ITE) rates for General Light Industrial (ITE Land Use Code 110) taken from the 11th Edition of the ITE Trip Generation Manual. There are no ITE rates available for a construction laydown facility and based on a review of the most similar rates in the ITE trip generation manual it was determined that using the per employee general light industrial rates would provide the most accurate forecast of the project’s potential trip generation.

Please note a “trip” is defined in ITE’s Trip Generation publication as a single or one-directional vehicular movement with either the origin or destination at the project sites. As a result, a trip can be either “to” or “from” the site. Consistently, a single visit to a site is counted as two trips (i.e., one to and one from the site). For the purposes of determining the reasonable worst-case impacts of traffic on the surrounding street network from a proposed project, the trips generated by this proposed development are estimated for the peak commute hours which represent the peak hours of “adjacent street traffic”. This is the time period when the project traffic would generally contribute to the greatest amount of congestion. As shown in **Table 1**, the project is forecast to generate no more than about 5 new vehicle trips on the surrounding roadway system during the peak commute hours.

**Table 1**  
**Project Trip Generation Calculations**

Land Use	ITE Code	Size	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
ITE Light Industrial Trip Rates - trips per employee	110		3.10	0.44	0.09	0.53	0.11	0.38	0.49
<b>Project Trip Generation</b>		<b>9 employees</b>	<b>28</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>1</b>	<b>3</b>	<b>4</b>

**Source:** ITE Trip Generation, 11th Edition, 2021.

It is forecast that 95% of project traffic would be to and from the south on Port Chicago Highway. The trip distribution assumptions are based on the project’s proximity to freeway interchanges, the existing directional split at nearby intersections, and information on the existing and future land use patterns in the area as determined from the Countywide Travel Demand Model.

**VEHICLE MILES TRAVELED**

One performance measure that can be used to quantify the transportation impacts of a project is vehicle miles traveled (VMT). This section presents an analysis of the extent of the VMT-related transportation impacts caused by the Project. **It should be noted that Project is not located in a Transit Priority Area or otherwise screened out from further VMT analysis. Therefore, an**

evaluation of the project's VMT impacts was conducted according to Contra Costa County's Transportation Analysis Guidelines<sup>1</sup> and the Contra Costa Transportation Authority's (CCTA) VMT Analysis Methodology for Land Use Projects in Contra Costa (Growth Management Task Force Review Draft).<sup>2</sup> This methodology was subsequently codified in the implementation guide for the County's Growth Management Program.<sup>3</sup>

In Contra Costa County VMT is estimated using an area-wide travel demand model maintained by the Contra Costa Transportation Authority (CCTA). The model calculates VMT based on the number of vehicles multiplied by the typical distance traveled by each vehicle originating from or driving to a certain area. As with all models, the accuracy of the output depends on the level of detail in the model. The volume of traffic and distance traveled depends on mix of land use types, density, and location as well as the existing and planned transportation system, including availability of public transportation. A travel demand model attempts to properly represent these relationships when forecasting vehicle trips and VMT. The model divides areas within CCTA's jurisdiction into transportation analysis zones, or TAZs, which are used for transportation analysis and other planning purposes. The CCTA Travel Model includes TAZs that vary in size from a few city blocks in some areas to much larger zones in lower density areas.

VMT is a particularly useful metric for evaluating the impacts of growth on greenhouse gas (GHG) emissions because it can be used to estimate fuel consumption by motor vehicles. Increases in VMT cause proportional increases in greenhouse gas emissions and air pollution. The Office of Planning and Research (OPR) released their final proposed Guidelines in a Technical Advisory on Evaluating Transportation Impacts in CEQA, dated December 2018, which went into effect on July 1, 2020. The guidelines for VMT screening specify the following about small projects: "*Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact.*"

The OPR guidance states that "*Projects generating less than 110 daily trips*" would therefore be "*exempt from a VMT analysis*". The County's Growth Management Program requirements also specify that for a project to be exempt it must generate an average of less than 836 vehicle miles per day. As shown above in **Table 1**, the ITE data indicates the proposed project would result in a daily traffic generation of about 28 trips per day. Therefore, the proposed project could potentially qualify for OPR and the County's screening criteria covering small projects, since it is forecast to result in an increase of about 565 vehicle miles traveled per day. This is

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<sup>1</sup> *Transportation Analysis Guidelines*, Conservation and Development Department, Contra Costa County, Martinez, CA, June, 23, 2020.

<sup>2</sup> *VMT Analysis Methodology for Land Use Projects in Contra Costa*, Growth Management Task Force Review Draft, Contra Costa Transportation Authority, Walnut Creek, CA, July 9, 2020.

<sup>3</sup> *Implementation Guide, Growth Management Program Implementation Documents*, Contra Costa Transportation Authority, Walnut Creek, CA, February 17, 2021.

based on County model data on the existing average VMT for the TAZ where the project is located (20.2 miles).

## PEDESTRIAN AND BICYCLE IMPACTS

Bicycle paths, lanes and routes are typical examples of bicycle transportation facilities, which are defined by Caltrans as being in one of the following four classes:

Class I – Provides a completely separated facility designed for the exclusive use of bicyclists and pedestrians with crossing points minimized.

Class II – Provides a restricted right-of-way designated lane for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and cross-flows by pedestrians and motorists permitted.

Class III – Provides a route designated by signs or permanent markings and shared with pedestrians and motorists.

Class IV – Provides an adjacent bike lane or bikeway that is physically separated from motor vehicle traffic.

In the immediate project vicinity there are existing bicycle lanes on Pacifica Avenue and sidewalks in most areas, with the exception of Port Chicago Highway north of Pacifica Avenue and Mc Avoy Road. There are also marked crosswalks, and pedestrian signals with pushbuttons provided at all nearby signalized intersections. It is important to note that Contra Costa County's Active Transportation Program includes a high priority project along the segment of Port Chicago Highway where the project site is located. The project is to construct a separated (Class IV) bikeway and a sidewalk connection to the Bay Point Regional Shoreline which would also connect to the future Great Delta Trail.<sup>4</sup>

The County does not have level of service standards for pedestrian or bicycle facilities. Nevertheless, use of existing facilities by the users of the project would not be expected to overcrowd those facilities or decrease their performance or safety. The proposed project would not significantly impact or change the design of any existing pedestrian facilities and should not create any new safety problems for pedestrians or bicyclists in the area. The project will add some bicyclists in the area but the volumes added would not be expected to significantly impact any existing bicycle facilities. In relation to the existing conditions, the proposed project would not cause substantial changes to the pedestrian or bicycle traffic in the area and would not significantly impact or require changes to the design of any existing bicycle or pedestrian facilities, assuming implementation of the measures described below.

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<sup>4</sup> *Active Transportation Plan*, Contra Costa County, Fehr & Peers, Walnut Creek, CA, April, 2022.

As per County requirements, it is assumed the project will be required to construct a sidewalk along the project frontage and also reserve right of way for the future bicycle lanes planned for the adjacent Port Chicago Highway.

## TRANSIT IMPACTS

Two major public transit operators provide service within or adjacent to the study area. These include BART and the Eastern Contra Costa Transit Authority (or Tri Delta Transit). These are described below.

*Bay Area Rapid Transit (BART)* – BART is a rapid mass transit system which provides regional transportation connections to much of the Bay Area. It runs from the North Bay Area in Richmond to the South Bay Area in Fremont. In the east-west direction it runs from Pittsburg to the San Francisco Airport and Milbrae with several connections in Oakland. The Pittsburg/Bay Point BART station, which is closest to the proposed project, serves all of Pittsburg, Bay Point, Antioch, and all other surrounding cities and runs from 4:00 am to 12:00 am daily, with a weekday frequency of 15 minutes. An E-BART extension to Hillcrest Avenue in Antioch connects with BART at the Bay Point BART station. Please note there is also an E-BART Station at Railroad Avenue.

*Tri Delta Transit* - Tri Delta Transit serves the East County including Brentwood, Oakley, Pittsburg, Antioch, Bay Point and unincorporated areas of East County. Tri Delta Transit operates fourteen local bus routes from Monday to Friday, including three express services, and four local bus routes during weekends and Holidays. The Tri Delta Transit routes that run closest to the proposed project are Routes 201 and 389, with bus stops less than a quarter mile from the project site near the intersection of Port Chicago Highway with Pacifica Avenue. These route operate on weekdays with approximately one-hour headways. The route provides a connection to the Pittsburg/Bay Point BART station where about half of TriDelta Transit's bus routes make connections.

The project would not result in the degradation of the level of service (or a significant increase in delay) on any roadway segments currently being utilized by bus transit in the area and, as such, no significant impacts to bus transit are expected. The proposed project would not interfere with BART or any existing bus routes and would not remove or relocate any existing bus stops. The proposed project could potentially help support existing transit services with additional transit ridership and would not conflict with any transit plans or goals of BART or Tri-Delta Transit. As a result, the project would not be expected to result in any significant impacts to transit service in the area.

## CIRCULATION

*Site Access* – The proposed project entrance would have one lane in each direction and would be controlled with a stop sign on the side street (driveway) approach and no capacity or queuing problems were identified. It was confirmed the driveway location would have adequate sight distance, based on Caltrans standards, but it should be noted the project driveway is proposed to be located about 100 feet from the intersection of Port Chicago Highway and Mc Avoy Road. While there are no exact standards for driveway spacing 100 feet is generally considered the minimum and 150 to 200 feet would be the recommended spacing according to the Transportation Research Board's Access Management Manual.<sup>5</sup>

*Emergency Vehicle Access* - Sufficient emergency access is determined by factors such as number of access points, roadway width, and proximity to fire stations. The land use plan for the proposed project would include an entrance onto Port Chicago Highway and could also potentially be accessed from the adjacent railroad right of way. All lane widths within the project would meet the minimum width that can accommodate an emergency vehicle; therefore, the width of the internal roadways would be adequate. In addition, the addition of traffic from project traffic would not result in any significant changes to emergency vehicle response times in the area. Therefore, subject to approval from the County and the fire department, the development of the proposed project is not expected to have any adverse effects on emergency vehicle access.

*Internal Circulation* - No internal site circulation or access issues have been identified that would cause a traffic safety problem or any unusual traffic congestion or delay. In general, the project was not found to cause (or substantially increase) any safety hazards due to any design features or incompatible uses.

## PARKING

*Parking Requirements Based on the Contra Costa County Municipal Code* - Parking analysis is provided for planning and informational purposes only. This section discusses the Contra Costa County's municipal code requirements for the project. As per the County's Municipal Code (Section 82-16.406 (a) (15) – self storage) subject to County approval, the minimum off-street parking requirement for this project is 1 space per every 350 square feet of office space, which equates to a requirement of 5 parking spaces. The project is proposing to provide 7 off-street parking spaces in an on-site surface parking lot.

*Parking Demand Based on ITE Parking Generation Rates* - To provide additional justification for the parking demand analysis, Table 8 provides a summary of the parking demand results using the average ITE peak parking demand rates for general light industrial uses (ITE Land Use

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<sup>5</sup> Access Management Manual, Second Edition, Transportation Research Board, Washington D.C., 2014.

**Code 1110).** The rates were taken from the 5th Edition of the ITE Parking Generation Manual. As shown in **Table 2**, the parking demand generated would be forecast to be approximately 5 parking spaces based on the ITE data.

*Construction Equipment Parking* – The project is currently proposing to provide a maximum of 110 spaces for storage of construction equipment.

**Table 2**  
**Off-Street Parking Calculations Using Parking Data from**  
**the Institute of Transportation Engineers**


Land Use	Size		Parking Ratio	Estimated Demand
Light Industrial	9	employees	0.55	5 spaces

*Bicycle Parking* - This section discusses the **Contra Costa County’s municipal code** bicycle parking requirements for the project. As per the **County’s Municipal Code**, the minimum off-street parking according to the code would require a minimum of two short term bicycle spaces and two long term bicycle spaces. The project is proposing to meet this requirement by providing two short term bicycle spaces and two long term bicycle spaces.

*Electrical Vehicle Parking/Charging Stations* – The County’s Municipal Code specifies requirements for electrical vehicle charging spaces for any new construction. **Based on Table 5.106.5.3.3 within Section 5.106.5.3 of the code**, there would be no electric vehicle charging spaces required for the proposed project. This is because the code specifies that projects that are not required to provide 10 or more parking spaces do not have to provide any electrical vehicle charging spaces, subject to County approval

Please don’t hesitate to contact me if you have any questions or need additional information.

Sincerely,



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