

FINAL
Willow Avenue Commercial Center Project
Initial Study/Mitigated Negative Declaration
City of Hercules, Contra Costa County, California

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ACRONYMS AND ABBREVIATIONS

$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
$^{\circ}\text{F}$	degrees Fahrenheit
$^{\circ}\text{C}$	degrees Celsius (Centigrade)
APN	Assessor's Parcel Number
BAAQMD	Bay Area Air Quality Management District
BMP	Best Management Practice
BNSF	Burlington Northern and Santa Fe
Caltrans	California Department of Transportation
CBC	California Building Code
CCTA	Contra Costa Transportation Authority
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO_2e	carbon dioxide equivalent
CUPA	Certified Unified Program Agency
dB	decibel
dBA	decibel, A-weighted
DPM	diesel particulate matter
DPR	California Department of Parks and Recreation
EBMUD	East Bay Municipal Utility District
ESA	Environmental Site Assessment
FCS	FirstCarbon Solutions
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
GHG	greenhouse gas
HCP	Habitat Conservation Plan
HVAC	heating, ventilation, and air conditioning
IS/MND	Initial Study/Mitigated Negative Declaration
L_{dn}	day/night sound level
L_{eq}	equivalent continuous sound level
LID	Low Impact Development
LOS	Level of Service

Acronyms and Abbreviations

mgd	million gallons per day
MIR	maximum impacted sensitive receptor
MRZ	Mineral Resource Zone
MS4	municipal separate storm sewer system
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
PPV	peak particle velocity
RWQCB	Regional Water Quality Control Board
SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TIA	Transportation Impact Analysis
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VdB	vibration decibel
WestCAT	Western Contra Costa Transit Authority

SECTION 1: INTRODUCTION

The purpose of this Initial Study/Mitigated Negative Declaration (IS/MND) is to identify any potential environmental impacts from implementation of the Willow Avenue Commercial Center Project in the City of Hercules, California. Pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15367, the City of Hercules is the Lead Agency in the preparation of this IS/MND and any additional environmental documentation required for the project. The City has discretionary authority over the proposed project. The intended use of this document is to determine potential environmental impacts resulting from project implementation and to provide the basis for input from public agencies, organizations, and interested members of the public.

The remainder of this section provides a brief description of the project location and the characteristics of the project. Section 2 includes an environmental checklist giving an overview of the potential impacts that may result from project implementation. Each individual subsection elaborates on the information contained in the environmental checklist, along with justification for the responses provided in the environmental checklist.

1.1 - Project Location

The project site is located in the eastern portion of the City of Hercules, Contra Costa County, California (Exhibit 1). The project site is located at the southeastern corner of the Willow Avenue and Palm Avenue intersection. The 7.1-acre project site is on two parcels with Assessor Parcel Numbers (APNs) of 406-522-001 and 406-522-004. Latitude is 38° 00' 44" North and Longitude is 122° 15' 25" West.

1.2 - Environmental Setting

The project site is bounded by Palm Avenue to the west, Willow Avenue and undeveloped land to the north, undeveloped land to the east, and the Burlington Northern and Santa Fe (BNSF) Railroad to the south (Exhibit 2). The site consists of undeveloped land with no improvements. The two parcels that are part of the project site are irregular in shape, with frontage on Willow Avenue and the BNSF tracks. APN 406-522-001 has frontage on Palm Avenue near the railroad bridge over Palm Avenue. State Route 4 (SR-4) is located approximately 300 feet north of the site. The City of Hercules General Plan land use designation and zoning for the project site is General Commercial (CG). Surrounding land uses include the Valley Bible Church and the Valley Preschool and Daycare north of the site, commercial development and the California Department of Transportation (Caltrans) Maintenance Yard to the west, and single-family residential development across the BNSF tracks to the south.

1.3 - Project Description

The project proposes the development of a commercial center consisting of a self-storage facility and automotive service center (Exhibit 3). The self-storage facility would consist of a leasing office with a manager's quarters above and four self-storage buildings on APN 406-522-004 along with an area for a U-Haul truck rental, and the automotive service center would consist of three buildings on

APN 406-522-001. The total floor area of these eight buildings would be approximately 148,591 square feet. The project also would include approximately 83 parking spaces, most of them at the automotive service center. The self-storage facility and automotive service center would operate independently of each other¹ and be separated by a security fence or a wall. A stormwater basin would be located in the southwestern corner of the project site and serve both land uses. Access to the project site would be via one median-divided driveway off Willow Avenue.

As noted, the project site has an existing City General Plan land use designation and zoning of General Commercial. This land use category is a non-specialized designation that is intended to permit a wide variety of commercial uses. The project applicant anticipates that businesses locating to the site would attract clientele from both Hercules and the adjacent communities, as well as those using I-80 and SR-4. Uses allowed within this designation include, but are not limited to, retail, wholesale (open to the public), offices (businesses, professional and service), and other business serving the clientele. Uses in this designation may include automobile service stations, restaurants, and automobile repair services, and other similar uses, provided that the location and design of these uses effectively mitigate any potential off-site impacts.

A more detailed description of the proposed project is provided below.

1.3.1 - Self-Storage Facility

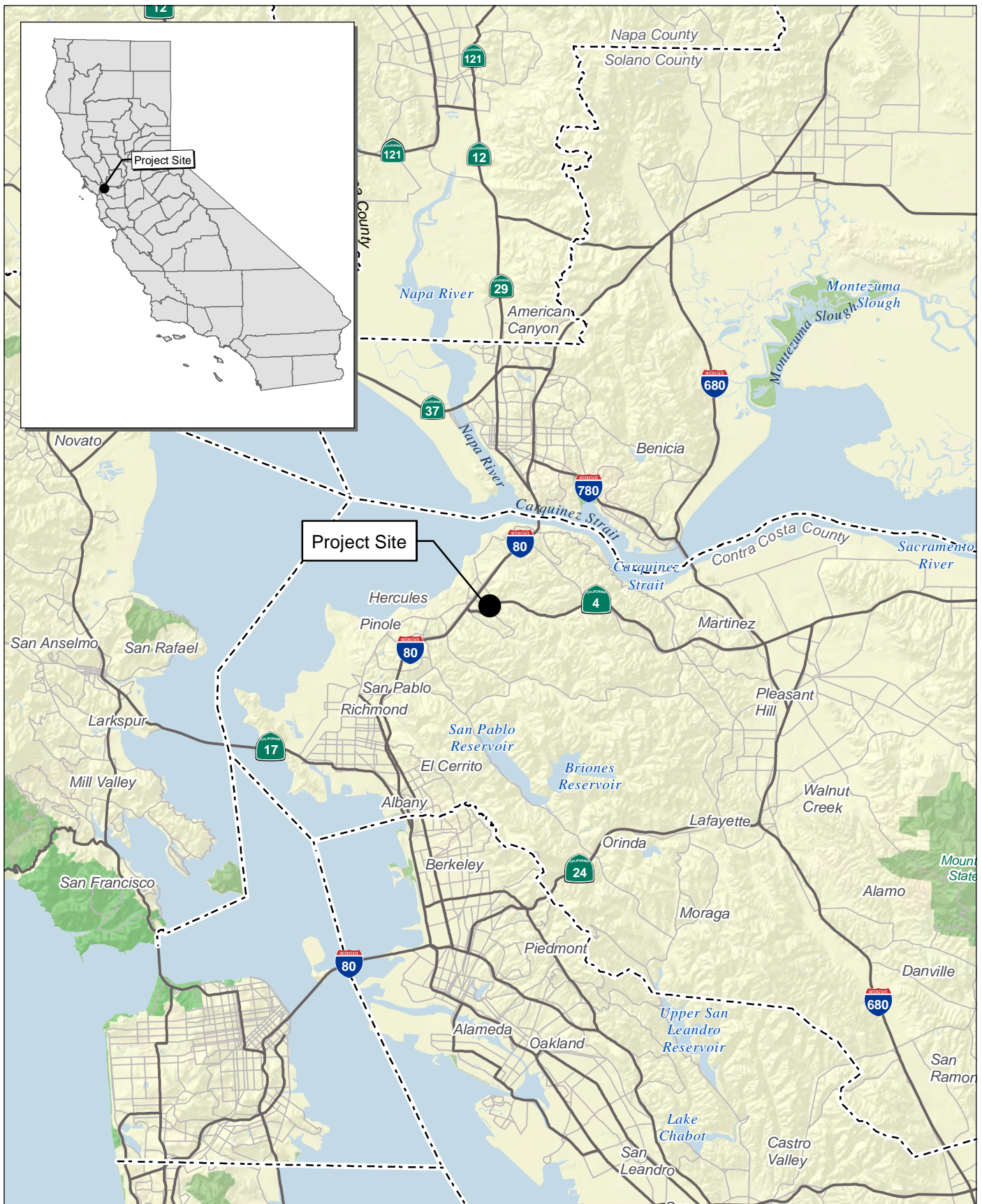
The five-building self-storage facility, including office and manager's quarters, would occupy the eastern portion of the project site (Exhibit 4). The five self-storage buildings would have approximately 130,730 square feet in floor area (Exhibit 5). Table 1 provides the approximate floor area for each of the storage buildings plus the number of storage units in each building.

Table 1: Self-Storage Facility Floor Area and Units

Self-Storage Facility Buildings*	Floor Area (approx. square feet)	Number of Units
Office/Manager's Quarters	3,867	N/A
A	8,732	58
B	10,382	50
C	6,598	33
D	101,151	699
Total	130,730	840
Note: * Lettering of buildings corresponds to labeling on Exhibit 4.		

Individual storage units would vary in size from a floor area of approximately 5 feet by 5 feet to a floor area of 15 feet by 50 feet. The majority of units (679) would range in size from a floor area of approximately 5 feet by 10 feet to a floor area of approximately 10 feet by 20 feet.

¹ The uses will share a common driveway, and will share utilities.



Source: Census 2000 Data, The CaSIL, FCS GIS 2013.

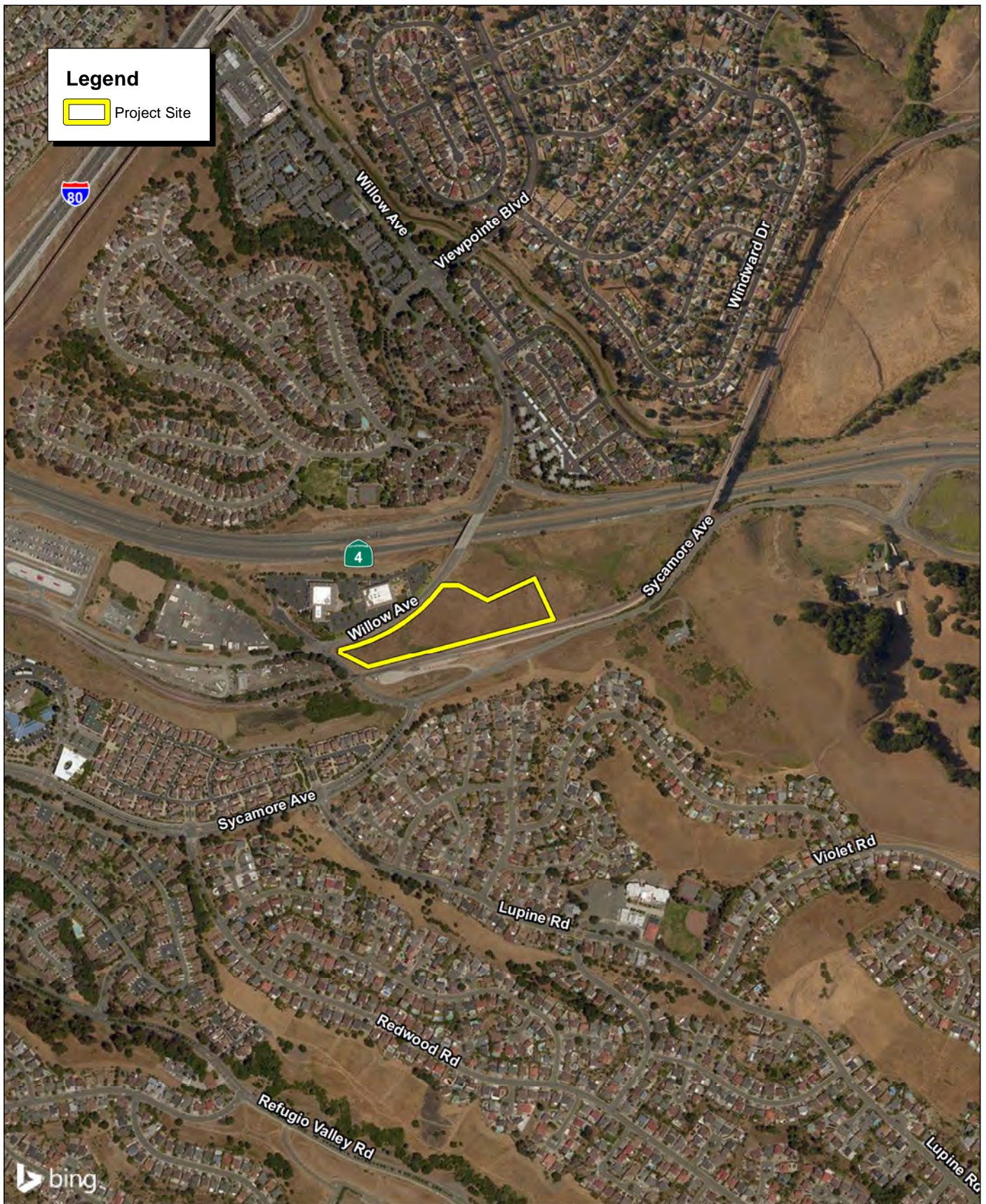
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Exhibit 1 Regional Location Map

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Source: Bing Aerial Imagery.

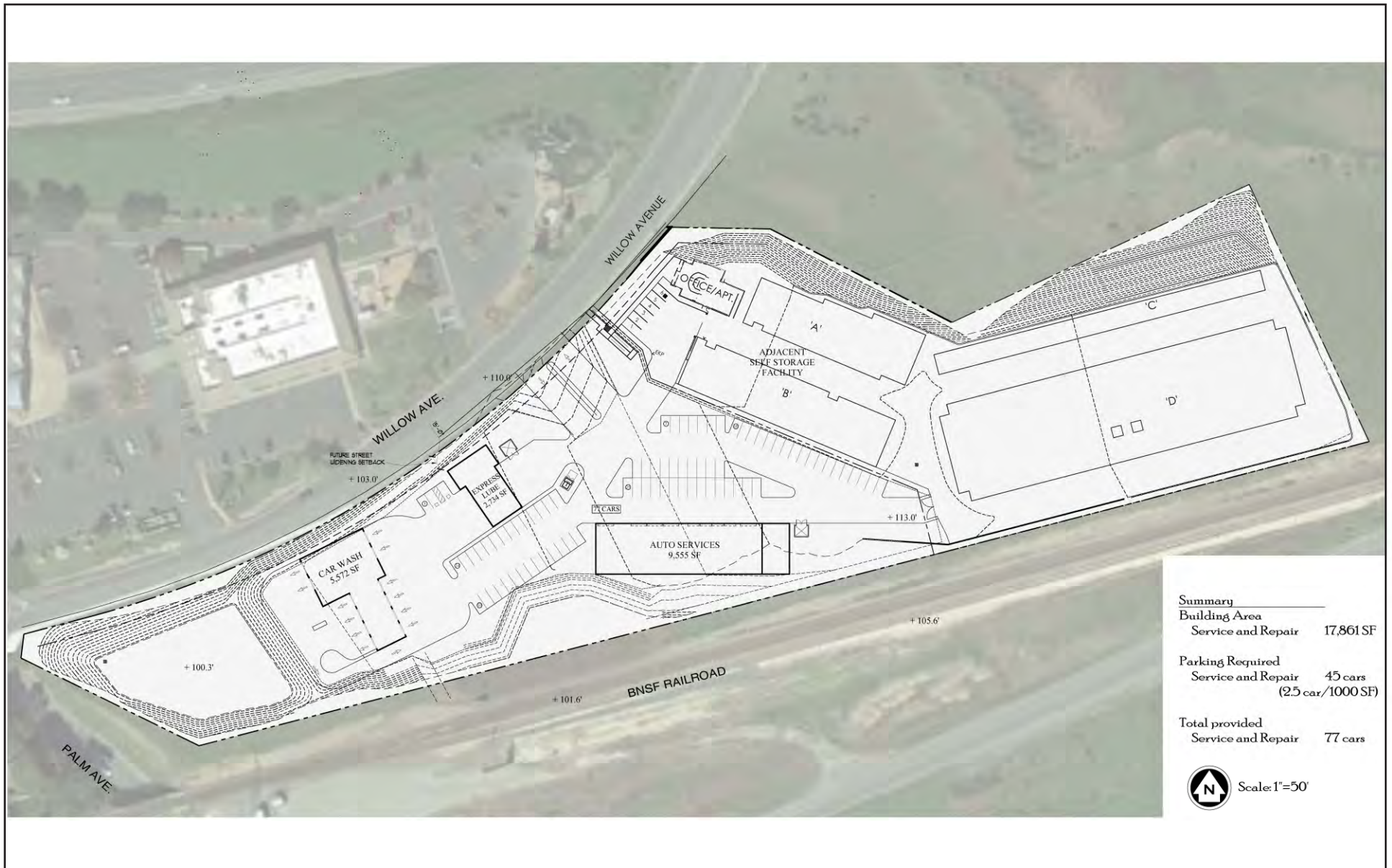
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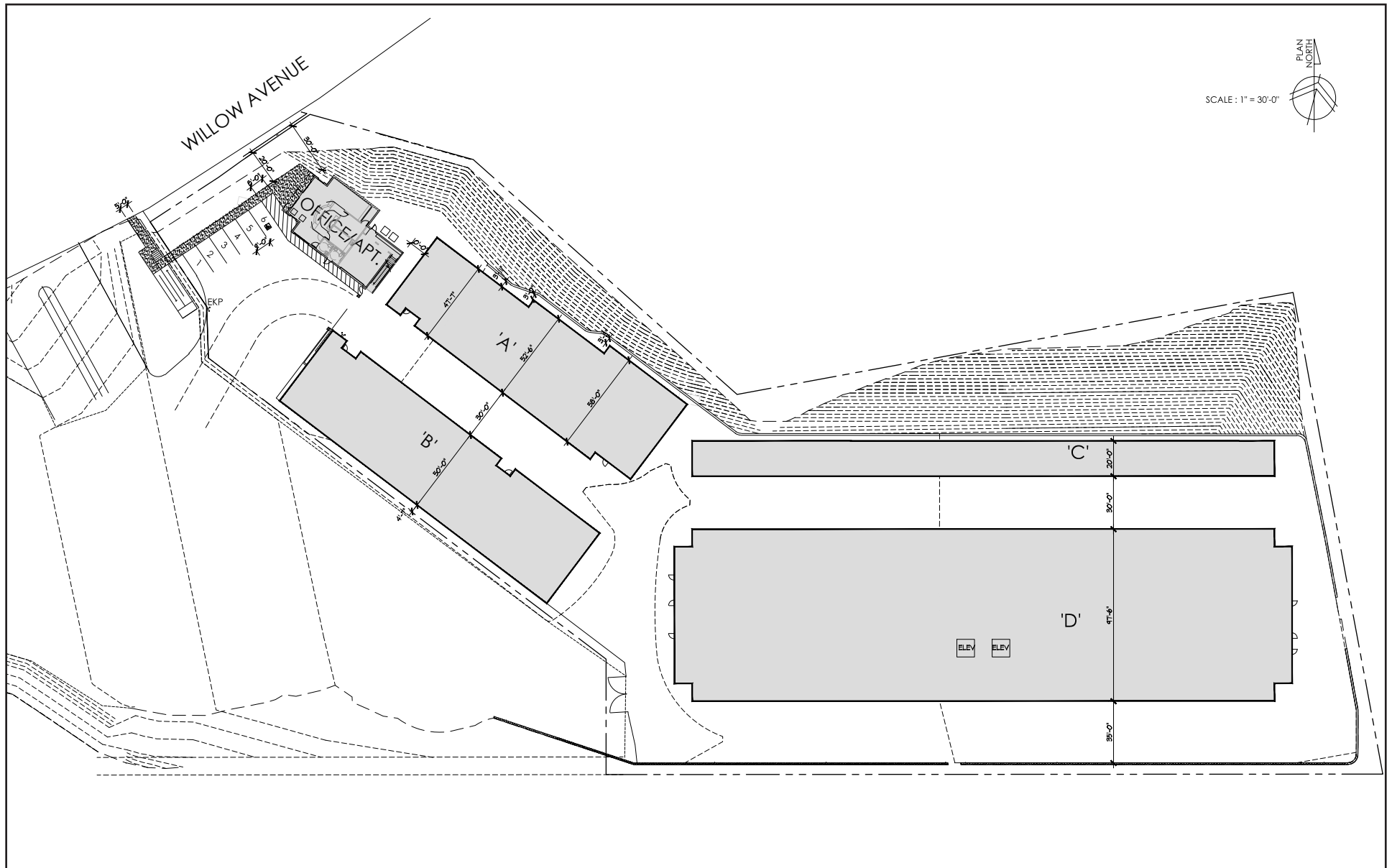
Exhibit 2 Project Vicinity

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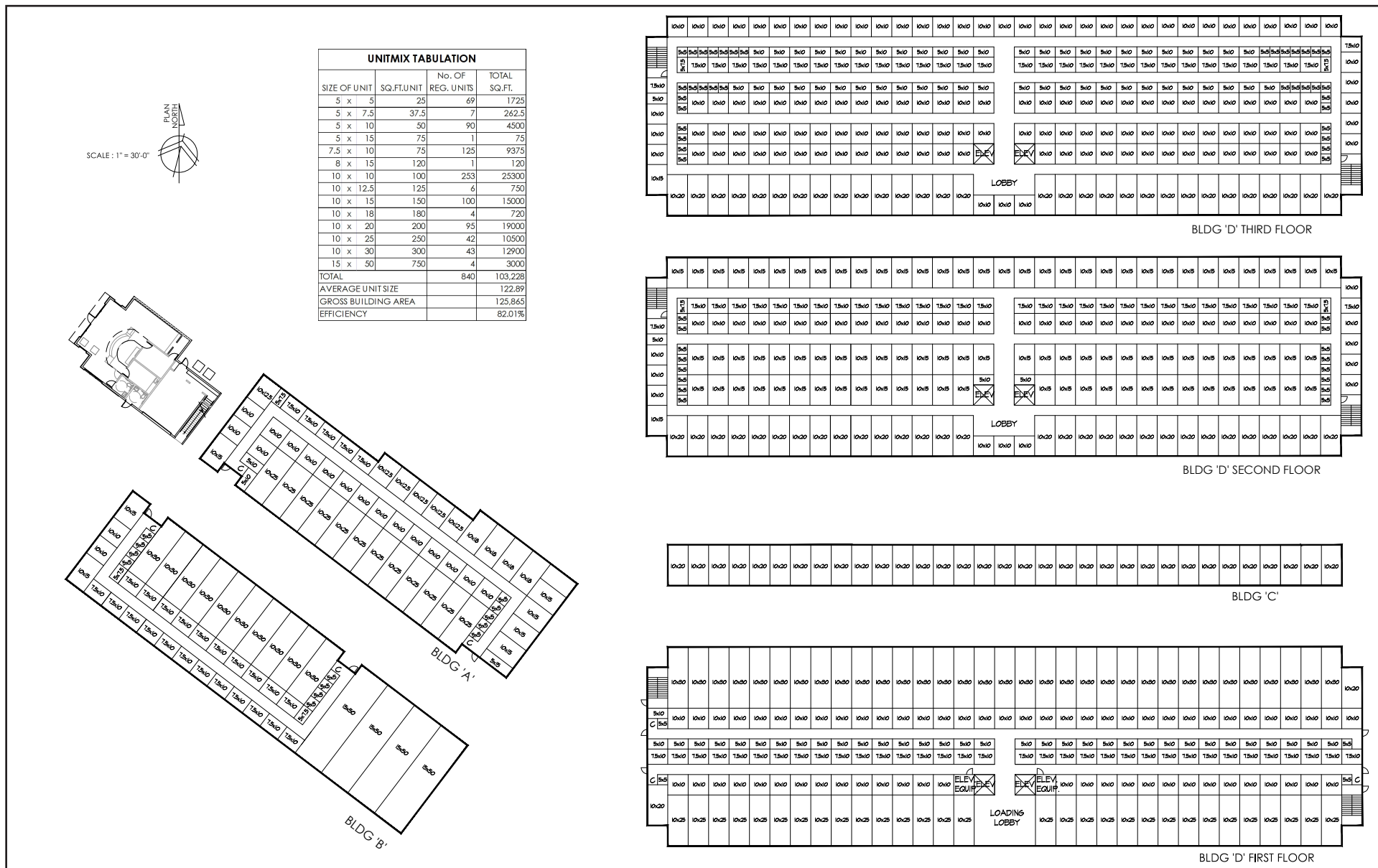
Source: Johnson Lyman Architects, February 2018.

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Source: Valli Architectural Group, January 2018.

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Buildings A, B, and C are proposed to be one-story structures, except for an office/manager's quarters area at the front of Building A (Exhibit 6 and Exhibit 7). The maximum heights for Buildings A and B would be approximately 20 feet, and the maximum height for Building C would be approximately 14 feet. Buildings A and B would have storage units accessible from outdoors and indoors, while storage units in Building C would be accessible exclusively from outdoors. Building C also would have only one row of storage units, all with floor areas of approximately 10 feet by 20 feet.

In the front of Building A would be the office and manager's quarters, which would be two stories with a maximum height of approximately 32 feet and approximately 3,867 square feet of floor area. The lower floor would contain the office, along with a lobby and reception area, display area, area for postal boxes, a break room, restrooms, a work/storage area, and a two-car garage. The upper floor would have a manager's quarters with two bedrooms, two bathrooms, a kitchen and dining area, a living room, a storage area, and an outdoor deck.

Building D, the largest of the four buildings, is proposed to be a three-story structure (Exhibit 8). The maximum height proposed for Building D would be approximately 33 feet, 10 inches. Building D would have storage units accessible from outdoors and indoors. All the outdoor-accessible units would be on the ground floor; the second and third stories would have units accessible only from indoors. None of the storage units on the second or third floors would have a floor area greater than 10 feet by 20 feet. Two elevators and two sets of stairs would provide access to the upper floors of Building D. A loading lobby would be available on the ground floor, providing access to the elevators.

A parking area for U-Haul trucks and vans is proposed adjacent to and south of Building D. According to the project applicant, the project proposes to make eight to twelve trucks and vans available for rent, including pickup trucks and ¾-ton vans. The maximum truck size is anticipated to be approximately 26 feet. All trucks would use gasoline as fuel.

All storage buildings would be constructed of Precision Concrete Masonry Units (concrete blocks) with a finish of elastomeric paint (an acrylic latex paint suitable for masonry surfaces). Metal siding would be installed on the second and third stories of Building D. Storage unit areas would have a standing seam metal roof. Metal gutters and downspouts would collect runoff from the roofs and direct it to the ground, where it would be collected by storm drainage facilities.

Six parking spaces, including one handicapped space, would be provided at the front of the facility adjacent to the office/manager's quarters. A security fence or wall approximately 8 feet in height would separate the self-storage facility from the adjacent automotive service center, which is described below.

1.3.2 - Automotive Service Center

The automotive service center would occupy the western portion of the project site (see Exhibit 3). This area would consist of three buildings, primarily proposed for automobile services, including but not limited to a tire store, a car wash, and an oil change facility, along with a parking area with 77 spaces (Exhibit 3). Total floor area of these buildings would be approximately 17,861 square feet. The approximate size of each building proposed to be part of the automotive service center is listed below:

- Tire store/automobile shop—9,555 square feet
- Oil change facility—2,734 square feet
- Car wash—5,572 square feet. The proposed car wash would have four self-service bays and two automated bays.

Parking

According to the City of Hercules Zoning Ordinance Parking Standards, 2.5 parking spaces are required per 1,000 square feet of commercial service and repair land use. As the proposed automotive services center totals 17,861 square feet, 45 parking spaces are required.

The proposed project provides 32 more parking spaces than required, for a total of 77 parking spaces.

1.3.3 - Other Project Features

Landscaping

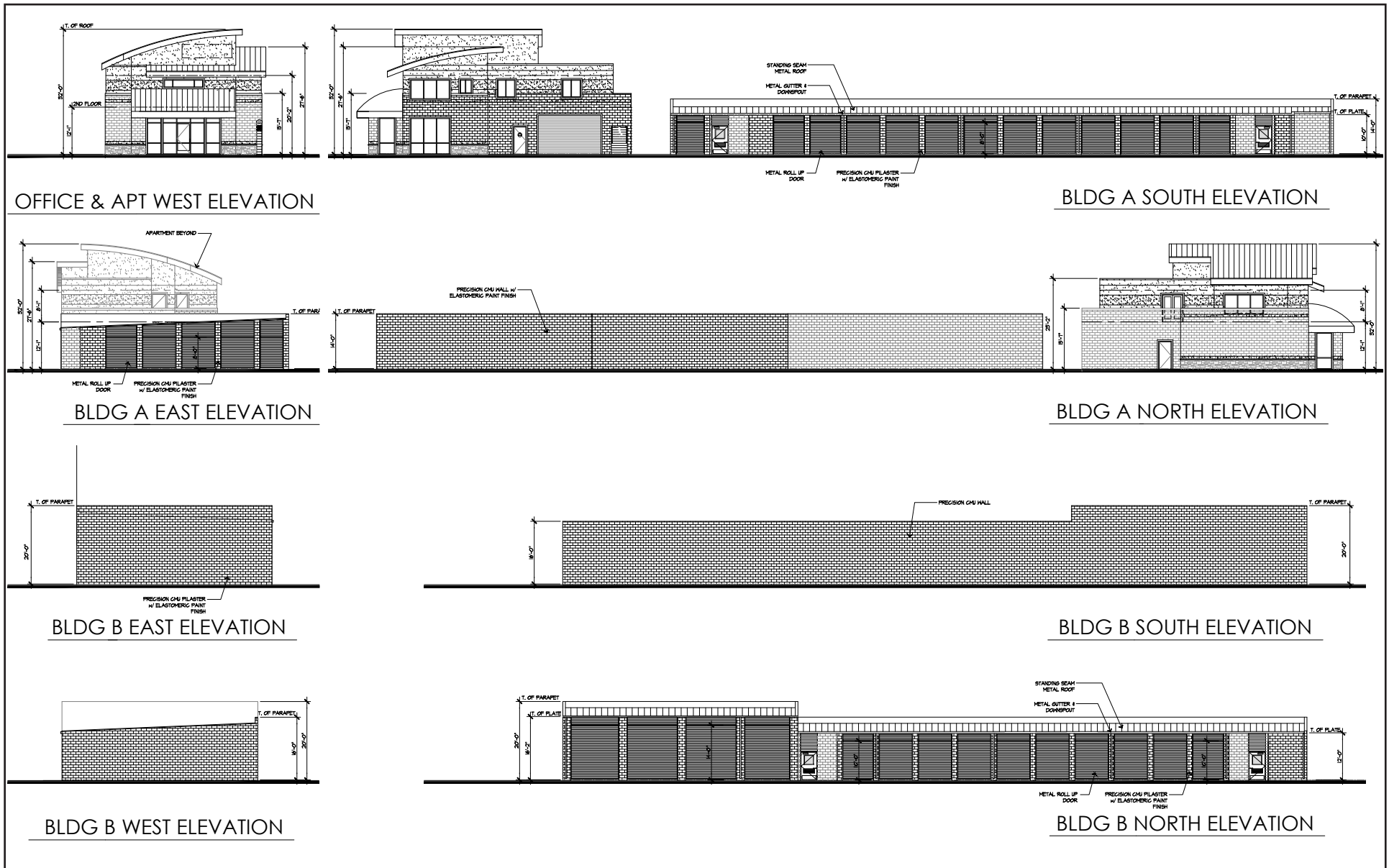
Landscaping is proposed for the automotive service center, with more limited landscaping at the front of the self-storage facility as a result of a required Americans with Disabilities Act ramp.

Sanitary Sewer System

The project would install on the project site a private sanitary sewer system consisting of 6-inch and 8-inch collection main lines, interconnecting manholes, and a sewer lateral to each building that is to be provided with a domestic water service. The main line collection system will traverse the project site from east to west through the parking areas, interconnected with manholes, and collecting flows from each proposed building as it proceeds downstream. The collection system will exit the site between the proposed “Car Wash” facility and the proposed “Express Lube” building and enter the Willow Avenue public right of way. The main line will then proceed westerly along and within the Willow Avenue public right of way. It is at this point where alternatives are encountered.

Alternative One would consist of connecting to an existing private sanitary sewer manhole and sewer discharge system located within the Willow Avenue public right-of-way just east of the Willow Avenue and Palm Avenue intersection. The system is currently owned and operated by Valley Bible Church. Record drawings indicate the existing private sanitary system proceeds west along Willow Avenue, crosses Palm Avenue, and then proceeds approximately 430 feet west. From this point, the private sanitary sewer system turns and proceeds south approximately 210 feet to a private lift station. The private lift station lifts and pumps the sewage approximately 50 feet west and discharges the sewage into a public sanitary sewer system manhole. An existing public 14-inch transmission main exits the manhole to the west.

Alternative Two would also use the existing private sanitary sewer system as described in Alternative One. This alternative assumes the private sanitary sewer system will be acquired by the City of Hercules from Valley Bible Church and operated and maintained as a public facility.



Source: Valli Architectural Group, January 2018.

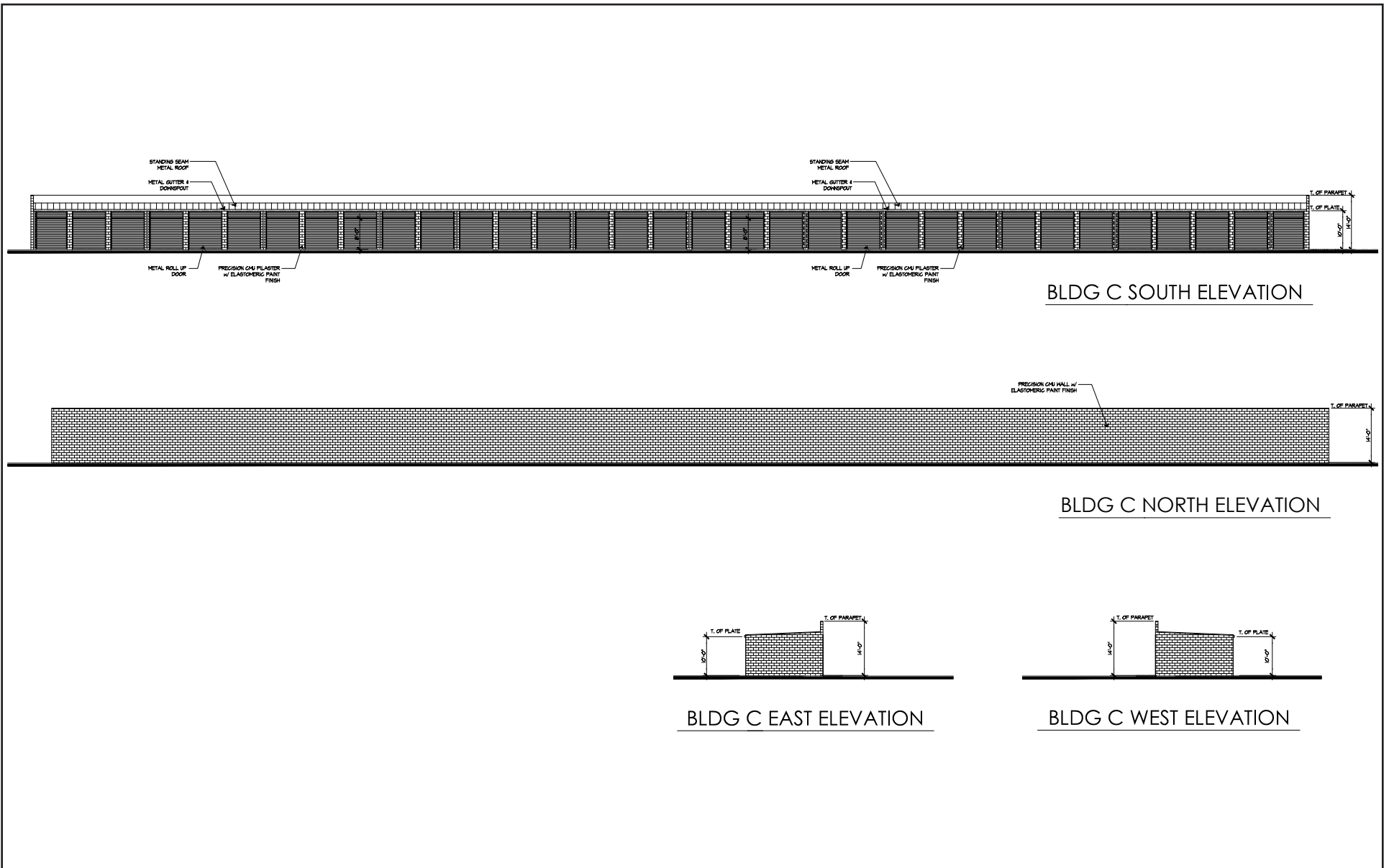
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Exhibit 6
Elevations, Buildings A and B

CITY OF HERCULES • WILLOW AVENUE COMMERCIAL CENTER
INITIAL STUDY / MITIGATED NEGATIVE DECLARATION

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Source: Valli Architectural Group, January 2018.

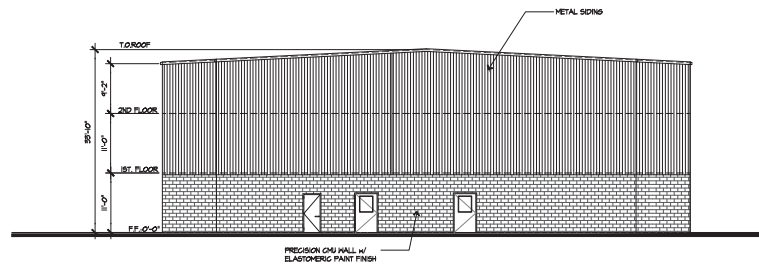
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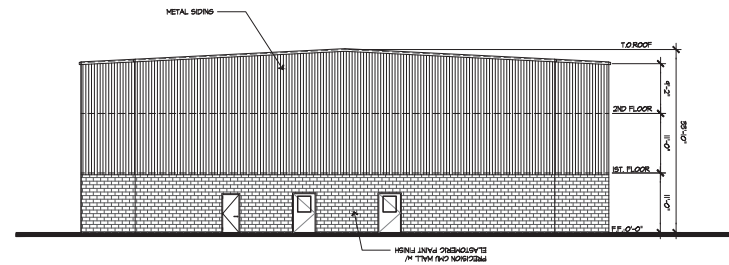
Exhibit 7
Elevations, Building C

CITY OF HERCULES • WILLOW AVENUE COMMERCIAL CENTER
INITIAL STUDY / MITIGATED NEGATIVE DECLARATION

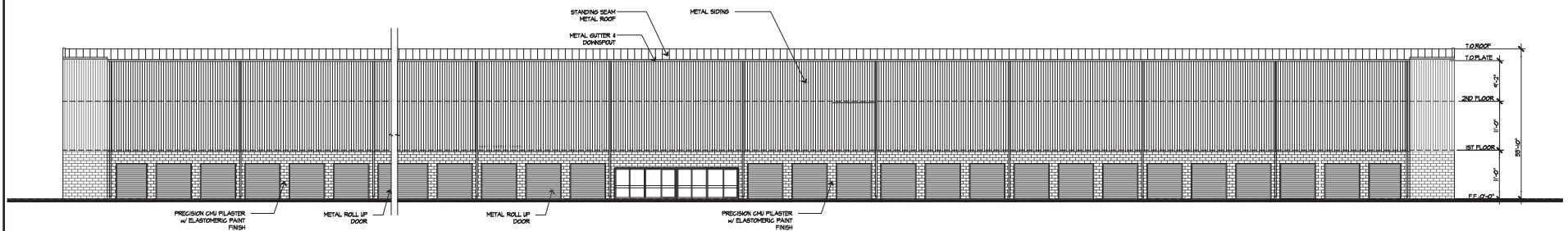
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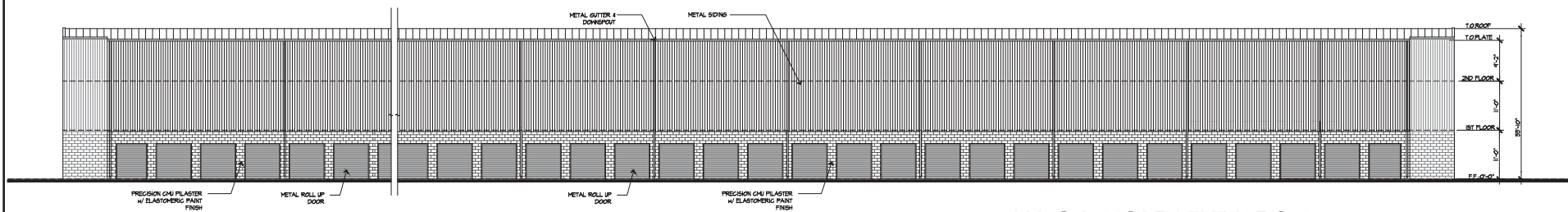
BLDG D EAST ELEVATION



BLDG D WEST ELEVATION



BLDG D SOUTH ELEVATION



BLDG D NORTH ELEVATION

Source: Valli Architectural Group, January 2018.

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Exhibit 8
Elevations, Building D

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Alternative Three would install a sanitary sewer conveyance system parallel to and separate from the existing private sanitary sewer system. This alternative would be designed and constructed to City of Hercules standards and dedicated to the City as a public facility. Similar to the existing private sanitary sewer system, the parallel facility would consist of a series of main lines—8-inch in size—and manholes that ultimately arrive at a new sanitary sewer lift station from where the project effluent would be pumped into the same existing public system manhole as where the current private lift station discharges. The new facilities would be installed in the public right of way along Willow Avenue by open cut methods to a point approximately 430 feet west of the Willow Avenue and Palm Avenue intersection where they would then turn south and cross over private property.

As of the date of this IS/MND, the Valley Bible Church has not agreed to provide the proposed project access to its sewer collection system. As such, Alternative Three should be considered the most likely scenario for the proposed project's sanitary sewer system.

As of the date of this IS/MND, the Valley Bible Church has not agreed to provide the proposed project access to its sewer collection system. As such, Alternative Three should be considered the most likely scenario for the proposed project's sanitary sewer system.

This approach would require a public easement acquisition from the landowner of APN 406-160-002. A new 8-inch sewer main line and new lift station with associated ancillary facilities will be constructed on the private property within the acquired easement. Temporary construction easements will be required to facilitate construction.

Site Access

Access to the project site would be provided by a single driveway with a median island off Willow Avenue, which would be located directly across from the driveway to the church and preschool to the north. The entrance to the self-storage facility would be located within the project site and would be gated. An additional emergency vehicle access would be provided for the self-storage facility via a gated access point at the southeastern corner of the automotive service center (see Exhibit 4).

Solar Energy

The project proposes to install a solar energy system on the self-storage facility that would generate approximately 100 kilowatt-hours (kWh) renewable energy per year.

Stormwater

A detention basin for stormwater is proposed in the westernmost portion of the project site. The basin would collect stormwater from both the self-storage facility and the automotive service center. Subdrains are proposed along the site frontage in the vicinity of the detention basin, along with the area in the northeast corner of the site.

1.3.4 - Project Construction

Project construction would require cut and fill of portions of the project site (Exhibit 9). Project cut and fill quantities are estimated at 46,500 cubic yards, with a balance between cut and fill; that is, no

dirt is proposed to be imported or off-hauled. Supplemental remedial earthwork is proposed for subexcavations for the self-storage buildings and for a portion of the automotive service center, along with excavations for the subdrains within all fill slope keyways and subdrains within the detention basin. The estimated quantity of the remedial grading is 13,560 cubic yards. The project also proposes a possible rebuild of the sloped area adjacent to the proposed self-storage facility, which consists of removing *in situ* soils and replacing them with engineered compacted soils. The estimated quantity of the slope rebuild is 1,250 cubic yards.

1.4 - Required Discretionary Approvals

The following permits/approvals would be required from the City of Hercules:

- CEQA compliance (i.e., adoption of IS/MND)
- Zoning text amendment
- Development Agreement
- Conditional Use Permit
- Design Review Permit
- Lot Line Adjustment
- Encroachment permits
- Grading permits
- Building permits
- Certificates of occupancy

1.4.1 - CEQA Compliance

The adoption of this IS/MND would comply with CEQA requirements.

1.4.2 - Zoning Text Amendment

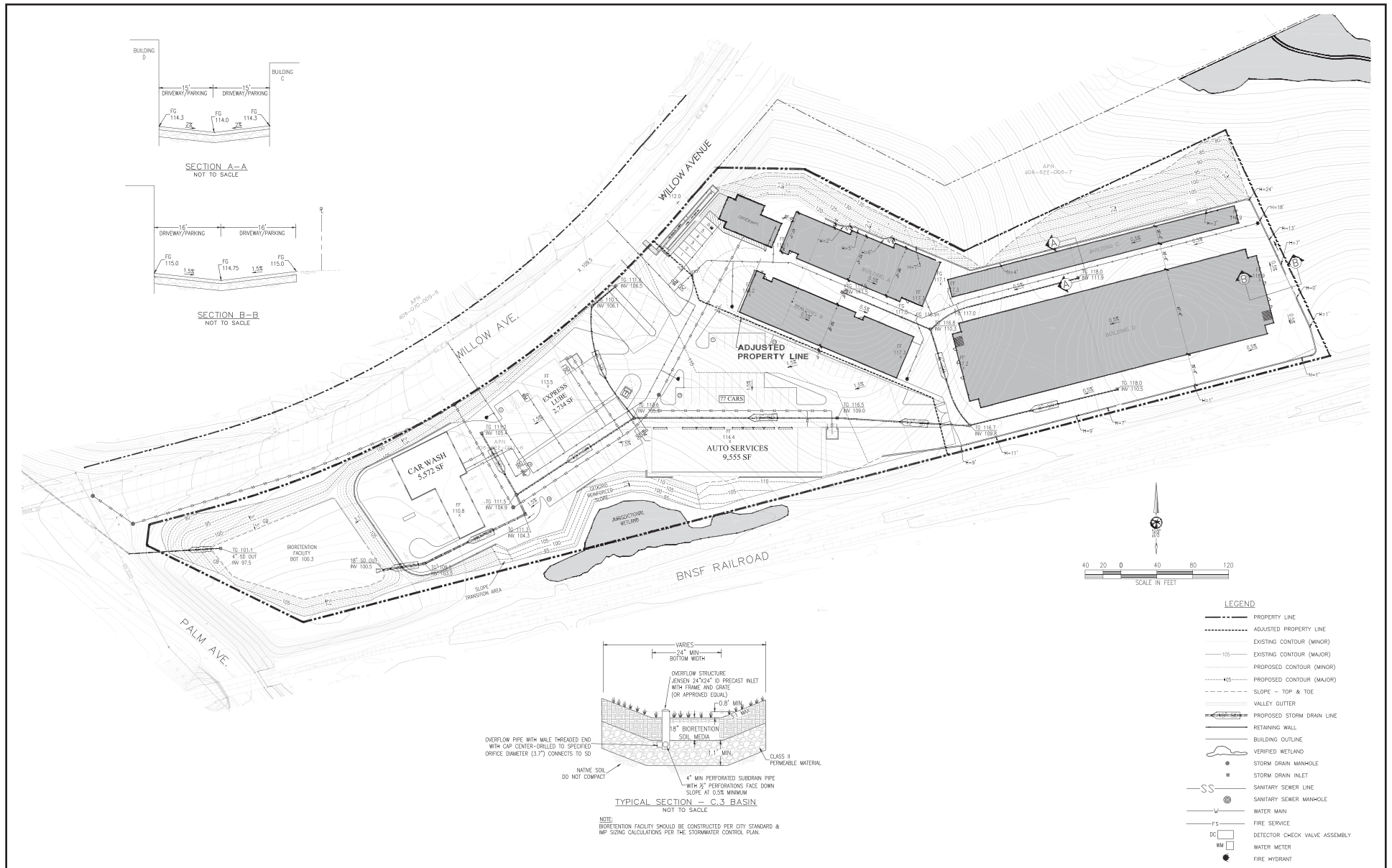
Proposed to add self-storage as a conditionally permitted use in the General Commercial District

1.4.3 - Development Agreement

The City and the Applicant/Developer have negotiated and drafted a proposed Development Agreement that accomplishes two primary objectives that would have no physical impact on the environment. First, the Development Agreement provides vested rights to develop the project for a single ten-year term. If the self-storage portion of the project has been completed, the term is automatically extended by an additional five years. Second, and in exchange for those vested rights, the Development Agreement provides substantial public benefits in the form of a municipal surcharge equal to ten percent of the gross revenue derived from the base rent actually collected by the Applicant/Developer of the self-storage units. While self-storage uses place few demands on City services and have little utility or service needs, a typical self-storage facility generates little revenue aside from some property tax. The proposed Development Agreement thus addresses this situation by ensuring the City will receive a share of the revenue the project generates in the form of an on-going income stream tied to the rents paid for the self-storage units

1.4.4 - Conditional Use Permit

The Conditional Use Permit would allow the self-storage facility in the General Commercial District.



Source: Bellecci & Associates, Inc., February 2018.

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Exhibit 9
Grading Plan

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INITIAL STUDY / MITIGATED NEGATIVE DECLARATION

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1.4.5 - Design Review Permit

The Design Review Permit will ensure that the project will comply with the general design standards of the City of Hercules.

1.4.6 - Lot Line Adjustment

The Lot Line Adjustment shall allow parcel line adjustment within the proposed project boundaries; the number of parcels will remain the same.

1.4.7 - Encroachment Permit

The Encroachment Permit will allow the proposed project to improve facilities within the City of Hercules right-of-way.

1.4.8 - Building and Grading Permits

Building and Grading Permits are required before the project begins any earthwork or construction activities.

1.4.9 - Certificates of Occupancy

A Certificate of Occupancy will be issued once construction of the proposed project is complete and the structure are deemed suitable for occupancy.

1.5 - Intended Uses of this Document

This IS/MND has been prepared to determine the appropriate scope and level of detail required in completing the environmental analysis for the proposed project. This document will also serve as a basis for soliciting comments and input from members of the public and public agencies regarding the proposed project.

The City of Hercules filed a Notice of Intent (NOI) to Adopt a Mitigated Negative Declaration (MND) for the proposed project at the Contra Costa County Clerk's office on June 22, 2018. The Draft IS/MND was circulated for public review for 20 days, June 22, 2018–July 12, 2018.

1.5.1 - Comments Received

One comment letter was received during the public review period. The comment is listed in Table 2 and provided in Appendix H of this IS/MND.

Table 2: IS/MND Comment Letter

Commenter	Summary of Environmental Issues Raised in Comment Letter	Date	IS/MND Section Where Comment Is Addressed (If Applicable)
Leon Zhu, City of Hercules Resident	Concerned about traffic congestion at the Highway 4 and Interstate 80 merge, as well as patrons to the proposed project. Opposes project.	June 26, 2018	16. Transportation/Traffic Tables 34 and 35. Level of Service (LOS) impacts to SR-4 EB/I-80 NB Off-Ramp would not be significant.

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SECTION 2: ENVIRONMENTAL CHECKLIST AND ENVIRONMENTAL EVALUATION

Environmental Factors Potentially Affected					
The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.					
<input type="checkbox"/>	Aesthetics	<input type="checkbox"/>	Agriculture and Forestry Resources	<input type="checkbox"/>	Air Quality
<input checked="" type="checkbox"/>	Biological Resources	<input checked="" type="checkbox"/>	Cultural/Tribal Cultural Resources	<input checked="" type="checkbox"/>	Geology/Soils
<input type="checkbox"/>	Greenhouse Gas Emissions	<input type="checkbox"/>	Hazards/Hazardous Materials	<input type="checkbox"/>	Hydrology/Water Quality
<input type="checkbox"/>	Land Use/Planning	<input type="checkbox"/>	Mineral Resources	<input checked="" type="checkbox"/>	Noise
<input type="checkbox"/>	Population/Housing	<input type="checkbox"/>	Public Services	<input type="checkbox"/>	Recreation
<input checked="" type="checkbox"/>	Transportation/Traffic	<input type="checkbox"/>	Utilities/Services Systems	<input checked="" type="checkbox"/>	Mandatory Findings of Significance

Environmental Determination

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measure based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Date: 6/19/18 Signed: [Signature]

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
1. Aesthetics <i>Would the project:</i>				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Evaluation

Would the project:

a) Have a substantial adverse effect on a scenic vista?

Less than significant impact. Scenic vistas are typically understood to mean distant views that are considered to have aesthetic value. In the Hercules area, depending on location, scenic views may include views of San Pablo Bay and the hills and mountains. The Hercules General Plan specifically discusses the higher areas of the City east of Interstate 80 (I-80) that overlook San Pablo Bay with distant views of the coastal range in Marin County. In addition, the SR-4 corridor through Franklin Canyon has scenic views of the valley and adjacent hillside grasslands and oak woodlands. Scenic vistas that are currently available in the project vicinity include a mix of hills and open space areas to the east of the project site. Near the project site, the BNSF track and berm is a prominent visual feature, as are communication towers to the south and utility lines and poles along Palm Avenue. The scenic views identified in the City General Plan are not visible from the project site.

Approval and construction of the proposed project would alter the character of existing scenic vistas by adding new buildings on a site that currently has no structures. In order to illustrate how the proposed project would impact the existing visual character, visual simulations were created to illustrate how the project would look from several public vantage points in the project vicinity (Exhibit 10). Exhibits 10a through 10h provide visual simulations that illustrate how the buildings would appear from several vantage points. The project site is located in an area where the most prominent views are the existing urban development, the towers, and the utility poles. These features are not considered to have high scenic value, so the project would not affect the value of these features. Most of the proposed buildings are one story in height; they would not intrude significantly on any scenic vistas available in the area. One of the self-storage facility buildings (Building D) is proposed to be three stories, and the vantage point most affected by this building is

the residential area to the south. However, as shown in Exhibit 10a, the project would not disrupt any distant ridgeline or hilltop views as viewed from the residential area. Similarly, views of ridgelines and hilltops as seen from the open space area to the east would not be disturbed by the project. Scenic vistas as seen from the nearest park, Foxboro Park to the north, consist of distant ridgelines to the south and middle distance hilltops to the southeast. As shown in Exhibit 10e, the proposed project would not obstruct views of the ridgelines or hilltops. Overall, impacts on scenic vistas would be less than significant.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway?

Less than significant impact. The project site is undeveloped and does not contain resources of scenic value, such as trees or rock outcroppings. A grove of trees is located west of the project site, but the project would not affect these trees.

There are no designated State Scenic Highways in the vicinity. However, the Hercules General Plan has designated SR-4 from I-80 to SR-84 a City Scenic Route. The Circulation Element states that views of the upper elevations of the hills surrounding SR-4 are designated scenic routes in the City. Views from SR-4 toward the project site consist of undeveloped lands of both flat and hilly terrain. Implementation of the project would change a portion of these views from rolling hills to middle distance views of the project's northern border, primarily buildings A, C, and D of the self-storage facility. However, at approximately 300 feet away from this road at its closest point, the project site is not within the Scenic Road and Highway Overlay District (Hercules Zoning Ordinance Chapter 25), which requires review of development that may affect designated scenic routes. Therefore, the project would not significantly intrude upon views from SR-4. Impacts on scenic resources would be less than significant.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less than significant impact. The project site is located in an area that is developed to the north, south, and west, and a railroad track extends along its southern boundary. The project site itself is undeveloped; as such, in order to illustrate how the proposed project would impact the existing visual character, visual simulations were created to illustrate how the project would look from several public vantage points in the project vicinity (Exhibit 10).

The most significant alteration in views would be from the residential area south of the BNSF tracks and from Willow Avenue looking southeast. As illustrated in Exhibit 10a, the proposed buildings would be visible, particularly the self-storage buildings when looking north from Poppy Court; however, even these buildings would be partially screened by trees and other landscaping, which would reduce the visual impact. As illustrated in Exhibit 10b, the proposed self-storage development would be visible from Willow Avenue; however, the proposed project would enhance the visual character of the site through a variety of landscaping.

While the proposed development would be partially viewable from the other public view points—southeast from the church parking lot (Exhibit 10c), southeast from the Willow Avenue and Palm Avenue Intersection (Exhibit 10d), south from the SR-4 overpass (Exhibit 10e), and southeast from Foxboro Park (Exhibit 10f)—the proposed landscaping and street trees enhance the existing visual

character of the site. As such, development proposed by the project would be consistent with the existing visual landscape from all public viewpoints.

Short-term impacts to existing visual character were also evaluated. Exhibits 10g and 10h show Viewpoint 1 and Viewpoint 4 respectively, without mature landscaping. While the proposed buildings would be more visible, the development would still be consistent with the existing visual landscape.

The project would be subject to design review, as set forth in Chapter 42 of the City Zoning Ordinance. Under Chapter 42, the City Planning Commission may approve, approve with conditions, or deny a design review application. Prior to approval, the Planning Commission must adopt findings that general site considerations have been designed to provide a desirable environment for the development, and general architectural considerations have been incorporated to ensure the compatibility of the development with its design concept and the character of adjacent buildings. Compliance with the Planning Commission conditions related to design review would reduce the aesthetic impact the proposed project would have on the project site and its surroundings. Impacts on visual character are considered less than significant.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less than significant impact. Construction of the proposed project would increase the amount of light and glare due to new lighting associated with building security and parking. Hercules Zoning Ordinance Section 31.300 sets forth light and glare performance standards for new development. These standards require screening of parking areas with vegetation or trees to reduce glare, and hooded lights for nighttime illumination of parking areas. Implementation of the standards in Section 31.300 would reduce the light and glare impacts of the project on adjacent developed properties. In addition, the nearest sensitive land uses to lighting are the Valley Preschool & Daycare northwest of the project site, which is approximately 270 feet away at its closest distance, and the residential area south of the BNSF tracks, which is approximately 325 feet away at its closest distance to the project site. Given this distance and the lighting requirements by the City, impacts related to light and glare would be less than significant.

Mitigation Measures

None.



Source: FirstCarbon Solutions, June 2018; Valli Architectural Group, February, 2018.

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Existing



Visual Simulation



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Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
2. Agriculture and Forestry Resources <i>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:</i>				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Evaluation

Would the project:

- a) **Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?**

No impact. The California Department of Conservation Farmland Mapping and Monitoring Program mapping for Contra Costa County Important Farmland designates the project site as “Grazing Land,” which is described as land on which the existing vegetation is suited to the grazing of livestock

(California Department of Conservation 2016). Therefore, development of the proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. No impacts would occur.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No impact. The project site does not support agricultural activities. Although the project site may be able to support livestock used for the production of food and fiber, no such activity is known to have occurred. The Hercules Zoning Ordinance designates the project site as General Commercial, a non-agricultural zoning district. The California Department of Conservation Farmland Mapping and Monitoring Program map for Contra Costa County Williamson Act lands indicates the project site is not under a Williamson Act contract (California Department of Conservation 2013). The proposed project would thus not conflict with existing agricultural zoning or with a Williamson Act contract. No impacts would occur.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No impact. The Hercules Zoning Ordinance designates the project site as General Commercial, which is a non-forest land zoning district. This condition precludes the possibility of a conflict with a forest zoning designation. No impacts would occur.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No impact. The project site does not contain, nor is it adjacent to, any forested land. The project site does not meet the Public Resource Code definition of “Forest land” as land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. There would be no loss of forest land or conversion of forest land to non-forest use as a result of the project. No impacts would occur.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No impact. The project site is not adjacent to or in the immediate vicinity of any existing agricultural or forestry operations. There is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance in Hercules. The project site is not considered suitable forest land. This condition precludes the possibility of the loss of forest land. Therefore, no impacts would occur.

Mitigation Measures

None.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
3. Air Quality <i>Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.</i> <i>Would the project:</i>				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Evaluation

The analysis in this section is based, in part, on the construction and operational emissions estimated using the California Emissions Estimator Model (CalEEMod 2016.3.1) completed by FirstCarbon Solutions (FCS). The CalEEMod model is designed as a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with construction and operation from different land uses. The modeling data is provided in its entirety in Appendix A.

Where available, the significance criteria established or recommended by the Bay Area Air Quality Air Quality Management District (BAAQMD) were used to make the following CEQA significance determinations. The BAAQMD has adopted standards of significance for construction and operation. The thresholds of significance are shown in Table 3. In developing thresholds of significance for air pollutants, the BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions.

Table 3: BAAQMD Thresholds of Significance

Pollutant	Construction Thresholds Average Daily Emissions (pounds/day)	Operational Thresholds	
		Average Daily Emissions (pounds/day)	Annual Average Emissions (tons/year)
Criteria Air Pollutants			
ROG	54	54	10
NO _x	54	54	10
PM ₁₀ (exhaust)	82	82	15
PM _{2.5} (exhaust)	54	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance, other Best Management Practices (BAAQMD Basic Construction Mitigation Measures)	Not Applicable	
Health Risks and Hazards for New Sources			
Excess Cancer Risk	10 per one million	10 per one million	
Chronic or 1-hour Acute Hazard Index	1.0	1.0	
Incremental annual average PM _{2.5}	0.3 µg/m ³	0.3 µg/m ³	
Health Risks and Hazards for Sensitive Receptors (Cumulative from All Sources within 1,000-Foot Zone of Influence) and Cumulative Thresholds for New Sources			
Excess Cancer Risk	100 per 1 million		
Chronic Hazard Index	10.0		
Annual Average PM _{2.5}	0.8 µg/m ³		
Accidental Release of Acutely Hazardous Air Pollutants			
Notes: ROG = reactive organic gases, NO _x = nitrogen oxides, CO= carbon monoxide PM ₁₀ = course particulate matter or particulates with an aerodynamic diameter of 10 µm or less PM _{2.5} = fine particulate matter or particulates with an aerodynamic diameter of 2.5 µm or less Source: BAAQMD 2017.			

Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less than significant impact. The project is located in City of Hercules, Contra Costa County, which is part of the San Francisco Bay Area Air Basin (Air Basin) and is under the jurisdiction of the BAAQMD. The region is currently designated nonattainment for state and federal ozone and particulate matter with aerodynamic diameter less than 2.5 microns (PM_{2.5}) standards, and the state particulate matter

with aerodynamic diameter less than 10 microns (PM₁₀) standards. The region is attainment or unclassified for all other ambient air quality standards for carbon monoxide, sulfur dioxide, nitrogen dioxide, lead, sulfates, visibility, and vinyl chloride. BAAQMD prepares air quality plans that include emissions inventories and develops emission reductions strategies to demonstrate how the region will attain and maintain the ambient air quality standards within given time frames. The BAAQMD recommends that projects consider three criteria to determine if a project would conflict with or obstruct implementation of an applicable air quality plan.

1. Does the project support the primary goals of the Air Quality Plan (AQP)?

The primary goals of the 2017 Bay Area Clean Air Plan (CAP), the current AQP to date, are to:

- Attain air quality standards;
- Reduce population exposure and protect public health in the Bay Area; and
- Reduce GHG emissions and protect the climate.

Any project that would not support these goals would not be considered consistent with the 2017 CAP. As discussed in Impacts AIR-2 and AIR-3, the project's construction- and operational-related emissions for both the self-storage facility and automotive service commercial developments would not exceed the BAAQMD's recommended regional significance thresholds on both the average daily or annual basis after implementation of mitigation measures. Therefore, the project would support the goals of the CAP.

The project site is currently designated General Commercial by the existing City of Hercules General Plan, and the existing zoning is General Commercial (CG). The project's land use category is a non-specialized designation that is intended to permit a wide variety of commercial uses. Therefore, the proposed project is consistent with the General Plan. The development of emission burdens used in the BAAQMD's CAP to demonstrate compliance with ambient air quality standards is based, in part, on land use patterns contained within local general plans. Therefore, it is reasonable to conclude that if a project is consistent with the applicable General Plan land use designation, and if the General Plan was adopted prior to the applicable CAP, then the growth of vehicle miles traveled (VMT) or population generated by said project would be consistent with the growth in VMT and population assumed within the CAP. Therefore, on this basis, the project supports the primary goals of the AQP.

2. Does the project include applicable control measures from the AQP?

Regardless of significance, all projects within BAAQMD's jurisdiction are required to implement the BAAQMD Basic Construction Mitigation Measures. As discussed in Impact AIR-2 below, the project would implement BAAQMD's Basic Construction Mitigation Measures, which are required for all projects regardless of their level of emissions with respect to significance thresholds. The Basic Construction Mitigation Measures would be consistent with the assumptions in the AQP. In addition, as discussed in Impact AIR-4, the project would implement Tier IV mitigation measures to help reduce health risks to less than significant level. Thus, the project would include applicable control measures from the AQP.

3. Does the project disrupt or hinder implementation of AQP control measures?

The project would comply with all required control measures and rules and regulations required by BAAQMD during construction and operation, including the Basic Construction Mitigation Measures. Furthermore, a review of the map containing areas more likely to have rock formations containing naturally occurring asbestos in California indicates that there are no areas likely containing naturally occurring asbestos on or near the project site. In addition, there is no existing building on-site, and no demolition phase would occur. Therefore, the project's construction would not generate significant asbestos and the impact related to asbestos exposure would be less than significant. As such, the project would not include any special features that would disrupt or hinder implementation of AQP control measures.

The following Basic Construction Mitigation Measures shall be included in the project design and implemented during construction:

- a. All active construction areas shall be watered at least two times per day.
- b. All exposed non-paved surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and access roads) shall be watered at least three times per day and/or non-toxic soil stabilizers shall be applied to exposed non-paved surfaces.
- c. All haul trucks transporting soil, sand, or other loose material off-site shall be covered and/or shall maintain at least two feet of freeboard. The proposed project will require the use of approximately 156 haul truck trips during the grading phase.
- d. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- e. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
- f. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- g. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of CCR). Clear signage regarding idling restrictions shall be provided for construction workers at all access points.
- h. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- i. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less than significant impact with mitigation incorporated. This section addresses the impacts of the project's regional criteria pollutant emissions. The nonattainment regional pollutants of concern are ozone, PM₁₀ and PM_{2.5}. Ozone is a regional pollutant formed by photochemical reactions in the atmosphere and is not directly emitted into the air. Ozone precursors, such as reactive organic gases (ROG) and oxides of nitrogen (NO_x), react in the atmosphere in the presence of sunlight to form ozone. Therefore, the BAAQMD has developed thresholds of significance for ROG and NO_x to regulate the regional generation of ozone. PM₁₀ and PM_{2.5} are of concern particularly during construction because of the potential to emit fugitive dust during earth-disturbing activities (construction fugitive dust), the emissions of particulate matter from construction equipment and haul trucks, and the potential to form secondary particulate matter in the atmosphere from volatile organic compounds (VOCs) and NO_x emissions.

As described above, projects that would generate construction or operational emissions that exceed BAAQMD's emission thresholds of significance would have the potential to add to the current regional emission burden and violate or contribute substantially to an existing or projected air quality violation. BAAQMD's thresholds of significance represent the allowable amount of emissions from a project for the region to achieve and maintain ambient air quality standards. Therefore, to evaluate the potential of the project's construction and operational emissions to violate or contribute to an air quality violation, this analysis evaluates the project's emissions with BAAQMD's regional thresholds of significance.

Construction Emissions

Construction-related emissions would result from on-site and off-site activities. On-site emissions would consist principally of exhaust emissions from the heavy-duty off-road construction equipment, on-site motor vehicle operation, and fugitive dust (mainly PM₁₀) from disturbed soil. Off-site emissions would be caused by motor vehicle exhaust associated with delivery and haul truck vehicles, construction worker traffic, and road dust. The BAAQMD does not have a quantitative threshold for fugitive dust but considers implementation of its Basic Construction Mitigation Measures sufficient to minimize fugitive particulate matter dust emissions. These measures are required for all projects regardless of their level of emissions with respect to significance thresholds.

The CalEEMod land use emission model Version 2016.3.2 was used to estimate the project's construction emissions. The CalEEMod model provides a consistent platform for estimating construction and operational emissions from a wide variety of land use projects and is the model recommended by the BAAQMD for estimating project emissions. Modeling for construction emissions used the default assumptions (e.g., construction equipment mix) contained in the CalEEMod model for the specific type of proposed land uses. The CalEEMod model contains numerous default parameters such as equipment activities, and construction equipment inventories that can be used in the absence of specific data.

The project would be developed into two phases: a self-storage facility development (Phase 1) and an automotive service commercial development (Phase 2). Both phases were assumed to start

construction in October 2018 and would last for 12 months. Construction activities would include site preparation, grading, building construction, paving and architectural coating. The duration of construction activity was provided by the client. The working hours were consistent with the City's permissible hour standard for noise impacts consistent with client's requirement.

Construction equipment for each construction activity utilized CalEEMod's default assumptions. The project would balance cut and fill during construction. In addition, the project proposed a possible rebuild of the sloped area adjacent to the proposed self-storage facility. The estimated quantity of the slope rebuild is 1,250 cubic yards. Haul trips are based on the amount of material that is imported or exported. CalEEMod assumes that a truck can handle 16 cubic yards of material. Therefore, the project would generate 156 haul truck trips during grading phase. Table 4 and Table 5 show the project's average daily and annual construction emission for the two project sections prior to mitigation measures. Table 5 also shows the combined total emissions from both developments.

Table 4: Average Daily and Annual Construction Emissions for Self-Storage Facility Development—No Mitigation

Construction Activity	Annual Emissions (tons/year)			
	ROG	NO _x	PM ₁₀ (exhaust)	PM _{2.5} (exhaust)
Site Preparation	0.14	0.15	0.08	0.07
Grading-2018	0.05	0.49	0.02	0.02
Grading-2019	0.12	1.28	0.06	0.06
Building Construction	0.31	2.75	0.14	0.13
Paving	0.04	0.38	0.02	0.02
Architectural Coating	0.72	0.09	0.01	0.01
Total Annual Construction Emissions	1.37	5.13	0.33	0.31
Average Daily Emissions (lbs/day)¹	6.93	25.98	1.69	1.57
Notes: ROG = reactive organic gases NO _x = oxides of nitrogen PM ₁₀ = particulate matter 10 microns in diameter PM _{2.5} = particulate matter 2.5 microns in diameter Totals may not appear to add exactly due to rounding ¹ The average daily construction emissions were estimated based on the total annual emissions divided by the number of working days (395 working days). CalEEMod version 2016.3.2. Source: CalEEMod output see Appendix A.				

Table 5: Average Daily and Annual Construction Emissions for Automotive Service Center and Combined Total Annual Construction Emissions—No Mitigation

Construction Activity	Annual Emissions (tons/year)			
	ROG	NO _x	PM ₁₀ (exhaust)	PM _{2.5} (exhaust)
Site Preparation	0.14	1.45	0.08	0.07
Grading-2018	0.05	0.50	0.02	0.02
Grading-2019	0.12	1.28	0.06	0.06
Building Construction	0.20	1.83	0.10	0.09
Paving	0.04	0.38	0.02	0.02
Architectural Coating	0.12	0.03	<0.01	<0.01
Total Annual Construction Emissions-Service Commercial	0.67	5.47	0.29	0.27
Average Daily Emissions (lbs/day)¹	4.03	32.83	1.73	1.60
Total Average Daily Construction Emissions (Storage Facility and Service Commercial Development) (lbs/day)	10.96	58.81	3.42	3.18
BAAQMD Average Daily Emissions Significance of Thresholds	54	54	82	54
Exceeds thresholds?	No	YES	No	No
Notes: ROG = reactive organic gases NO _x = oxides of nitrogen PM ₁₀ = particulate matter 10 microns in diameter PM _{2.5} = particulate matter 2.5 microns in diameter Totals may not appear to add exactly due to rounding. ¹ The average daily construction emissions were estimated based on the total annual emissions divided by the number of working days (333 working days). Source: BAAQMD CEQA Guideline, 2017; CalEEMod version 2016.3.2.				

As shown above, the total average daily construction emissions for both phases would exceed the BAAQMD's construction thresholds of significance for NO_x emissions. Therefore, the project's construction activities would be required to implement the use of equipment with EPA Tier III emission standards to reduce NO_x emissions to below the threshold, as shown in Table 6 and Table 7. Tier emission standards require significant emission reductions of PM, and NO_x for diesel-powered equipment.²

² Electronic Code of Federal Regulations. May 2018. CFR Title 40 Part 1039: Control of Emissions from New and In-use Nonroad Compression-Ignition Engines. Website: <https://www.ecfr.gov/cgi-bin/text-idx?SID=5bd49186c6de428e7d6446a56baab96c&mc=true&node=pt40.36.1039&rgn=div5>.

**Table 6: Average Daily and Annual Construction Emissions for Self-Storage Facility
Development-Tier III Mitigation**

Construction Activity	Annual Emissions (tons/year)			
	ROG	NO _x	PM ₁₀ (exhaust)	PM _{2.5} (exhaust)
Site Preparation	0.03	0.57	0.03	0.03
Grading	0.01	0.24	0.01	0.01
Grading-019	0.04	0.67	0.03	0.03
Building Construction	0.13	2.02	0.10	0.10
Paving	0.02	0.27	0.02	0.02
Architectural Coating	0.71	0.06	0.00	0.00
Total Annual Construction Emissions	0.93	3.84	0.20	0.19
Average Daily Emissions (lbs/day)¹	4.70	19.42	0.99	0.99
BAAQMD Average Daily Emissions Significance of Thresholds	54	54	82	54
Exceeds thresholds?	No	No	No	No
Notes: ROG = reactive organic gases; NO _x = oxides of nitrogen; PM ₁₀ = particulate matter 10 microns in diameter PM _{2.5} = particulate matter 2.5 microns in diameter Totals may not appear to add exactly due to rounding. ¹ The average daily construction emissions were estimated based on the total annual emissions divided by the number of working days (395 working days for each phase). Source: BAAQMD CEQA Guideline, 2017. CalEEMod 2016.3.2 version.				

**Table 7: Average Daily and Annual Construction Emissions for Automotive Service Center
and Combined Total Annual Construction Emissions—Tier III Mitigation**

Construction Activity	Annual Emissions (tons/year)			
	ROG	NO _x	PM ₁₀ (exhaust)	PM _{2.5} (exhaust)
Site Preparation	0.03	0.57	0.03	0.03
Grading	0.01	0.24	0.01	0.01
Grading-2019	0.04	0.68	0.03	0.03
Building Construction	0.07	1.31	0.07	0.07
Paving	0.02	0.27	0.02	0.02
Architectural Coating	0.12	0.02	0.00	0.00
Total Annual Construction Emissions	0.29	3.10	0.16	0.16
Average Daily Emissions (lbs/day)¹	1.74	18.62	0.97	0.97

Table 7 (cont.): Average Daily and Annual Construction Emissions for Automotive Service Center and Combined Total Annual Construction Emissions—Tier III Mitigation

Construction Activity	Annual Emissions (tons/year)			
	ROG	NO _x	PM ₁₀ (exhaust)	PM _{2.5} (exhaust)
Total Average Daily Construction Emissions (Storage Facility and Service Commercial Development)	6.44	38.04	1.96	1.96
BAAQMD Average Daily Emissions Significance of Thresholds	54	54	82	54
Exceeds thresholds?	No	No	No	No
Notes: ROG = reactive organic gases; NO _x = oxides of nitrogen PM ₁₀ = particulate matter 10 microns in diameter PM _{2.5} = particulate matter 2.5 microns in diameter Totals may not appear to add exactly due to rounding. ¹ The average daily construction emissions were estimated based on the total annual emissions divided by the number of working days (333 working days for each phase). Source: BAAQMD CEQA Guideline, 2017. CalEEMod 2016.3.2 version.				

As shown above in Table 6 and Table 7, with the use of EPA Tier III equipment, the project's construction emissions would be reduced to below the BAAQMD's thresholds of significance. As such, construction emission impacts would be less than significant.

Operational Emissions

During operations, the pollutants of concern include ROG, NO_x, PM₁₀, and PM_{2.5}. Operational emissions are generated by area, energy, and mobile sources. Area sources would include activities such as landscape maintenance and occasional architectural coatings. Energy sources would include electricity and natural gas combustion for space and water heating requirements of the project. Mobile sources would include vehicle trips associated with passenger cars and delivery trucks. The BAAQMD operational emission thresholds of significance were used to assess the significance of the project's operational emissions. Since both self-storage facility and automotive service commercial developments were conservatively assumed to commence in 2020, the total operational emissions in 2020 were compared with the BAAQMD's thresholds of significance. Table 8 and Table 9 show the annual operational-related emissions of self-storage facility development (2020) and service commercial (2020). Also shown on Table 9 are the total operational emissions of the self-storage facility development and the service commercial development.

Table 8: Self-Storage Facility Development Annual and Average Daily Operational Emissions (2020)—No Mitigation

Category	Emission (tons/yr)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Area	0.57	<0.01	<0.01	<0.01
Energy	<0.01	0.01	<0.01	<0.01
Mobile	0.10	0.48	<0.01	<0.01
Total	0.67	0.49	0.01	<0.01
BAAQMD Maximum Annual Emission Threshold	10	10	15	10
Exceeding thresholds?	No	No	No	No
Average Daily Emissions (lbs/day)	3.68	2.70	0.03	0.03
BAAQMD Average Daily Emission Thresholds (lbs/day)	54	54	82	54
Exceeding thresholds?	No	No	No	No
Notes: ROG = reactive organic gases; NO _x = oxides of nitrogen PM ₁₀ = particulate matter 10 microns in diameter PM _{2.5} = particulate matter 2.5 microns in diameter Source: CalEEMod version 2016.3.2.				

Table 9: Automotive Service Center and Combined Annual and Average Daily Operational Emissions (2020)—No Mitigation

Category	Emission (tons/yr)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Area	0.09	<0.01	<0.01	<0.01
Energy	<0.01	0.02	<0.01	<0.01
Mobile	0.32	1.20	0.01	0.01
Total operation emissions—Service Commercial	0.41	1.23	0.01	0.01
Total operation emissions—Storage Facility	0.67	0.49	0.01	<0.01
Total Operation Emissions-2020	1.08	1.72	0.01	0.01
BAAQMD Maximum Annual Emission Threshold	10	10	15	10
Exceeding thresholds?	No	No	No	No
Average Daily Emissions (lbs/day)	5.93	9.41	0.08	0.07

Table 9 (cont.): Automotive Service Center and Combined Annual and Average Daily Operational Emissions (2020)—No Mitigation

Category	Emission (tons/yr)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
BAAQMD Average Daily Emission Thresholds (lbs/day)	54	54	82	54
Exceeding thresholds?	No	No	No	No
Notes: ROG = reactive organic gases; NO _x = oxides of nitrogen PM ₁₀ = particulate matter 10 microns in diameter PM _{2.5} = particulate matter 2.5 microns in diameter Source: CalEEMod 2016.3.2 version.				

As shown above, the project's total annual and average daily operational emissions would not exceed the BAAQMD's thresholds of significance. Therefore, the project's operational-related activities would not result in significant impacts.

- c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?**

Less than significant impact. In developing thresholds of significance for air pollutants, BAAQMD considers the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the recommended significance thresholds, its emissions would be deemed cumulatively considerable. As discussed in Impact AIR-2, the proposed project's construction and operational-related emissions would not exceed the BAAQMD's regional thresholds of significance for construction and operation, and the project would not result in considerably cumulative impacts to the region's existing air quality conditions.

- d) Expose sensitive receptors to substantial pollutant concentrations?**

Less than significant impact with mitigation incorporated. The BAAQMD defines sensitive receptors to include residential dwellings, including apartments, houses, and condominiums; schools, colleges, and universities; daycare centers and hospitals; and senior-care facilities. To result in a less than significant impact, the following four criteria were applied to determine the significance of project emissions to sensitive receptors:

- **Criterion 1:** The construction of the project would not result in an exceedance of the health risk significance thresholds.
- **Criterion 2:** The operation of the project would not result in an exceedance of the health risk significance thresholds.

- **Criterion 3:** The cumulative impact would not result in an exceedance of the cumulative health risk significance thresholds.
- **Criterion 4:** A CO hot spot assessment must demonstrate that the project would not result in the development of a CO hot spot that would cause an exceedance of the CO ambient air quality standards.

Criterion 1: Project Construction Toxic Air Pollutants

Diesel particulate matter (DPM) has been identified by the California Air Resources Board as a carcinogenic substance. Major sources of DPM include off-road construction equipment and heavy-duty delivery truck and worker activities. For purposes of this analysis, DPM is represented as exhaust emissions of PM_{2.5}.

Estimation of Construction DPM Emissions

Construction DPM emissions (as PM_{2.5} exhaust) were estimated using the CalEEMod model as discussed above. Construction was assumed to occur simultaneously for both phases and last for 12 months. The construction DPM emissions were assumed to be distributed over the project area affected by each construction phase with a working schedule of a maximum of 15 hours during weekdays, and 10 hours during weekends in accordance with the City's permissible hours of construction. This approach provides the most conservative estimate of construction emissions. Construction exhaust emissions of DPM were estimated using the CalEEMod model (Version 2016.3.2), and the results are summarized in Table 10.

Table 10: Project DPM Construction Emissions—No Mitigation

Year	Annual Average On-site DPM (grams/m ² -sec)	Annual Average Off-site DPM from West John Muir Pkwy along Willow Ave to Project (grams/sec)
Self-storage Facility Annual Construction Emissions (No Mitigation)		
10/2018 to 12/2018	7.92E-07	4.24E-07
01/2019 to 9/2019	5.46E-07	1.78E-05
Annual Total	1.34E-06	1.79E-05
Self-storage Facility Annual Construction Emissions (Tier III Mitigation)		
10/2018 to 12/2018	3.42E-07	4.24E-07
01/2019 to 9/2019	3.86E-07	1.78E-05
Annual Total	7.28E-07	1.79E-05
Self-storage Facility Annual Construction Emissions (Tier IV Mitigation)		
10/2018 to 12/2018	2.22E-08	4.24E-07
01/2019 to 9/2019	1.95E-08	1.78E-05
Annual Total	4.17E-08	1.79E-05
Service Commercial Annual Construction Emissions (No Mitigation)		
10/2018 to 12/2018	1.16E-06	5.95E-07

Table 10 (cont.): Project DPM Construction Emissions—No Mitigation

Year	Annual Average On-site DPM (grams/m ² -sec)	Annual Average Off-site DPM from West John Muir Pkwy along Willow Ave to Project (grams/sec)
01/2019 to 9/2019	7.57E-07	9.61E-06
Annual Total	1.92E-06	1.02E-06
Service Commercial Annual Construction Emissions (Tier III Mitigation)		
10/2018 to 12/2018	4.99E-07	5.95E-07
01/2019 to 9/2019	5.28E-07	9.61E-06
Annual Total	1.03E-06	1.02E-06
Service Commercial Annual Construction Emissions (Tier IV Mitigation)		
10/2018 to 12/2018	3.24E-08	5.95E-07
01/2019 to 9/2019	2.74E-08	9.61E-06
Annual Total	5.98E-08	1.02E-06
Source: CalEEMod and FirstCarbon Solutions; see Appendix A.		

Estimation of Cancer Risks

The BAAQMD has developed a set of guidelines for estimating cancer risks that provide adjustment factors that emphasize the increased sensitivities and susceptibility of young children to exposures to TACs (BAAQMD, 2016). These adjustment factors include age-sensitivity weighting factors, age-specific daily breathing rates, and age-specific time-at-home factors. The recommended method for the estimation of cancer risk is shown in the equations below with the cancer risk adjustment factors provided in Table 11 for several types of sensitive/residential receptors (infant, child, and adult).

$$\text{Cancer Risk} = C_{\text{DPM}} \times \text{Inhalation Exposure Factor} \quad (\text{EQ-1})$$

Where:

Cancer Risk = Total individual excess cancer risk defined as the cancer risk a hypothetical individual faces if exposed to carcinogenic emissions from a particular source for specified exposure durations; this risk is defined as an excess risk because it is above and beyond the background cancer risk to the population; cancer risk is expressed in terms of risk per million exposed individuals.

C_{DPM} = Period average DPM air concentration calculated from the air dispersion model in $\mu\text{g}/\text{m}^3$

Inhalation is the most important exposure pathway to impact human health from DPM and the inhalation exposure factor is defined as follows:

$$\text{Inhalation Exposure Factor} = \text{CPF} \times \text{EF} \times \text{ED} \times \text{DBR} \times \text{AAF/AT} \quad (\text{EQ-2})$$

Where:

CPF = Inhalation cancer potency factor for the TAC: $1.1 \text{ (mg/kg-day)}^{-1}$ for DPM
 EF = Exposure frequency (days/year)
 ED = Exposure duration (years of construction)
 AAF = set of age-specific adjustment factors that include age sensitivity factors (ASF), daily breathing rates (DBR), and time at home factors (TAH)—see Table 11:
 AT = Averaging time period over which exposure is averaged (days)

The OEHHA-recommended values for the various cancer risk parameters shown in EQ 2, above, are provided in Table 11.

Table 11: Exposure Assumptions for Cancer Risk

Receptor Type	Exposure Frequency		Construction Exposure Duration (years) ⁽²⁾	Age Sensitivity Factors	Time at Home Factor (%)	Daily Breathing Rate ⁽¹⁾ (l/kg-day)
	Hours/day	Days/year				
Sensitive/Residential—Infant						
3 rd Trimester	24	350	0.25	10	85	361
0–2 years	24	350	1	10	85	1,090
Sensitive Receptor—Child						
3–16 years	24	350	1	3	72	572
Sensitive Receptor—Adult						
> 16 to 30 years	24	350	1	1	73	261
Notes:						
⁽¹⁾ The daily breathing rates recommended by the BAAQMD for sensitive/residential receptors assume the 95 th percentile breathing rates for all individuals less than 2 years of age and 80 th percentile breathing rates for all older individuals.						
⁽²⁾ The exposure duration is 1 year corresponding to the duration of construction						
(l/kg-day) = liters per kilogram body weight per day						
Source: BAAQMD 2016. Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines. Website: http://www.baaqmd.gov/~media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en .						

Estimation of Non-Cancer Chronic Hazards

An evaluation of the potential non-cancer effects of chronic chemical exposures was also conducted. Adverse health effects are evaluated by comparing the annual receptor concentration of each chemical compound with the appropriate reference exposure limit (REL). Available RELs promulgated by the California Office of Environmental Health Hazards Assessment (OEHHA) were considered in the assessment.

Risk characterization for non-cancer health hazards from TACs is expressed as a hazard index (HI). The HI is a ratio of the predicted concentration of the project's emissions to a concentration considered acceptable to public health professionals, termed the REL.

To quantify non-carcinogenic impacts, the hazard index approach was used.

$$HI = C_{\text{ann}}/\text{REL} \quad (\text{EQ-3})$$

Where:

HI = chronic hazard index

C_{ann} = annual average concentration of TAC as derived from the air dispersion model ($\mu\text{g}/\text{m}^3$)

REL = reference exposure level above which a significant impact is assumed to occur ($\mu\text{g}/\text{m}^3$)

The hazard index assumes that chronic exposures to TACs adversely affect a specific organ or organ system (toxicological endpoint) of the body. For each discrete chemical exposure, target organs presented in regulatory guidance were used. To calculate the hazard index, each chemical concentration or dose is divided by the appropriate toxicity reference exposure level (REL). For compounds affecting the same toxicological endpoint, this ratio is summed. Where the total equals or exceeds 1, a health hazard is presumed to exist. For purposes of this assessment, the TAC of concern is DPM, for which the OEHHHA has defined a REL for DPM of $5 \mu\text{g}/\text{m}^3$. The principal toxicological endpoint assumed in this assessment was through inhalation.

The estimated health and hazard impacts at the maximum impacted sensitive receptor (MIR) from the project's construction emissions are provided in Table 12 and Table 13. The total combined cancer risk and hazards index are provided in Table 13.

Table 12: Estimated Health Risks and Hazards: Self-Storage Facility—Unmitigated

Health Impact Metric	Cancer Risk (risk per million)	Chronic Non-Cancer Hazard Index ⁽²⁾	Annual PM _{2.5} Concentration ($\mu\text{g}/\text{m}^3$)
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Infant ⁽¹⁾	23.7	0.04	0.2
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Child ⁽¹⁾	5.8	0.04	0.2
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Adult ⁽¹⁾	0.9	0.04	0.2
BAAQMD Significance Threshold	10.0	1.0	0.3
Exceeds Individual Source Threshold?	YES (infants)	No	No
Notes: ¹ Maximum impacted sensitive receptor is a residence at Willow Glen Apartment located approximately 405 feet north of the project at the intersection of John Muir Pkwy and Willow Ave (adjacent to John Muir Pkwy). ² Chronic non-cancer hazard index was estimated by dividing the annual DPM concentration (as PM _{2.5} exhaust) by the REL of $5 \mu\text{g}/\text{m}^3$. Source: CalEEMod and FirstCarbon Solutions; see Appendix A.			

Table 13: Estimated Health Risks and Hazards: Automotive Service Center—Unmitigated

Health Impact Metric	Cancer Risk (risk per million)	Chronic Non-Cancer Hazard Index ⁽²⁾	Annual PM _{2.5} Concentration (µg/m ³)
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Infant ⁽¹⁾	48.6	0.09	0.4
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Child ⁽¹⁾	13.4	0.09	0.4
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Adult ⁽¹⁾	2.0	0.09	0.4
BAAQMD Significance Threshold	10.0	1.0	0.3
Exceeds Individual Source Threshold?	YES (infants)	No	YES
<p>Notes:</p> <p>¹ Maximum impacted sensitive receptor is Valley Preschool & Daycare at 1477 Willow Ave which is 270 feet northwest of the project site.</p> <p>² Chronic non-cancer hazard index was estimated by dividing the annual DPM concentration (as PM_{2.5} exhaust) by the REL of 5 µg/m³.</p> <p>Source: CalEEMod and FirstCarbon Solutions; see Appendix A.</p>			

Table 14: Estimated Health Risks and Hazards: Combined—Unmitigated

Health Impact Metric	Cancer Risk (risk per million)	Chronic Non-Cancer Hazard Index ⁽²⁾	Annual PM _{2.5} Concentration (µg/m ³)
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Infant ⁽¹⁾	64.9	0.11	0.6
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Child ⁽¹⁾	17	0.11	0.6
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Adult ⁽³⁾	2.6	0.11	0.6
BAAQMD Significance Threshold	10.0	1.0	0.3
Exceeds Individual Source Threshold?	YES (infants and children)	No	YES
<p>Notes:</p> <p>¹ Maximum impacted sensitive receptor is Valley Preschool & Daycare at 1477 Willow Ave which is 270 feet northwest of the project site.</p> <p>² Chronic non-cancer hazard index was estimated by dividing the annual DPM concentration (as PM_{2.5} exhaust) by the REL of 5 µg/m³.</p> <p>³ Maximum impacted sensitive receptor is a residence at Willow Glen Apartment located approximately 405 feet north of the project at the intersection of John Muir Pkwy and Willow Ave (adjacent to John Muir Pkwy).</p> <p>Source: CalEEMod and FirstCarbon Solutions; see Appendix A.</p>			

As shown above, the construction emissions from the project would exceed the BAAQMD's recommended thresholds of significance. Therefore, the project's construction would result in

significant health impacts and mitigation would be required. Table 15 and Table 16 show the health risks and hazard index with implementation of off-road construction equipment meeting the EPA Tier III emission standard.

Table 15: Estimated Health Risks and Hazards: Self-Storage Facility—Tier III Mitigation

Health Impact Metric	Cancer Risk (risk per million)	Chronic Non-Cancer Hazard Index ⁽²⁾	Annual PM _{2.5} Concentration (µg/m ³)
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Infant ⁽¹⁾	14.6	0.02	0.1
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Child ⁽¹⁾	3.1	0.02	0.1
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Adult ⁽¹⁾	0.5	0.02	0.1
BAAQMD Significance Threshold	10.0	1.0	0.3
Exceeds Individual Source Threshold?	YES (infants)	No	No
Notes: ¹ Maximum impacted sensitive receptor is a residence at Willow Glen Apartment located approximately 405 feet north of the project at the intersection of John Muir Pkwy and Willow Ave (adjacent to John Muir Pkwy). ² Chronic non-cancer hazard index was estimated by dividing the annual DPM concentration (as PM _{2.5} exhaust) by the REL of 5 µg/m ³ . Source: CalEEMod and FirstCarbon Solutions; see Appendix A.			

Table 16: Estimated Health Risks and Hazards: Automotive Service Center—Tier III Mitigation

Health Impact Metric	Cancer Risk (risk per million)	Chronic Non-Cancer Hazard Index ⁽²⁾	Annual PM _{2.5} Concentration (µg/m ³)
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Infant ⁽¹⁾	29.1	0.04	0.2
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Child ⁽¹⁾	7.2	0.04	0.2
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Adult ⁽³⁾	1.1	0.04	0.2
BAAQMD Significance Threshold	10.0	1.0	0.3
Exceeds Individual Source Threshold?	YES (infants)	No	No
Notes: ¹ Maximum impacted sensitive receptor is Valley Preschool & Daycare at 1477 Willow Ave which is 270 feet northwest of the project site. ² Chronic non-cancer hazard index was estimated by dividing the annual DPM concentration (as PM _{2.5} exhaust) by the REL of 5 µg/m ³ . ³ Maximum impacted sensitive receptor is a residence at Willow Glen Apartment located approximately 405 feet north of the project at the intersection of John Muir Pkwy and Willow Ave (adjacent to John Muir Pkwy). Source: CalEEMod and FirstCarbon Solutions; see Appendix A.			

However, as shown in the Table 15 and Table 16, modeling results show that even with the use of construction equipment meeting the EPA Tier III emission standard, construction emissions would still exceed the BAAQMD's threshold of significance for infants. Therefore, the use of off-road construction equipment with engines meeting the EPA Tier IV emission standard would be required in order to reduce this impact to less than significant. Table 17, Table 18, and Table 19 show the estimated health risks and hazard index with implementation of off-road construction equipment with engines meeting the EPA Tier IV emission standard.

Table 17: Estimated Health Risks and Hazards: Self-Storage Facility—Tier IV Mitigation

Health Impact Metric	Cancer Risk (risk per million)	Chronic Non-Cancer Hazard Index ⁽²⁾	Annual PM _{2.5} Concentration (µg/m ³)
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Infant ⁽¹⁾	0.8	<0.01	0.01
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Child ⁽¹⁾	0.2	<0.01	0.01
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Adult ⁽¹⁾	<0.1	<0.01	0.01
BAAQMD Significance Threshold	10.0	1.0	0.3
Exceeds Individual Source Threshold?	No	No	No
Notes: ¹ Maximum impacted sensitive receptor is a residence at Willow Glen Apartment located approximately 405 feet north of the project at the intersection of John Muir Pkwy and Willow Ave (adjacent to John Muir Pkwy). ² Chronic non-cancer hazard index was estimated by dividing the annual DPM concentration (as PM _{2.5} exhaust) by the REL of 5 µg/m ³ . Source: CalEEMod and FirstCarbon Solutions; see Appendix A.			

Table 18: Estimated Health Risks and Hazards: Automotive Service Center—Tier IV Mitigation

Health Impact Metric	Cancer Risk (risk per million)	Chronic Non-Cancer Hazard Index ⁽²⁾	Annual PM _{2.5} Concentration (µg/m ³)
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Infant ⁽¹⁾	1.6	<0.01	0.01
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Child ⁽¹⁾	0.4	<0.01	0.01
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Adult ⁽³⁾	0.1	<0.01	0.01
BAAQMD Significance Threshold	10.0	1.0	0.3
Exceeds Individual Source Threshold?	No	No	No

Table 18 (cont.): Estimated Health Risks and Hazards: Automotive Service Center—Tier IV Mitigation

Health Impact Metric	Cancer Risk (risk per million)	Chronic Non-Cancer Hazard Index ⁽²⁾	Annual PM _{2.5} Concentration (µg/m ³)
<p>Notes:</p> <p>¹ Maximum impacted sensitive receptor is Valley Preschool & Daycare at 1477 Willow Ave which is 270 feet northwest of the project site.</p> <p>² Chronic non-cancer hazard index was estimated by dividing the annual DPM concentration (as PM_{2.5} exhaust) by the REL of 5 µg/m³.</p> <p>³ Maximum impacted sensitive receptor is a residence at Willow Glen Apartment located approximately 405 feet north of the project at the intersection of John Muir Pkwy and Willow Ave (adjacent to John Muir Pkwy).</p> <p>Source: CalEEMod and FirstCarbon Solutions; see Appendix A.</p>			

Table 19: Estimated Health Risks and Hazards: Combined—Tier IV Mitigation

Health Impact Metric	Cancer Risk (risk per million)	Chronic Non-Cancer Hazard Index ⁽²⁾	Annual PM _{2.5} Concentration (µg/m ³)
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Infant ⁽¹⁾	2.2	<0.01	0.02
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Child ⁽¹⁾	0.5	<0.01	0.02
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Adult ⁽³⁾	0.1	<0.01	0.02
BAAQMD Significance Threshold	10.0	1.0	0.3
Exceeds Individual Source Threshold?	No	No	No
<p>Notes:</p> <p>¹ Maximum impacted sensitive receptor is Valley Preschool & Daycare at 1477 Willow Ave which is 270 feet northwest of the project site.</p> <p>² Chronic non-cancer hazard index was estimated by dividing the annual DPM concentration (as PM_{2.5} exhaust) by the REL of 5 µg/m³.</p> <p>³ Maximum impacted sensitive receptor is a residence at Willow Glen Apartment located approximately 405 feet north of the project at the intersection of John Muir Pkwy and Willow Ave (adjacent to John Muir Pkwy).</p> <p>Source: CalEEMod and FirstCarbon Solutions; see Appendix A.</p>			

Therefore, with implementation of Tier IV construction equipment, construction-related health impacts would be mitigated to less than significant.

As EPA Tier IV emission standard equipment is in high demand, MM AQ-1 requires that construction equipment greater than 50 horsepower must be equipped with engines meeting EPA Tier IV emission standards, and if they are not available, prior to issuance of grading permits, the project applicant shall submit revised air quality emissions and health risk assessment modeling results demonstrating that the project-specific detailed construction equipment list to be used and the

construction schedule to be followed by the general contractor would result in emissions below the BAAQMD's air quality and health risk thresholds.

Criterion 2: Project Operation Toxic Air Pollutants

The project including self-storage facility and automotive commercial service would generate 1,709 new trips per day, as provided by the Transportation Impact Analysis (TIA) prepared by TJKM Transportation Consultants (see Appendix G of this IS/MND). Trips would be generated by the self-storage facility and automotive-related uses. Because most of these trips would be generated by cars that have gasoline engines, the project would not generate significant amount of DPM emissions during operation. Therefore, the project would not result in significant health impacts on sensitive receptors during operation. Impacts would be less than significant.

Criterion 3: Cumulative HRA

The BAAQMD recommends assessing the potential cumulative impacts from sources of TACs within 1,000 feet of a project. Since the project is for self-storage facility and automotive commercial service, the project itself would not be considered as a sensitive receptor during operation. Therefore, the cumulative HRA examined the cumulative impacts of the project's construction emissions and sources of TAC emissions within 1,000 feet of the project. As noted from

Table 14 above, the MIR was found at the Valley Preschool & Daycare, located approximately 270 feet north of the project site. The cumulative health impacts were estimated at this location.

The BAAQMD provides three tools for use in screening potential sources of TACs. These tools are:

- **Surface Street Screening Tables.** BAAQMD pre-calculated potential cancer risks and PM_{2.5} concentration increases for each county within their jurisdiction for roadways that meet BAAQMD's "major roadway" criteria of 10,000 vehicles or 1,000 trucks per day. Risks are assessed by roadway volume, roadway direction, and distance to sensitive receptors. There is no roadway that generates more than 10,000 trips per day or more than 1,000 trucks per day located within 1,000 feet of the project boundary.
- **Freeway Screening Analysis Tool.** BAAQMD prepared a Google Earth file that contains pre-estimated cancer risk, hazard index, and PM_{2.5} concentration increases for highways within the Bay Area. Risks are provided by roadway link and are estimated based on elevation and distance to the sensitive receptor. John Muir Pkwy is located 260 feet north of the Valley Preschool & Daycare and 530 feet north of the project site.
- **Stationary Source Risk and Hazard Screening Tool.** BAAQMD prepared a Google Earth file that contains the locations of all stationary sources within the Bay Area that have BAAQMD permits. For each emissions source, BAAQMD provides conservative cancer risk and PM_{2.5} concentration increase values. There is no stationary source located within 1,000 feet of the site boundary.

Table 20 summarizes the cumulative health impacts from the project construction activities and emissions from existing sources of TAC located within 1,000 feet of the project.

Table 20: Cumulative Health Impacts at the MIR during Construction—Tier IV Mitigation

Source	Source Type	Distance from MIR (feet) ⁽¹⁾	Cancer Risk (per million)	Chronic Non-Cancer HI	PM _{2.5} Concentration (µg/m ³)
Project					
Self-storage facility & Automotive service commercial	DSL Vehicles	270	2.2 (infants)	<0.01	0.02
Highway ⁽²⁾					
John Muir Pkwy	Highway	142 ⁽³⁾	13.1	0.01	0.09
Cumulative Health Risks from Project Construction and Existing TAC Sources					
Cumulative Total with project Construction ⁽¹⁾			15.3	0.01	0.11
BAAQMD Cumulative Thresholds of Significance			100	10	0.8
Threshold Exceedance?			No	No	No
Notes: ⁽¹⁾ MIR is Valley Preschool & Daycare located approximately 270 feet north of the project site. ⁽²⁾ Cancer risks reflect the 2010 BAAQMD cancer risk guidance. ⁽³⁾ The freeway screening analysis tool provides cancer risks by exposure distance. The closer to the freeway, the higher cancer risks sensitive receptors would be exposed. The cancer risks information were obtained at the distance of 100 feet south from John Muir Parkway which has higher cancer risks than 142 feet south of parkway. MIR = maximum impacted sensitive receptor Source: FCS, 2017; see Appendix A.					

As shown above, the cumulative health impacts to the project's MIR from existing TAC emission sources located within 1,000 feet of the project and the project's construction emissions would not exceed the BAAQMD's cumulative health significance thresholds. As such, impacts would be less than significant.

Criterion 4: Carbon Monoxide

The CO emissions from traffic generated by the project are a concern at the local level. Congested intersections can result in high, localized concentrations of CO.

The BAAQMD recommends a screening analysis to determine if a project has the potential to contribute to a CO hotspot. The screening criteria identify when site-specific CO dispersion modeling is necessary. The project would result in a less than significant impact to air quality for local CO if the following screening criteria are met:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans; or
- The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; or
- 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, natural or urban street canyon, below-grade roadway).

As noted above, TJKM has prepared a TIA. As shown in the TIA, no intersections impacted by the project would experience intersection traffic volumes of more than 44,000 vehicles per hour. According to the TIA, the project would be expected to generate an average of 1,709 trips on a daily basis, including 138 during the AM peak hour and 190 during PM peak hour. The project would not exceed the CO screening criteria. Therefore, based on the above criteria, project-related CO emissions would be less than significant.

e) Create objectionable odors affecting a substantial number of people?

Less than significant impact. Odors can cause a variety of responses. The impact of an odor often results from interacting factors such as frequency (how often), intensity (strength), duration (time), offensiveness (unpleasantness), location, and sensory perception.

Two circumstances have the potential to cause odor impacts:

- 1) A source of odors is proposed to be located near existing or planned receptors; or
- 2) A receptor land use is proposed near an existing or planned source of odor.

The BAAQMD's CEQA Air Quality Guidelines provides suggested screening distances for a variety of odor-generating land uses and operations. Projects that would site a new receptor farther than the applicable screening distances from an existing odor source would likely not have a significant impact.

Diesel exhaust and VOCs would be emitted during construction of the project resulting from heavy-duty construction equipment and asphalt paving activities, both of which could be objectionable odors to some populations. However, emissions would disperse rapidly from the site and construction activities would be relatively low in intensity and short-term. Therefore, it is not anticipated that construction-related activities would create objectionable odors affecting a substantial number of people. As such, construction odor impacts would be less than significant.

Land uses typically associated with odors include wastewater treatment facilities, waste-disposal facilities, or agricultural operations. The project does not involve land uses typically associated with the emission of objectionable odors. During operation of the project, odors could also be emitted from vehicles travelling to and from the site; however, these occurrences would not produce a significant amount of odors. Therefore, operational impacts would be less than significant.

Mitigation Measures

MM AQ-1 In order to ensure all the impacts are less than significant, the project applicant shall:

- a) Ensure all off-road construction equipment greater than 50 horsepower must be equipped with engines meeting the EPA Tier IV emission standards; or
- b) Prior to issuance of grading permits, the project applicant shall submit a revised air quality emissions and health risk assessment modeling results demonstrating that the project-specific detailed construction equipment list to be used and the construction schedule to be followed by the general contractor would result in emissions below the BAAQMD's air quality and health risk thresholds.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
4. Biological Resources <i>Would the project:</i>				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Evaluation

This section evaluates potential effects on biological resources that may result from project implementation. Descriptions and analysis in this section are based upon search results of the California Natural Diversity Database (CNDDB) maintained by the California Department of Fish and Wildlife (CDFW), the California Native Plant Society (CNPS) inventory of rare and endangered plants, and the U.S. Fish and Wildlife Service (USFWS) database. Appendix B contains the biological resource data that were collected for this analysis.

Would the project:

- a) **Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?**

Less than significant impact. Special-status plant and wildlife species with the potential to be present on the project site were determined from a U.S. Geological Survey (USGS) quadrangle search of the California Natural Diversity Database (CNDDDB), a CNPS search (CNPS 2017), and a USFWS quadrangle search for the Mare Island 7.5-minute quadrangle. Special-status species refers to all species.

- Formally listed as threatened and/or endangered under the Federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA);
- Listed as California Species of Special Concern;
- Designated as Fully Protected by CDFW;
- Given a status of 1A, 1B, or 2 by CNPS; or
- Designated as special-status by city, county, or other regional planning documents.

Federal and state listed threatened and/or endangered species are legally protected under FESA/CESA. The designated special-status species listed by CNPS have no direct legal protection, but they require an analysis of the significance of potential impacts under CEQA guidelines.

The approximately 7.1-acre project site is located in the City of Hercules within the Refugio Creek watershed. San Pablo Bay and its associated tributaries are the major hydrological features of the City; Refugio Creek is the most prominent watercourse network that traverses the City. Currently, the entire project site is undeveloped. The project site consists of gently sloping hilly terrain covered primarily by non-native grassland. The western portion of the site consists of low-lying depressions and possible natural drainages with evidence of possible wetland communities and scattered patches of coyote brush scrub and willow scrub habitat.

A plant's potential to occur within the project site is based on the presence of suitable habitats, soil types, and occurrences recorded or known in the project region by the USFWS, the CNPS inventory, the CNDDDB, and desktop observations. Eight special-status plant species were evaluated for their potential to occur within the project site (see Appendix B). From the absence of suitable habitat and/or location of known populations, it was determined that all eight special-status plant species are considered unlikely to occur on-site. Because of the highly disturbed nature of the project site, due to the use of off-road all-terrain vehicles on the site in 2000 and surficial dumping in 2004 and overall lack of suitable habitat, no special-status plant species have the potential to occur within the project site; therefore, no special-status plant species would be impacted by the project.

Based upon the types of habitat that each special-status wildlife species occupies, 14 wildlife species were evaluated for their potential to occur within the project site (see Appendix B). Because of the highly disturbed nature of the project site, suitable habitat does not occur within the project site to

support these species. No special-status wildlife species have the potential to occur within the project site; therefore, no special-status wildlife species would be impacted by the project.

- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?**

Less than significant impact with mitigation incorporated. The project site was evaluated for the presence of potential wetland features under both state and federal jurisdiction. A search of the USFWS National Wetlands Inventory and recent aerial photographs revealed a potential freshwater emergent wetland along the southern boundary of the project site, adjacent to the train tracks (see Exhibit 11). This is a potentially jurisdictional feature.

As currently proposed, the project would avoid the potentially jurisdictional feature. Because of this, the project would not be required to obtain a Section 404 permit and Section 401 certification for any activity that occurs in such wetlands. Project construction activities such as grading and equipment movement could inadvertently affect this wetland. Mitigation Measure (MM) BIO-1 would require temporary fencing around the wetland during project construction to ensure that no construction equipment or activities encroach upon the wetland. Implementation of this mitigation measure would reduce potential impacts to federally protected wetlands to a less than significant level.

Additionally, according to the USFWS National Wetlands Inventory, a riverine features exists approximately 200 feet west of the project site. However, the area between the riverine feature and the project site has been developed and fragmented because of the construction of Palm Avenue. As noted above, the project site contains primarily disturbed non-native grassland and lacks sensitive natural communities as identified in local or regional plans, policies, and regulations by CDFW or USFWS.

As such, impacts would be less than significant with mitigation incorporated.

- c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?**

Less than significant impact with mitigation incorporated. As described above in Impact 4b), the project site was evaluated for the presence of potential wetland features under both state and federal jurisdiction. A search of the USFWS National Wetlands Inventory and recent aerial photographs revealed a potential freshwater emergent wetland along the southern boundary of the project site, adjacent to the train tracks. This is a potentially jurisdictional feature.

While the proposed project would avoid the potentially jurisdictional feature, project construction activities could affect the wetland. As such, MM BIO-1 would require temporary fencing around the wetland during project construction to ensure that no construction equipment or activities encroach upon the wetland. Implementation of this mitigation measure would reduce potential impacts to federally protected wetlands to a less than significant level.

- d) **Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?**

Less than significant impact. The project site contains disturbed areas, and is surrounded by local roadways, SR-4, and the BNSF railroad tracks. As discussed above, the project site does not contain suitable habitat for wildlife species to occur, and proposed improvements of the project site would result in less than significant impacts to any native or migratory species. Additionally, the project site is not within any designated wildlife corridors; as such, impacts would be less than significant.

- e) **Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

No impact. City of Hercules Ordinance No. 331, now incorporated into Hercules Municipal Code Title 4, Chapter 15, regulates the removal of protected trees in order to preserve the public health, safety, and general welfare of the City. There are no trees within the project site, so no conflict with the Hercules Municipal Code would occur. The City has no other policies or ordinances that protect biological resources, so no other conflicts would occur. No impact would occur.

- f) **Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**

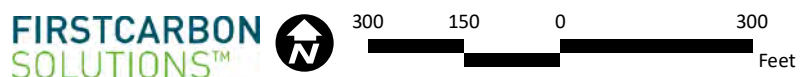
No impact. The City of Hercules does not currently have, nor is it located within, an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan. As such, the project would not conflict with an adopted HCP, NCCP, or approved local, regional, or state habitat conservation plan. No impact would occur.

Mitigation Measures

- MM BIO-1** Prior to the start of construction activities, temporary fencing shall be installed around the wetland area. No construction equipment or activities, including the stockpiling of soils, shall be allowed within the fenced area. The temporary fencing shall be removed when construction activities are completed.



Source: USFWS; Civil Design & Drafting, Inc. 2016



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Exhibit 11 Potentially Jurisdictional Wetlands

CITY OF HERCULES • WILLOW AVENUE COMMERCIAL CENTER
INITIAL STUDY / MITIGATED NEGATIVE DECLARATION

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Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
5. Cultural and Tribal Cultural Resources				
<i>Would the project:</i>				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:</i>				
e) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Environmental Evaluation

This section evaluates potential effects on cultural resources that may result from project implementation. Descriptions and analysis in this section are based on a Cultural Resources Assessment prepared by FCS, provided as Appendix C. The Cultural Resources Assessment involved an updated records search and literature review, notification with tribal representatives, and a pedestrian survey of the project site.

Cultural Resources

Would the project:

- a) **Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?**

Less than significant impact with mitigation incorporated. The results of the records search show that seven cultural resources lie within 0.5 mile of the project site. Of the cultural resources recorded within a 0.5-mile radius of the project site, three are significant historic resources. No additional resources were observed within the site boundaries over the course of the pedestrian survey. However, poor soil visibility and close proximity to natural resources and terrain suitable for prehistoric settlement increase the potential for undiscovered resources to be present within the site boundaries. Based on the results of the records searches and pedestrian survey, the potential for the project to have an adverse effect on historic or prehistoric cultural resources is considered to be moderate.

While unlikely, subsurface construction activities always have the potential to damage or destroy previously undiscovered historic resources. Historic resources can include wood, stone, foundations, and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramics, and other refuse. Accordingly, implementation of MM CUL-1 would be required to reduce potential impacts to historic resources that may be discovered during project construction. With the incorporation of MM CUL-1, impacts associated with historic resources would be less than significant.

- b) **Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?**

Less than significant impact with mitigation incorporated. As discussed in impact (a), the records search identified seven cultural resources within a 0.5-mile radius of the building footprint, four of which are considered significant prehistoric resources. However, no archaeological resources were recorded within the project site or observed during the pedestrian survey. In addition, the pedestrian survey failed to reveal any prehistoric cultural resources within the project area. The lack of surface visibility and proximity to archaeological resources means the potential for the proposed project to have an adverse effect on unknown archaeological resources is nonetheless considered low.

However, subsurface construction activities have the potential to damage or destroy previously undiscovered prehistoric resources. Prehistoric resources can include flaked-stone tools (e.g., projectile points, knives, and choppers) or obsidian, chert, or quartzite toolmaking debris; culturally darkened soil (such as midden soil containing heat-affected rock, ash, and charcoal, shellfish remains, and animal bones); and stone milling equipment (e.g., mortars, pestles, handstones). Accordingly, implementation of MM CUL-1 would be required to reduce potential impacts to archaeological resources that may be discovered during project construction. With the incorporation of MM CUL-1, impacts associated with historic resources would be less than significant.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than significant impact with mitigation incorporated. On January 19, 2018, consulting paleontologist Dr. Ken Finger performed a records search on the University of California Museum of Paleontology database for the Willow Glen project site in Contra Costa County. The results of the database search identified the site as consisting of two Miocene units that have the potential of yielding significant paleontological resources. The UCMP database lists 32 vertebrate localities in the Monterey Formation and 38 vertebrate specimens from the Briones Formation in Contra Costa County, the nearest about 3 miles north of the project site.

The project site would disturb Miocene deposits that are known to have yielded vertebrate fossils in Contra Costa County. However, the most likely unit to be impacted is the Monterey Formation, which in this County has yielded just a single vertebra. There are no known paleontological resources within the project site boundaries or within a 0.5-mile radius. For these reasons, the potential for the proposed project to have an adverse effect on paleontological resources is considered low.

Although impacts to known paleontological resources are unlikely to occur during development of the project, subsurface construction activities occurring at depths of 10 feet or deeper may have the potential to damage or destroy previously undiscovered paleontological resources. Paleontological resources may include but are not limited to fossils from mammoths, saber-toothed cats, rodents, reptiles, and birds. Accordingly, implementation of MM CUL-2 would be required to reduce potential impacts to paleontological resources that may be discovered during project construction. With the incorporation of mitigation, impacts associated with paleontological resources would be less than significant.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less than significant impact with mitigation incorporated. The record search and pedestrian survey yielded no evidence of burial sites or human remains on the project site or in the general vicinity. However, there is always the possibility that construction activities associated with the proposed project, such as trenching and grading, could potentially damage or destroy previously undiscovered human remains. If human remains were discovered, implementation of MM CUL-3 would reduce this potential impact to a less than significant level.

Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- e) **Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or**

Less than significant impact. A review of the California Register of Historical Resources, local registers of historic resources, a records search conducted at the NWIC, and a Native American Heritage Commission (NAHC) Sacred Lands file search failed to identify any listed tribal cultural resources that may be adversely affected by the proposed project. As such, no known eligible or potentially eligible tribal cultural resources would be adversely affected by the project. Project impacts would be less than significant.

- f) **A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.**

Less than significant impact with mitigation incorporated. FCS sent a letter to the NAHC in an effort to determine whether any sacred sites are listed on its Sacred Lands File for the project area. A response was received on January 10, 2018 indicating that the Sacred Lands File failed to indicate the presence of Native American cultural resources in the immediate project area. The NAHC included a list of six tribal representatives available for consultation. To ensure that all Native American knowledge and concerns over potential tribal cultural resources that may be affected by the project are addressed, a letter containing project information and requesting any additional information was sent to each tribal representative on January 19, 2018. No responses have been received to date. However, MM CUL-1 addresses the same potential resources identified by the tribe and taken into consideration by the lead agency. Its implementation would reduce potential impacts to a less than significant level.

Mitigation Measures

- MM CUL-1** Because of the moderate potential for undiscovered cultural resources within the project area, a qualified archaeologist shall be present during the initial phase of ground disturbance and grading in order to check for the inadvertent exposure of cultural materials. The initial phase of ground disturbance shall be deemed the grading operation that includes removal of organic material along the surface of the site. For areas to be excavated and soil removed, the upper 3 feet of removals shall be deemed initial ground disturbance. On areas to receive fill, scarification and moisture conditioning occurring on the upper 12 to 18 inches shall be deemed the initial ground disturbance. This may be followed by regular periodic or “spot-check” archaeological monitoring as needed by a full-time archaeological monitoring who meets the Secretary of Interior’s Professional Qualification Standards for archaeology, as well as a Tribal Cultural Monitor. If a potentially significant cultural resource is encountered during subsurface earthwork activities, all construction activities within a 100-foot radius of the find shall cease and workers should avoid altering the materials until the Archaeologist or Tribal Monitor has evaluated the

situation and provided appropriate recommendations. Project workers shall not collect or remove any cultural resources. The Applicant shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Any previously undiscovered resources found during construction activities shall be recorded on appropriate Department of Parks and Recreation (DPR) forms and evaluated for significance in terms of CEQA criteria by a qualified archaeologist. Potentially significant cultural resources consist of but are not limited to stone, bone, glass, ceramics, fossils, wood, or shell artifacts, or features including hearths, structural remains, or historic dumpsites. If the resource is determined significant under CEQA, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan that will capture those categories of data for which the site is significant in accordance with Section 15064.5 of the CEQA Guidelines. The archaeologist shall also perform appropriate technical analyses, prepare a comprehensive report complete with methods, results, and recommendations, and provide for the permanent curation of the recovered resources. The report shall be submitted to the City of Hercules, the Northwest Information Center, and the State Historic Preservation Office (SHPO), if required.

MM CUL-2 In the event that fossils or fossil-bearing deposits are discovered during construction activities, excavations within a 100-foot radius of the find shall be temporarily halted or diverted. The project contractor shall notify a qualified paleontologist to examine the discovery. The applicant shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. The paleontologist shall document the discovery as needed in accordance with Society of Vertebrate Paleontology standards and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction activities are allowed to resume at the location of the find. If the Applicant determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of construction activities on the discovery. The plan shall be submitted to the City of Hercules for review and approval prior to implementation, and the Applicant shall adhere to the recommendations in the plan.

MM CUL-3 In the event of the accidental discovery or recognition of any human remains, CEQA Guidelines Section 15064.5, Health and Safety Code Section 7050.5, and Public Resources Code Sections 5097.94 and 5097.98 must be followed. If during the course of project development there is accidental discovery or recognition of any human remains, the following steps shall be taken:

1. There shall be no further excavation or disturbance within 100 feet of the remains until the County Coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required. If the coroner determines the remains to be Native American, the coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours, and

the NAHC shall identify the person or persons it believes to be the most likely descendant (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work within 48 hours, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98.

2. Where the following conditions occur, the landowner or his or her authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the most likely descendant or on the project site in a location not subject to further subsurface disturbance:
 - The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 48 hours after being notified by the commission.
 - The descendant identified fails to make a recommendation.
 - The landowner or his authorized representative rejects the recommendation of the descendant, and mediation by the NAHC fails to provide measures acceptable to the landowner.

Additionally, California Public Resources Code Section 15064.5 requires the following relative to Native American remains:

When an initial study identifies the existence of, or the probable likelihood of, Native American remains within a project, a lead agency shall work with the appropriate Native Americans as identified by the NAHC, as provided in Public Resources Code Section 5097.98. The applicant may develop a plan for treating or disposing of, with appropriate dignity, the human remains, and any items associated with Native American burials with the appropriate Native Americans as identified by the NAHC.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
6. Geology and Soils <i>Would the project:</i>				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Evaluation

This section evaluates potential effects on geology and soils that may result from project implementation. Descriptions and analysis in this section are based in part on a Preliminary Geotechnical Exploration prepared by ENGEO, Inc., and on a custom soil survey of the project site provided through the website of the Natural Resources Conservation Service (NRCS). Appendix D contains both reports.

Would the project:

- a) **Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:**
- i) **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.**

Less than significant impact. The City of Hercules is in an area where active earthquake faults are located. The Hayward Fault is approximately 2.5 miles southwest of Hercules, the Concord-Green Valley Fault is approximately 10 miles to the east, and the San Andreas Fault is approximately 21 miles to the southwest. In addition, there are two inactive faults in the area: the Pinole Fault immediately southwest of Hercules, and the Franklin Fault approximately 3 miles northeast. Neither of the two inactive faults has shown signs of surface displacement in recent geological times, although a swarm of earthquakes in the Briones Hills 1977 may have been associated with the Pinole Fault (City of Hercules 1995).

The Alquist-Priolo Earthquake Fault Zoning Act, passed in 1972, provides a mechanism for reducing losses from surface fault rupture on a statewide basis. Under this act, Earthquake Fault Zone maps have been prepared that identify surface traces of active faults. If an active fault is identified, a structure for human occupancy cannot be placed over the trace of the fault and must be set back from the fault (generally 50 feet). The project site is within the area covered by the Mare Island Special Studies Zone Map, but it is not located within an identified Earthquake Fault Zone. The nearest such zone is in the vicinity of Pinole Point approximately 4.4 miles to the southwest. Because of this, the potential for ground rupture on the project site is anticipated to be minimal; therefore, impacts would be less than significant.

- ii) **Strong seismic ground shaking?**

Less than significant impact. Similar to many areas of California, the project site could be subject to ground shaking caused by the regional faults identified above. The extent of the ground shaking hazard is based on the distance to epicenters, depth, and magnitude of the shock, and the characteristics of the underlying soil materials at the site. Under moderate to severe seismic events, buildings, utilities, and other improvements constructed on the project site would likely be subject to damage caused by ground shaking. According to a preliminary geotechnical investigation conducted by ENGEO of the project site, seven active faults within 25 miles of the project site are capable of producing earthquakes with a maximum moment magnitude ranging from 6.7 to 7.8.

The City of Hercules has adopted the 2016 edition of the California Building Code (CBC), with amendments. The project site is located in CBC Seismic Hazard Zone 4, which indicates the highest classification of the four zones and has the most stringent requirements for building design. According to the ENGEO evaluation, seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure, combined with the gravity forces of dead-and-live loads. The code-prescribed lateral forces are generally considered

substantially smaller than the comparable forces that would be associated with a major earthquake. Therefore, structures should be able to (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage. Conformance with CBC requirements would reduce risk associated with seismic ground shaking to less than significant levels.

iii) Seismic-related ground failure, including liquefaction?

Less than significant impact. Earthquakes can cause secondary ground failures, such as liquefaction, lurching, and settlement. Liquefaction is the sudden loss of strength in loose, saturated materials, which results in a temporary, fluid-like behavior of these materials. Liquefaction typically occurs in areas where groundwater is shallow and materials consist of clean, poorly consolidated, fine sands. According to the NRCS soil report, soils on the project site are composed of varying degrees of clays and loams (see Appendix D). No sandy soils were identified on the project site.

Lurching is the cracking of the ground surface in soft, saturated material as a result of ground shaking. Lurching is likely to occur in areas of bay mud and fill during moderate to large earthquakes. The NRCS information indicated no bay muds or fills are located on the project site.

Differential settlement, where adjoining areas settle different amounts, most commonly occurs in loose, uncompacted materials of variable density and strength. Artificial fills would likely be most susceptible to differential settlement. No artificial fills have been identified on the project site. Furthermore, on-site soil preparation and grading would ensure suitable density and strength of soils.

No seismic-related ground failure hazards were identified on the project site. Project impacts pertaining to seismic-related ground failure are considered less than significant.

iv) Landslides?

Less than significant impact with mitigation incorporated. According to the Phase I Environmental Site Assessment (ESA) for the project, prepared by EP Environmental Service in 2016 (see Appendix E), the project site is located in an area subject to a landslide hazard, based on potential hazard maps prepared by the Association of Bay Area Governments (ABAG). APN 406-522-001, the western portion of the project site, is shown as situated in a connected area of few landslides, while APN 406-522-004 (the eastern portion) overlaps a connected area mapped as having many landslides. A review of aerial photographic images shows a potential minor scarp from recent landslide activity on APN 406-522-001 and one on land near SR-4 adjoining APN 406-522-004.

The ENGEO evaluation makes several recommendations related to earthmoving activities, including work on slopes, that are intended to promote stability. MM GEO-1 would require incorporation of these recommendations into project design and construction. Implementation of this mitigation measure would reduce impacts to a level that would be less than significant.

b) Result in substantial soil erosion or the loss of topsoil?

Less than significant impact. Construction activities associated with the project, including grading and excavation, would disturb ground surfaces. This would expose soils to wind and water, which could result in a short-term increase in erosion and sedimentation. Long-term impacts, including loss of topsoil, could result from modification of the ground surface and removal of existing vegetation.

Projects that disturb one or more acres of land are required to obtain the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit), issued by the State Water Resources Control Board (SWRCB). The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must list Best Management Practices (BMPs) the project would implement to control erosion and prevent the conveyance of sediments off-site. Implementation of the conditions of the Construction General Permit would reduce erosion impacts resulting from project construction to less than significant. Once construction work is completed, the impervious surfaces and landscaping would minimize potential erosion and topsoil loss risks. Impacts would be less than significant.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less than significant impact with mitigation incorporated. As discussed under Impact 6a(iv), the project site is located in an area subject to a landslide hazard. It is possible that unstable soils contribute to this identified hazard. The ENGEO evaluation indicated that the primary geotechnical concerns that could affect development on the site is expansive soil. Expansive soil issues are discussed in Impact 6d) below. No other significant soil issues were identified, although the evaluation made recommendations on keyways, benching and subdrains, along with other earthwork.

The ENGEO evaluation concluded that the project site is suitable for the proposed development, provided the geotechnical recommendations in the evaluation are properly incorporated into the design plans and specifications. The primary geotechnical concern that could affect development on the site is expansive soil. Expansive soil issues are discussed in Impact 6d) below. MM GEO-1 would require the implementation of recommended measures in the ENGEO report pertaining to construction, which would avoid or minimize potential soil stability issues. Impacts after mitigation would be less than significant.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Less than significant impact with mitigation incorporated. According to an NRCS soil survey (see Appendix D), the project site contains five types of soils: Clear Lake clay, Conejo clay loam, Dibble silty clay loam, Los Gatos loam, and Sehorn clay. All of these soils are classified as having a moderate to high shrink-swell potential. Soils with shrink-swell characteristics have the potential to cause damage to foundations, slabs, and pavement. The ENGEO evaluation confirmed the presence of expansive soils on the project site. Potentially expansive fat clay and shale were observed near the

surface of the site in 11 test pits, and laboratory testing indicates that these soils exhibit high shrink/swell potential with variations in moisture content.

Implementation of MM GEO-2 would require mitigation to overcome shrink-swell effects, thus preventing potential damage to structures and infrastructure. With implementation of MM GEO-2, impacts would be less than significant.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No impact. The project proposes connection to the City's sanitary sewer system for disposal of wastewater. It would not rely upon septic tanks, leach fields, or alternative wastewater disposal systems. The project would have no impact related to the capability of soils to support wastewater disposal.

Mitigation Measures

MM GEO-1 Prior to final project approval, the project applicant shall incorporate earthwork, grading, foundation support, and other recommendations regarding project design and construction in the Preliminary Geotechnical Evaluation prepared by ENGEO Incorporated on November 16, 2017.

MM GEO-2 Prior to final project approval, the project applicant shall incorporate recommendations regarding expansive soils in the Preliminary Geotechnical Evaluation prepared by ENGEO Incorporated on November 16, 2017. As noted in Section 5.7 of the Preliminary Geotechnical Evaluation, the following alternatives shall be incorporated to reduce the effects of expansive soils on building foundation and improvements:

- Construct the upper 24 inches of the building pads extending at least 10 feet laterally beyond building areas with selected fill derived from excavations in lower plasticity bedrock. Because of the distribution of expansive materials on-site, selective grading may be difficult to perform. Alternatively, if selective grading cannot be performed building pads shall be constructed with imported non-expansive fill.
- Lime treat the upper 24 inches of the building pad to reduce the expansion potential of the on-site soil.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
7. Greenhouse Gas Emissions <i>Would the project:</i>				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Environmental Evaluation

This section evaluates potential effects related to GHG emissions that may result from project implementation. Descriptions and analysis in this section are based on a GHG analysis prepared by FCS. The analysis in this section is based, in part, on the California Emissions Estimator Model (CalEEMod Version 2016.3.2) analysis. Appendix A contains the modeling data for the GHG analysis in its entirety.

Would the project:

- a) **Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

Less than significant impact with mitigation incorporated. The project is located in an area of Contra Costa County regulated by the BAAQMD. BAAQMD's project-level significance threshold for operational GHG generation was deemed appropriate to use when determining the project's potential GHG impacts. The thresholds suggested by BAAQMD for project-level operational GHG generation are as follows:

- Compliance with a qualified Greenhouse Gas Reduction Strategy, or
- 1,100 metric tons of carbon dioxide equivalent per year (MT CO₂e/year), or
- 4.6 MT CO₂ equivalent per service population (employees plus residents).

The estimated annual emissions for the project were compared with the 1,100 MT CO₂e/year bright line threshold to determine significance for this criterion.

The BAAQMD has not developed a specific construction GHG threshold; however, some agencies, including the Sacramento Metropolitan Air Quality Management District (SMAQMD), have adopted 1,100 MT CO₂e/year as a threshold for construction-related GHG emissions (SMAQMD, 2015). For the purposes of this analysis, the SMAQMD construction threshold is used to evaluate the project's construction-related emissions. BAAQMD also recommends that lead agencies make a

determination of the level of significance of construction-generated GHG emissions in relation to meeting AB 32 GHG reduction goals.

Project Construction

The project would generate GHG emissions during construction activities such as site grading, on-site heavy-duty construction vehicle use, vehicles hauling materials to and from the project site, and construction worker trips to and from the site. These emissions are considered temporary or short-term. Therefore, construction emissions are compared to the SMAQMD 1,100 MT CO₂e GHG threshold in Table 21, Table 22, and Table 23.

Table 21: Construction GHG Emissions from Self-Storage Facility

Construction Phase	Total Emissions (MT CO ₂ e)
Site Preparation	109
Grading-2018	46
Grading-2019	126
Building Construction	491
Paving	55
Architectural Coating	18
Total Construction Emissions—2018	155
Total Construction Emissions—2019	617
Threshold of Significance	1,100
Note: MT CO ₂ e = metric tons of carbon dioxide equivalent Source: SMAQMD 2015; FCS 2017, CalEEMod Appendix A.	

Table 22: Construction GHG Emissions from Automotive Service Center

Construction Phase	Total Emissions (MT CO ₂ e)
Site Preparation	109
Grading-2018	47
Grading-2019	129
Building Construction	253.2
Paving	55
Architectural Coating	5
Total Construction Emissions-2018	156
Total Construction Emissions-2019	442

Table 22 (cont.): Construction GHG Emissions from Automotive Service Center

Construction Phase	Total Emissions (MT CO ₂ e)
Threshold of Significance	1,100
Note: MT CO ₂ e = metric tons of carbon dioxide equivalent Source: SMAQMD 2015; FCS 2017, CalEEMod Appendix A.	

Table 23: Total GHG Emissions during Construction

Total Construction Emissions—2018	Total Construction Emissions—2019	Threshold of Significance	Exceeds Threshold
311	1,059	1,100	No
Note: MT CO ₂ e = metric tons of carbon dioxide equivalent Source: SMAQMD 2015; FCS 2017, CalEEMod Appendix A.			

As shown in the preceding tables, project construction-related GHG emissions would not exceed the applicable 1,100 MT CO₂e construction GHG thresholds. Therefore, construction GHG emission impacts would be less than significant.

Project Operations

Operational or long-term GHG emissions occur over the life of the project. Sources for operational emissions include:

- **Motor Vehicles**—these emissions are contained in the exhaust from the cars and trucks that would travel to and from the project site.
- **Natural Gas**—these emissions occur when natural gas is burned on the project site. Natural gas uses include heating water, space heating, dryers, stoves, or other uses.
- **Indirect Electricity**—these emissions are generated by off-site power plants to supply electricity required for the project.
- **Water Transport**—these emissions are generated by the electricity required to transport and treat the water to be used on the project site.
- **Waste**—these emissions are produced by decomposing waste generated by the project.

GHG emissions from energy consumption were calculated using the Pacific Gas and Electric Company's energy intensity factors for CO₂, N₂O, and CH₄, and the CalEEMod methodology from Appendix A of the CalEEMod user's manual (CAPCOA 2016). Detail calculations are provided in Attachment A of the GHG evaluation included in Appendix A of this IS/MND. Unmitigated

operational GHG emissions by source are shown in Table 24 and Table 25. Table 25 also shows total unmitigated operational GHG emissions of the project.

Table 24: Operational GHG Emissions from Self-Storage Facility—No Mitigation

Source	Total Emissions (MT CO ₂ e)
Area	<1
Energy	118
Mobile	380
Waste	60
Water	75
Total	633
Note: MT CO ₂ e = metric tons of carbon dioxide equivalent Source: BAAQMD, 2017; FCS 2017. See Appendix A.	

Table 25: Operational GHG Emissions from Automotive Service Center and Combined Total Operational Emissions—No Mitigation

Source	Total Emissions (MT CO ₂ e)
Area	<1
Energy	56
Mobile	611
Waste	34
Water	5
Total	706
Total Operational Greenhouse Gas Emissions (from Self-Storage Facility and Automotive Service Center)	1,339
Threshold of Significance	1,100
Exceeds Threshold	Yes
Note: MT CO ₂ e = metric tons of carbon dioxide equivalent Source: BAAQMD, 2017. FCS, 2017. See Appendix A.	

As noted in Section 1.3, Project Description, the project would install a solar energy system on the self-storage facility that would generate an anticipated 100 kWh renewable energy per year. In addition, under AB 2230 (Recycled Water for Car Washes), the project would utilize recycled water

for approximately 60 percent of outdoor water. Table 26 shows the total project operational GHG emissions with implementation of these actions.

Table 26: Project Operational GHG Emissions with Reduction Actions

Source	Total Emissions (MT CO ₂ e)
Self-Storage Facility	
Area	0
Energy	118
Mobile	380
Waste	60
Water	75
Total	633
Automotive Service Center	
Area	0
Energy	56
Mobile	611
Waste	34
Water	4
Total	705
<i>Total Operational Emissions</i>	1338
Threshold of Significance	1,100
Exceeds Threshold	Yes
Note: MT CO ₂ e = metric tons of carbon dioxide equivalent Source: BAAQMD, 2017; FCS 2017, Appendix A.	

As shown above, the GHG operational emissions during operation would exceed BAAQMD's threshold of significance even with incorporation of actions that would reduce emissions. For additional methods for further reduction of emissions, BAAQMD suggests implementing additional on-site renewable offsets and/or purchasing carbon offsets. As such, MM GHG-1 shall be implemented, which would require the purchase of carbon offsets by the project in the amount of approximately 250 MT CO₂e per year. With the installation of an approximately 100 kWh solar energy system and implementation of MM GHG-1, the project GHG emissions would not exceed the BAAQMD's thresholds of significance. The impact would be less than significant with mitigation incorporated.

b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

Less than significant impact with mitigation incorporated. The City of Hercules has not adopted a GHG reduction plan. The project is located in the western part of Contra Costa County. County of Contra Costa adopted a Climate Action Plan (CAP) on December 2015. This CAP identifies how the County will achieve the AB 32 2020 GHG emission reduction target of 15 percent below baseline levels by the year 2020. In addition, this CAP lays the groundwork for achieving the long-term statewide GHG reduction target for 2035.

Under this CAP, new development projects would be considered to have an impact that is less than significant under CEQA if consistency with all applicable mandatory local or regional measures are demonstrated. The following GHG reduction measures recommended by the CAP apply to the project:

- **Measure RE 2:** Alternative Energy Facilities: continue to install alternative facilities (e.g. photovoltaic panels and electric vehicle charging stations) on buildings and lands.
- **Measure W 1:** Waste Reduction and Recycling: develop a waste reduction strategy to increase recycling and reuse of materials.
- **Measure WE 1:** Water Conservation: Reduce water demand. Continue to reduce potable water use by at least 20% by 2020 through conservation efforts in new and existing development.
- **Measure WE 2:** Alternative Water Supplies: Provide alternative water resources for irrigation in residential and nonresidential areas, e.g., promote rainwater collection for irrigation purposes, and update the Dual Water Systems Ordinance to allow the use of recycled water for irrigation in residential and nonresidential areas.

In addition, MM GHG-1 would require the project to purchase carbon offsets to bring the operational GHG emissions with these offsets below BAAQMD's threshold of significance. Therefore, with implementation of MM GHG-1 and the measures mentioned in the CAP, the project would be consistent with the CAP. Therefore, the project would not conflict with the AB 32 GHG reduction target, and project impacts would be less than significant with mitigation incorporated.

Mitigation Measures

MM GHG-1 Prior to the issuance of the final Certificate of Occupancy, the project applicant shall provide documentation demonstrating that it has purchased carbon offsets from local or regional registries in the amount of 250 MT CO₂e per year for the expected determined life of the project (20-years). The chosen registry must have California Air Pollution Control Officers Association (CAPCOA)-approved protocols.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
8. Hazards and Hazardous Materials <i>Would the project:</i>				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Evaluation

This section evaluates potential effects related to hazards and hazardous materials that may result from project implementation. Descriptions and analysis in this section are based in part on a Phase I ESA prepared by EP Environmental Service. Appendix E contains a copy of the ESA.

Would the project:

- a) **Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

Less than significant impact. The proposed project would develop approximately 148,591 square feet of new commercial uses on the project site. The storage facility would require minimal use of substances that may be considered hazardous, mainly cleaning products and possibly rodenticides. The proposed automotive service center uses would involve the routine uses of common low-level hazardous materials associated with automobile services, such as cleaning solvents, diesel, gasoline, grease/degreasers, mechanical fluids, and oil. Handling and transportation of these materials could result in the exposure of workers or residents to hazardous materials. However, the project would not create a significant hazard to the public or the environment, since project operations would be required to comply with applicable federal, state, and local laws pertaining to the safe handling and transport of hazardous materials. Given this and the relatively small quantities involved, impacts related to the transport, use, or disposal of hazardous materials are considered less than significant.

- b) **Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?**

Less than significant impact. As discussed under Impact 8a, the storage facility would involve the minimal use of hazardous materials. Given the small quantities involved and the characteristics of use, the potential release of such materials is not considered a significant risk to human health or the environment.

The automotive service center portion of the project would involve the routine uses of common low-level hazardous materials associated with automobile services. It is anticipated that such materials would be used in larger quantities, and, therefore, a larger amount of these materials would be available on-site. Spills or releases of these materials, therefore, could have a greater impact on the environment than releases from the storage facility.

Businesses that handle hazardous materials in reportable quantities are required to submit an annual hazardous materials business plan to the local Certified Unified Program Agency (CUPA). Contra Costa Health Services—Hazardous Materials Programs is the CUPA for all businesses within Contra Costa County. A hazardous materials business plan consists of Business Activities, Business Owner/Operator Identification, Hazardous Materials Inventory, Site Map, Emergency Response/Contingency Plan, and Employee Training Plan. A reportable quantity is equal to or greater than 55 gallons of a liquid, 500 pounds of a solid, 200 cubic feet of gas, or an extremely hazardous substance at or above the chemical-specific reportable quantity.

As noted in Impact 8a above, project construction and operations would comply with applicable federal, state, and local laws pertaining to the safe handling of hazardous materials. Compliance with these regulations along with the provisions of the hazardous materials business plan would minimize the effects of any releases of hazardous materials used by automotive service center activities.

Project construction would involve the minor use of hazardous materials typically required during construction, such as diesel fuel and other motor lubricants. Contractors would be required to comply with applicable federal, state, and local laws pertaining to the safe handling and transport of hazardous materials, which would minimize potential spill occurrences. Spills that may occur during construction activities would likely be minimal and potential adverse effects would be localized and addressed as required by applicable law. Plans and specifications typically require contractors to clean up immediately any spills of hazardous materials. Overall, project impacts related to the spill or release of hazardous materials would be less than significant.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less than significant impact. The nearest school to the project site is Valley Preschool & Daycare located 270 feet northwest of the project site. While Valley Preschool & Daycare is located within 0.25 mile, the proposed project would not emit hazardous emissions or handle large quantities of hazardous materials. Spills or releases of hazardous materials on the project site would remain localized and would not affect Valley Preschool & Daycare. Impacts would be less than significant.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No impact. The Phase I ESA for the project evaluated the project site for recognized environmental conditions, which include the presence of hazardous material sites. The evaluation included a search of federal, state, and local databases kept on hazardous material sites, including the State's Cortese list maintained in accordance with Government Code Section 65962.5. None of the databases, including the Cortese list database, has a record of any hazardous material sites located on the project site. The Phase I ESA evaluated the project site itself for recognized environmental conditions and found no evidence of such conditions on the project site. As such, the project would have no impact related to hazardous material sites.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No impact. There are no public airports or public use airports within two miles of the project site. The nearest public airport for which a land use plan has been prepared is Buchanan Field in Concord, approximately 11 miles to the east. The project site is not within the Airport Influence Area of Buchanan Field. Because of this, the project would have no impact related to airport safety hazards.

- f) **For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?**

No impact. There are no private airstrips in the project vicinity. This condition precludes the possibility of exposing persons residing or working in the project vicinity to aviation hazards. No impact would occur.

- g) **Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

Less than significant impact. The proposed project would be accessible from one driveway off Willow Road. There would also be emergency vehicle access between the storage facility and the automotive service center. Project construction would occur on Willow Avenue fronting the project site. However, construction work is not expected to close Willow Avenue, so the road would remain available for emergency vehicle access. Construction equipment can be removed if determined necessary by the City to facilitate evacuations in the area. Impacts would be less than significant.

- h) **Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?**

Less than significant impact. The project site is surrounded by urban development or infrastructure on three sides. The area to the east would remain undeveloped and thus potentially susceptible to wildfires. The project would be required to comply with the adopted California Fire Code, which would require measures that would reduce potential damage from fires. In addition, the Rodeo-Hercules Fire District Station No. 76, on 1680 Refugio Valley Road, is approximately 0.54 mile away from the project site, so response time to any fires in the area is expected to be within the District goal of 5 minutes (see Section 14, Public Services). As such, project impacts related to wildfire hazards would be less than significant.

Mitigation Measures

None.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
9. Hydrology and Water Quality <i>Would the project:</i>				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Evaluation

Would the project:

a) Violate any water quality standards or waste discharge requirements?

Less than significant impact. No surface streams or bodies of water are on the project site. The nearest surface water to the project site is the East Branch of Refugio Creek, an intermittent stream located along the west side of Palm Avenue. This branch flows into Refugio Creek, which eventually discharges into San Pablo Bay.

Site grading and other earthmoving activities would occur to construct parking lots, building pads, utilities connections, and similar improvements. Proposed grading could increase the potential of erosion and increase the amount of sediments carried by stormwater runoff into bodies of water off the project site. As noted in Section 6, Geology and Soils, project construction activities would be required to obtain a Construction General Permit from the SWRCB. The permit would require the preparation of a SWPPP, which would include Best Management Practices to be implemented during construction and post-construction activities that would reduce the potential for water quality degradation to occur. These measures may include revegetation of graded areas, silt fencing, and use of biofilters within parks and other landscaped areas, among others.

Construction and post-construction activities would be monitored by the SWRCB in accordance with the SWPPP, and adjustments may be made during project construction as necessary to erosion control methods and water quality protection as field conditions warrant. With full implementation of the Construction General Permit and its conditions, project construction impacts on surface waters and their quality would be less than significant.

Project operations, including the use of parking areas, may contribute pollutants that may be conveyed by stormwater runoff into nearby streams. Stormwater runoff is regulated under Section 402 of the federal Clean Water Act, which authorizes the National Pollutant Discharge Elimination System (NPDES) permit program. Under 1987 amendments to the Clean Water Act, the NPDES program was expanded to include municipal separate storm sewer systems (MS4). The City of Hercules—along with 15 other incorporated cities, Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District—participates in a joint MS4 regulated by the Municipal Regional Stormwater NPDES Permit (NPDES Permit No. CAS612008), issued by the San Francisco Bay Regional Water Quality Control Board (RWQCB).

The permittees participate in the Contra Costa Clean Water Program, designed to implement the conditions of the NPDES permit. The Contra Costa Clean Water Program has issued the Stormwater C.3 Guidebook, which was designed to ensure that development projects are in compliance with the Municipal Regional Stormwater NPDES Permit. The Guidebook provides guidance on the preparation of a Stormwater Control Plan that demonstrates compliance with the NPDES permit to treat stormwater prior to discharge from the site. Compliance with this Guidebook, and by extension the NPDES permit, would minimize the amount of contaminants that are transported off-

site by stormwater runoff. As such, impacts of project operations on surface waters and their quality would be less than significant.

- b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?)**

Less than significant impact. According to the Phase I ESA conducted for the project site, at the Caltrans Maintenance Facility on 1369 Willow Avenue, approximately 500 feet west of the project site, depth to groundwater from December 1999 through September 2001 ranged from 2.31 to 5.56 feet below tops of well casings. The shallow groundwater surface at this location was reported to slope down toward the northwest. At 828 Willow Avenue, approximately 0.7 mile north of the project site, depth to groundwater was reported between 13 and 17 feet below tops of well casings. The shallow groundwater surface at 828 Willow Avenue was reported to slope down toward the east-southeast or east.

The project would add impervious surfaces such as buildings and paved surfaces for vehicular access and parking. This would reduce the amount of area in which precipitation could percolate into the ground and recharge the local aquifers. However, open space would remain available to the east of the project site, so groundwater recharge area would remain available in the vicinity. The project site is not identified as a significant groundwater recharge area. Moreover, the project would not use wells for its water supply. Instead, the project site would connect to the water system of the East Bay Municipal Utility District (EBMUD), the water provider for the City. EBMUD obtains water from its reservoirs in the Sierra Nevada region. Project impacts on groundwater would be less than significant.

- c) Substantially alter the existing drainage pattern of area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?**

Less than significant impact. Drainage typically follows the surface topography of a site. Although the ground surface slopes variably, the site slopes generally down from the Willow Avenue side of the property toward the BNSF railroad tracks and Sycamore Avenue. The project would alter the surface of the site such that it would change existing drainage patterns. However, storm drainage facilities would be installed that would collect and dispose of site drainage in accordance with the applicable conditions of the Municipal Regional Stormwater NPDES Permit. Because of this, drainage after project construction is not expected to result in substantial erosion or siltation, either on-site or off-site. Project impacts would be less than significant.

- d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?**

Less than significant impact. As noted in Impact 9c, the project would alter the surface of the site such that it would change existing drainage patterns. Storm drainage facilities would be installed that would collect and dispose of site drainage. In accordance with the applicable conditions of the

Municipal Regional Stormwater NPDES Permit, storm drainage would be disposed of as required by Low Impact Development (LID) design criteria as set forth in the Stormwater C.3 Guidebook, which are intended to slow runoff rates and to retain or detain stormwater. Compliance with the provisions of the Guidebook would reduce the likelihood that project construction would result in on-site or off-site flooding. Project impacts would be less than significant.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less than significant impact. As noted in Impacts 9a, 9c, and 9d, the project would install facilities consistent with the Stormwater C.3 Guidebook. The Guidebook specifies that a Stormwater Control Plan be prepared that demonstrates compliance with requirements in the NPDES permit to treat stormwater prior to discharge from the site. Compliance with this requirement would minimize the amount of pollutants that are discharged from the site. It also specifies LID design criteria to minimize the amount of runoff generated, thereby reducing demands on existing and planned drainage systems. Impacts would be less than significant.

f) Otherwise substantially degrade water quality?

Less than significant impact. As described in Section 8, Hazards and Hazardous Materials, the automotive service center portion of the project would involve the routine uses of common low-level hazardous materials associated with automobile services. Spills or releases of these materials could conceivably reach surface waters and degrade water quality. Businesses that handle hazardous materials in reportable quantities are required to submit an annual hazardous materials business plan, which includes an Emergency Response/Contingency Plan and Employee Training Plan. In addition, project construction and operations would comply with applicable federal, state, and local laws pertaining to the safe handling of hazardous materials. Compliance with these regulations, along with the provisions of the hazardous materials business plan, would minimize the likelihood of any releases of hazardous materials that could affect water quality. Project impacts would be less than significant.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No impact. According to Flood Insurance Rate Map No. 06013C0044H, prepared by the Federal Emergency Management Agency (FEMA) with an effective date of March 21, 2017, the project site is not located within a 100-year floodplain. No impact would occur.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No impact. As discussed under Impact 9g, the project site is not located within a 100-year floodplain. Because the site is not within a floodplain, project structures would not impede or redirect any flood waters. No impact would occur.

- i) **Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?**

No impact. The proposed project is not located in an area protected by levees. The project site, as well as the City of Hercules, is not within an identified dam failure inundation zone. These conditions preclude the possibility of flooding because of levee or dam failure. No impact would occur.

- j) **Inundation by seiche, tsunami, or mudflow?**

Less than significant impact. The site is not located near a major inland body of water that could be susceptible to a seiche. According to the 1995 City of Hercules General Plan EIR, there is no evidence of damage from tsunami inundation to Contra Costa County; as such, the likelihood of damage to the City of Hercules from tsunami inundation is small and impacts would be less than significant. The project site is not located in an area of volcanic activity or significantly steep slopes, a condition that precludes susceptibility to mudflows. Impacts would be less than significant.

Mitigation Measures

None.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
10. Land Use and Planning <i>Would the project:</i>				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural communities conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Evaluation

Would the project:

a) Physically divide an established community?

No impact. The project site contains undeveloped land. As such, the project does not support any established communities. The project site is bounded by Palm Avenue in the west, Willow Avenue with a church across the street and mostly undeveloped land in the north, undeveloped land in the east, and the BNSF Railway right-of-way and a residential subdivision in the south. This condition precludes the possibility of the division of an established community. No impact would occur.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No impact. The proposed project consists of the development of self-storage and automotive service center buildings. Both the City of Hercules General Plan and the City's Zoning Ordinance designate the project site as General Commercial, which permit the construction of a broad range of retail-commercial uses. The project applicant is requesting a zoning text amendment to allow for the proposed self-storage facility, contingent upon the approval of a conditional use permit. By adding self-storage facilities to the list of conditional uses that could be considered in the General Commercial Land Use Designation, the conditional use permit process would ensure that the potential environmental impacts of future self-storage uses would be analyzed through the CEQA process. Development on-site would be required to comply with all applicable General Plan policies and zoning regulations, and would be reviewed by the City prior to approval of the necessary permits. As such, no impact would occur.

c) **Conflict with any applicable habitat conservation plan or natural communities conservation plan?**

No impact. As previously stated in Section 4, Biological Resources, the City of Hercules does not currently have, nor is it located within, an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan. As such, the project would not conflict with these plans. No impact would occur.

Mitigation Measures

None.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
11. Mineral Resources <i>Would the project:</i>				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Evaluation

Would the project:

- a) **Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?**

No impact. According to the Open Space and Conservation Element of the City's General Plan, no significant mineral deposits have been identified by the California Department of Conservation, Division of Mines and Geology in the Hercules area. Under State law, the State Geologist is required to classify specified areas into Mineral Resource Zones (MRZs). MRZ-3 zones have been mapped north and south of SR-4 and east of I-80. The MRZ-3 zone is defined as an area of undetermined mineral resource significance where mineral occurrence is either known or inferred. However, there is no information to suggest that these areas have extractable minerals of commercial value such that existing and planned land uses would be of less benefit to the region. No mineral deposits have been identified on the project site. Therefore, implementation of the project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State. Therefore, no impacts would occur.

- b) **Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?**

No impact. As previously stated, no significant mineral deposits have been identified by the California Department of Conservation, Division of Mines and Geology, according to the City of Hercules Open Space and Conservation Element. No mineral deposits have been identified on the project site. Therefore, the implementation of the project would not result in the loss of availability of a locally important mineral resource. No impacts would occur.

Mitigation Measures

None.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
12. Noise <i>Would the project result in:</i>				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Evaluation

Characteristics of Noise and Groundborne Vibration

Noise is defined as unwanted sound. Sound levels are usually measured and expressed in decibels (dB), with 0 dB corresponding roughly to the threshold of hearing. A change of 3 dB is the lowest change that can be perceptible to the human ear in outdoor environments, while a change of 5 dB is considered to be the minimum readily perceptible change to the human ear in outdoor environments. Most of the sounds that we hear in the environment do not consist of a single frequency, but rather a broad band of frequencies, with each frequency differing in sound level. The intensities of each frequency add together to generate a sound. Noise is typically generated by transportation, specific land uses, and ongoing human activity.

Since the human ear is not equally sensitive to sound at all frequencies, the A-weighted decibel scale (dBA) was derived to relate noise to the sensitivity of humans. The scale gives greater weight to the

frequencies of sound to which the human ear is most sensitive. Furthermore, the A-weighted sound level is the basis for a number of various sound level metrics, including the day/night sound level (L_{dn}) and the Community Noise Equivalent Level (CNEL), both of which represent how humans are more sensitive to sound at night. L_{dn} is the 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m. CNEL is the 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 decibels to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m. (Harris 1998). In addition, the equivalent continuous sound level (L_{eq}) is the average sound energy of time-varying noise over a sample period and the L_{max} is the maximum instantaneous noise level occurring over a sample period.

Existing Conditions

The existing noise levels on the project site were documented through short-term ambient noise measurements taken on the project site in order to determine the existing ambient noise environment in the project vicinity.

The noise measurements were taken on Friday, January 26, 2018 between 12:55 p.m. and 1:53 p.m. The noise measurement locations are shown in Exhibit 12, and the noise measurement data sheets and pictures are provided in Appendix F of this document. The noise monitoring locations were selected in order to document existing daytime ambient noise levels on the project site and to determine compatibility of the proposed development with the City's land use compatibility standards. A summary of the results of the noise level measurements is provided in Table 27.

Table 27: Noise Monitoring Summary

Site Location	Location Description—Primary Noise Sources	dBA L_{eq}	dBA L_{max}	dBA L_{min}
ST-1	On sidewalk at northernmost part of project site, 30 feet from center of Willow Avenue—Traffic from Willow Avenue	67.2	83.5	46.8
ST-2	At pre-school open space area, 30 feet from center of Willow Avenue—Traffic from Willow Avenue	62.4	74.9	43.8
ST-3	In southwest corner of site, 60 feet from center of Intersection of Willow Avenue and Palm Avenue—Traffic from Willow Avenue	60.5	76.7	46.6

Source: FirstCarbon Solutions, 2018.

Regulatory Framework

City of Hercules General Plan

The City's General Plan establishes guidelines and policies that address noise. The Noise Element establishes maximum allowable interior and exterior noise exposure standards for land uses within the City. The General Plan sets acceptable exterior noise level standards for new non-residential land development projects, as shown in Table 28.

Table 28: Land Use Compatibility for Community Noise Environments in the City of Hercules

Land Use Category	Exterior Noise Exposure (dBA CNEL or L _{dn})					
	55	60	65	70	75	80
Residential, Hotels, and Motels						
Outdoor Sports and Recreation, Neighborhood Parks and Playgrounds						
Schools, Libraries, Museums, Hospitals, Personal Care, Meeting Halls, Churches						
Office Buildings, Business Commercial, and Professional						
Auditoriums, Concert Halls, Amphitheaters						
Industrial, Manufacturing, Utilities, and Agriculture						
Key:						
	Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal convention construction, without any special insulation requirements.					
	Conditionally Acceptable: Specified land use may be permitted only after detailed analysis of the noise reduction requirements and needed noise insulation features are included in the design to mitigate noise to normally acceptable levels.					
	Unacceptable: New construction or development should generally not be undertaken because mitigation is usually not feasible to comply with noise element policies.					
Source: City of Hercules General Plan, 1998.						

Long-term noise impacts generated by traffic from new projects are considered significant if: (1) the noise level increase is 5 dBA L_{dn} or greater and the future noise level is less than 60 dBA L_{dn}; or (2) the noise level increase is 3 dBA L_{dn} or greater and the future noise level is 60 dBA L_{dn} or greater. Noise levels from stationary sources associated with new projects are considered significant if they exceed the noise level standards set forth in Table 29.

Noise created by commercial or industrial sources associated with new projects or developments, like the proposed project, shall be controlled so as not to exceed the noise level standards set forth in Table 29, as measured at any affected residential land use.



Source: Bing Aerial Imagery.

FIRSTCARBON
SOLUTIONS™



200 100 0 200
Feet

Exhibit 12

Noise Measurement Locations

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Table 29: Maximum Allowable Noise Exposure, Stationary Noise Sources¹

Category	Daytime ⁵ (7:00 AM to 10:00PM)	Nighttime ^{2,5} (7:00 AM to 10:00PM)
Hourly L_{eq} , dBA ³	50	50
Maximum Level, dBA ³	70	65
Maximum Level, dBA, Impulsive Noise ⁴	65	60
<p>Notes:</p> <p>Stationary noise sources include all non-transportation sources.</p> <p>¹ As determined at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barriers or other property line noise mitigation measures.</p> <p>² Applied only when the receiving land use operates or is occupied during nighttime hours.</p> <p>³ Sound level measurements shall be made with “slow” meter response.</p> <p>⁴ Sound level measurements shall be made with “fast” meter response.</p> <p>⁵ Allowable levels shall be raised to the ambient noise levels where the ambient levels exceed the allowable levels. Allowable levels shall be reduced 5 dBA if the ambient hourly L_{eq} is at least 10 dBA lower than the allowable level.</p> <p>Source: Noise Element, City of Hercules General Plan, 1995.</p>		

According to Policy 6 of the Noise Element, implementing the following measures would ensure that the level of noise at noise-sensitive land uses generated by construction would be reduced to less than significant:

- For construction near noise-sensitive areas, as determined by the Community and Business Development Department, require that noisy construction activities (including truck traffic) be scheduled for periods, according to construction permit to limit impact on adjacent residents or other sensitive receptors.
- Develop a construction schedule that minimizes potential cumulative construction noise impacts and accommodates particularly noise-sensitive periods for nearby land uses (e.g., for schools, churches, etc.)
- Where feasible, require that holes for driven piles be pre-drilled to reduce the level and duration of noise impacts.
- Where feasible, construct temporary solid noise barriers between source and sensitive receptor(s) to reduce off-site propagation of construction noise. This measure could reduce construction noise by up to 5 decibels.
- Require internal combustion engines used for construction purposes to be equipped with a properly operating muffler of a type recommended by the manufacturer. Also, require impact tools to be shielded per manufacturer’s specifications.

Hercules Municipal Code

The City of Hercules adopted a Zoning Ordinance with applicable noise standards in Section 31.300(11): Noise. Many of the ordinances are duplicative of the policies contained in the Noise Element of the City’s General Plan. However, the following additional regulation would also apply to the project.

Where noise levels exceed community noise standards for a proposed land use, one or more of the following techniques may be required to reduce the noise to acceptable level:

1. Proper site planning to reduce noise impacts should be investigated for a project. By taking advantage of the natural shape and contours of the site, it is often possible to arrange the buildings and other uses in a manner which would reduce and possibly eliminate noise impact. Site planning techniques include: Increasing the distance between the noise sources and the receiver. b) Placing non-noise sensitive structures such as parking lots, maintenance facilities and utility areas between the source and the receiver. c) Using non-noise sensitive structures such as garages to shield noise-sensitive areas. d) Orienting buildings to shield outdoor spaces from a noise source.
2. Architectural Layout: In many cases, noise reduction requirements can be met by giving attention to layout of noise-sensitive spaces. Bedrooms, for example, would be considerably quieter if placed on the side of the house facing away from the freeway. Similarly, balconies facing freeways should be avoided. Quiet outdoor spaces can be provided next to a noisy highway by creating a U-shaped development which faces away from the highway.
3. Noise Barriers: To be effective, a noise barrier must be massive enough to prevent significant noise transmission through it and high enough to shield the receiver from the noise source. The minimum acceptable surface weight for a noise barrier is 4 pounds per square foot (equivalent to ¾-inch plywood), and the barrier must be carefully constructed so that there are no cracks or openings. To be effective, a barrier must interrupt the line-of-sight between the noise source and the receiver.

Would the project result in:

- a) **Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?**

Short-term Construction Noise Impacts

Less than significant impact. Two types of short-term noise impacts would occur during site preparation and project construction. The first type would result from the increase in traffic flow on local streets, associated with the transport of workers, equipment, and materials to and from the project site. The second type is related to noise generated during site-preparation, grading, and construction on-site.

The transport of workers and construction equipment and materials to the project site would incrementally increase noise levels on access roads leading to the site. Because workers and construction equipment would use existing routes, noise from passing trucks would be similar to existing vehicle-generated noise on these local roadways. For this reason, short-term intermittent noise from trucks would be minor when averaged over a longer time period and would not be expected to exceed existing peak noise levels in the project vicinity. Therefore, short-term construction-related noise associated with worker and equipment transport to the proposed project site would result in a less than significant impact on receptors along the access routes leading to the site.

Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on-site. Therefore, the noise levels vary as construction progresses. Despite the variety in the types and sizes of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction related noise ranges to be categorized by work phase.

The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery and compacting equipment, such as bulldozers, draglines, backhoes, front loaders, roller compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three or four minutes at lower power settings.

A characteristic of noise is that each doubling of the sound sources with equal strength increases the noise level by 3 dBA. Assuming that each piece of construction equipment operates in close proximity to other equipment, the worst-case combined noise level during the loudest phase of construction, the site preparation phase, would be 86 dBA L_{eq} at a distance of 50 feet from an active construction area.

The nearest off-site sensitive receptor would be the daycare facility located north of the project site, approximately 140 feet from the nearest construction footprint where heavy construction equipment would operate. At this distance, the reasonable worst-case noise levels could range up to approximately 76 dBA L_{eq} during the site preparation phase.

The nearest off-site residential receptors would be the single-family residential units located south of the project site. The closest residential building façades, located at 211 Poppy Court, are located approximately 425 feet from the construction footprint where heavy construction equipment would be operating. At this distance, the reasonable worst-case noise levels could range up to approximately 68 dBA L_{eq} during the site preparation phase.

According to Noise Element Policy 6 in the City's General Plan, noise-producing construction activity is required to be controlled through the implementation of best management noise reduction practices. Furthermore, compliance with City's construction noise standards (including best management noise reduction practices and restrictions on permissible hours of construction) would ensure potential construction noise impacts are less than significant. It should be noted that construction noise would be short-term, intermittent, and overshadowed by local traffic noise.

Traffic Noise Impacts

Less than significant impact. According to the City's policies, a significant impact would occur if the proposed project would be exposed to noise levels in excess of the City's normally acceptable threshold of 70 dBA CNEL for the proposed commercial land use.

Traffic noise levels along roadway segments in the project vicinity were calculated using the FHWA Highway Traffic Noise Prediction Model (FHWA RD-77-108) upon receipt of the final data from the

traffic analysis prepared for this project. The daily traffic volumes were obtained from the TIA prepared for the project by TJKM (see Appendix G). The traffic volumes correspond to the traffic scenarios as described in the TIA. The model inputs and outputs—including the 60 dBA, 65 dBA, and 70 dBA CNEL noise contour distances—are provided in Appendix F of this document. A summary of the modeling results is shown in Table 30.

Table 30: Traffic Noise Level Results

Roadway Segment	CNEL (dBA) 50 feet from Centerline of Outermost Lane					
	Existing No Project	Existing + Project	Increase over Existing No Project (dBA)	Cumulative Year 2040 No Project	Cumulative Year 2040 + Project	Increase over Cumulative Year 2040 No Project (dBA)
Willow Avenue—north of SR-4	60.2	60.5	0.3	62.6	62.9	0.3
Willow Avenue—SR-4 to East Church Driveway	63.3	63.6	0.3	67.8	68.0	0.2
Willow Avenue—east Church Driveway to middle Church Driveway	63.3	63.9	0.6	67.8	68.6	0.8
Willow Avenue—middle Church Driveway to west Church Driveway	63.2	63.9	0.7	67.8	68.6	0.8
Willow Avenue—west Church Driveway to Palm Avenue	63.3	63.9	0.6	67.8	68.6	0.8
Willow Avenue—Palm Avenue to I-80	60.3	61.2	0.9	65.7	65.9	0.2
Palm Avenue—Willow Avenue to Sycamore Avenue	63.2	63.3	0.1	64.8	64.8	0.0
SR-4—east of I-80	75.8	75.8	0.0	75.8	75.8	0.0
Note: SR-4 year 2040 projections assume same as current modeled traffic volumes since this roadway is already operating at maximum peak hour reasonable free-flow vehicles per lane per hour. Sources: Traffic data obtained from Caltrans Traffic Census Program 2016 Traffic Volumes data; FirstCarbon Solutions, 2018.						

The results show that projected traffic noise levels along Willow Avenue adjacent to the project site would range up to 68.6 dBA CNEL as measured at 50 feet from the centerline of the nearest travel lane under the loudest modeled traffic conditions. These noise levels are within the City’s normally acceptable range of up to 70 dBA CNEL for new commercial land use development. Therefore, implementation of the project would not expose persons to traffic noise levels in excess of acceptable standards, and traffic noise impacts would be less than significant.

Noise impacts to off-site receptors associated with project-related vehicle trips are analyzed in the “substantial permanent increase” impact discussion below.

Operational/Stationary Source Noise Impacts

Less than significant impact. A significant impact would occur if the proposed project's stationary noise sources would result in an exceedance of the City's maximum allowable noise level standards at adjacent residential uses. For example, daytime noise levels generated by stationary noise sources are not to exceed an hourly average of 50 dBA L_{eq} , or a maximum level of 70 dBA L_{max} , as measured at the receiving noise-sensitive land use. The nighttime standards for stationary noise sources are an hourly average of 50 dBA L_{eq} , or a maximum level of 65 dBA L_{max} , as measured at any receiving residential land use.

New stationary noise sources associated with implementation of the project would include new mechanical ventilation systems, parking lot activities, and car wash operations.

Mechanical Equipment Operations

New stationary noise sources associated with implementation of the project would include new mechanical equipment, such as exterior heating, ventilation, and air conditioning (HVAC) systems. At the time of preparation of this analysis, details of mechanical ventilation systems were not available; therefore, a reference noise level for typical HVAC systems was used.

Noise levels from typical rooftop mechanical ventilation equipment range up to approximately 60 dBA L_{eq} at a distance of 25 feet. Proposed HVAC systems could be located as close as 440 feet from the nearest off-site sensitive receptor—the closest residential land use south of the project site on Azalea Court. At this distance, noise generated by proposed HVAC systems would be expected to attenuate to less than 35 dBA L_{eq} as measured at the nearest off-site sensitive receptor. These noise levels are below the City's non-transportation exterior noise level standards for receiving residential land uses. Therefore, noise levels from new stationary noise sources would be considered a less than significant impact.

Parking Lot Activities

Typical parking lot activities, including people conversing, doors shutting, or vehicles idling, generate noise levels of approximately 60 dBA to 70 dBA L_{max} at 50 feet. These activities are expected to occur intermittently throughout the day, as visitors and employees arrive and leave the site.

The nearest off-site sensitive receptor would be the daycare facility located north of the project site, approximately 185 feet from the nearest acoustic center of parking lot activity. At this distance, maximum noise levels from parking lot activity could range up to approximately 58 dBA L_{max} at the nearest façade of this receptor. The nearest off-site residential receptors would be the single-family residential units located south of the project site approximately 450 feet from the nearest acoustic center of parking lot activity. At this distance, maximum noise levels from parking lot activity could range up to approximately 51 dBA L_{max} at the closest residential property line. Neither of these noise levels would exceed the City's nighttime maximum noise level performance standard of 65 dBA L_{max} . (The nighttime standard is the most restrictive applicable standard.) Therefore, the impact of noise produced by project-related parking lot activities on sensitive off-site receptors would be less than significant.

Car Wash Operations

The proposed car wash would have four self-service bays and two automated bays. Typically, the loudest noise levels associated with a car wash facility are from automated dryer/blower operations. At the time of this analysis, it has not been determined if the project would include automated dryer/blowers; nevertheless, noise impacts from this potential stationary noise source are analyzed.

At a distance of 40 feet from an exit tunnel of a car wash facility, where the dryer/blower operates, typical noise levels range from 79 to 82 dBA L_{max} when blowers are in full operation. The closest sensitive receptor to the proposed car wash would be the daycare facility, located approximately 215 feet from the nearest bay where blowers could be located. At this distance, during daytime hours of operation, this receptor would be exposed to noise levels of approximately 67 dB L_{max} . This noise level would not exceed the City's applicable daytime maximum noise level performance standard of 70 dBA L_{max} . Only the daytime standard is applicable for this closest receptor location, since the receiving land use is not occupied during the nighttime hours.

The closest residential land uses are the single-family residential units located south of the project site approximately 430 feet from the proposed car wash facility. At this distance, and assuming a direct line of sight to the car wash bay where automated dryer/blowers might operate, the loudest carwash operational noise would attenuate to below 62 dB L_{max} at the nearest receiving property line. This noise level would not exceed the City's applicable nighttime maximum noise level performance standard of 65 dBA L_{max} . Therefore, the impact of noise produced by project-related car wash activities on sensitive off-site receptors, both residential and non-residential, would be less than significant.

Overall, noise levels from potential operational/stationary sources would not exceed the City's applicable noise performance standards. Project impacts would be less than significant.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less than significant impact. Groundborne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. Vibrating objects in contact with the ground radiate vibration waves through various soil and rock strata to the foundations of nearby buildings. When assessing annoyance from groundborne noise, vibration is typically expressed as root mean square velocity in units of decibels of 1 micro-inch per second. To distinguish vibration levels from noise levels, the unit is written as "VdB." Human perception to vibration starts at levels as low as 67 VdB and sometimes lower. Annoyance due to vibration in residential settings starts at approximately 70 VdB. Common sources of groundborne vibration include construction activities such as blasting, pile driving and operating heavy earthmoving equipment. Construction vibration impacts on building structures are generally assessed in terms of peak particle velocity (PPV). Typical vibration source levels from construction equipment are shown in Table 31.

Table 31: Vibration Levels of Construction Equipment

Construction Equipment	PPV at 25 Feet (inches/second)	RMS Velocity in Decibels (VdB) at 25 Feet
Water Trucks	0.001	57
Scraper	0.002	58
Bulldozer—small	0.003	58
Jackhammer	0.035	79
Concrete Mixer	0.046	81
Concrete Pump	0.046	81
Paver	0.046	81
Pickup Truck	0.046	81
Auger Drill Rig	0.051	82
Backhoe	0.051	82
Crane (Mobile)	0.051	82
Excavator	0.051	82
Grader	0.051	82
Loader	0.051	82
Loaded Trucks	0.076	86
Bulldozer—Large	0.089	87
Caisson drilling	0.089	87
Vibratory Roller (small)	0.101	88
Compactor	0.138	90
Clam shovel drop	0.202	94
Vibratory Roller (large)	0.210	94
Pile Driver (impact-typical)	0.644	104
Pile Driver (impact-upper range)	1.518	112
Source: Compilation of scientific and academic literature, generated by FTA and FHWA.		

Propagation of vibration through soil can be calculated using the vibration reference equation of:

$$PPV = PPV_{ref} * (25/D)^n \text{ (in/sec)}$$

Where:

PPV = reference measurement at 25 feet from vibration source

D = distance from equipment to property line

n = vibration attenuation rate through ground

According to Chapter 12 of the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (2006), an “n” value of 1.5 is recommended to calculate vibration propagation through typical soil conditions.

The FTA has established industry accepted standards for vibration impact criteria and impact assessment. These guidelines are published in its Transit Noise and Vibration Impact Assessment document (FTA 2006). The FTA guidelines include thresholds for construction vibration impacts for various structural categories, as shown in Table 32.

Table 32: Federal Transit Administration Construction Vibration Impact Criteria

Building Category	PPV (in/sec)	Approximate VdB
I. Reinforced—Concrete, Steel or Timber (no plaster)	0.5	102
II. Engineered Concrete and Masonry (no plaster)	0.3	98
III. Non Engineer Timber and Masonry Buildings	0.2	94
IV. Buildings Extremely Susceptible to Vibration Damage	0.12	90

Source: FTA, 2006.

Of the variety of equipment that is expected to be used during construction, the large vibratory rollers that would be used in the site preparation phase of construction would produce the greatest groundborne vibration levels. Small vibratory rollers produce groundborne vibration levels ranging up to 0.110 inch per second (in/sec) peak particle velocity (PPV) at 25 feet from the operating equipment.

The closest structure to the construction footprint is the daycare/school building to the north, located approximately 140 feet from the nearest on-site location where the largest heavy construction equipment would operate. At this distance, construction-related groundborne vibration levels could range up to 0.008 PPV from the operation of a small vibratory roller. This is below the industry standard vibration damage criterion of 0.3 PPV for this type of structure, a building of engineered concrete and masonry construction.

The closest residential facade of this structure is located approximately 425 feet from the nearest on-site location where the largest heavy construction equipment would operate. At this distance, construction-related groundborne vibration levels could attenuate to below 0.001 PPV from the operation of a small vibratory roller. This is below the industry standard vibration damage criteria of 0.2 PPV for this type of structure, a building of non-engineered timber and masonry. Therefore, construction-related groundborne vibration impacts on existing off-site land uses would be less than significant.

Upon completion of construction, the project would not include any permanent sources of groundborne vibrations. The proposed auto shop commercial retail structure would be located approximately 80 feet from the center of the adjacent railroad line located south of the project site. The project final pad elevation of this structure would be several feet above the adjacent railroad tracks. This portion of the rail line experiences, on average, fewer than 30 train passings per day. As

such, the FTA vibration impact criterion for commercial land uses is 83 VdB. Therefore, because of distance, the change in elevation, and the number of train passings per day, groundborne vibration levels from adjacent railroad activity would be below the operational vibration impact criterion of 83 VdB for receiving commercial land uses. As such, implementation of the proposed project would not expose persons within the project vicinity to excessive groundborne vibration levels. Therefore, project-related groundborne vibration impacts would be considered less than significant.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

No impact. Long-term noise impacts generated by new projects are considered significant if: (1) the noise level increase is 5 dBA L_{dn} or greater and the future noise level is less than 60 dBA L_{dn} ; or (2) the noise level increase is 3 dBA L_{dn} or greater and the future noise level is 60 dBA L_{dn} or greater. Primary new permanent noise sources associated with implementation of the project would be project related traffic and new stationary noise sources such as new mechanical ventilation systems.

As shown in Table 30, the greatest increase in traffic noise levels along modeled roadway segments in the project vicinity would be 0.9 dBA CNEL, with implementation of the project. This is well below the 3 dBA increase that is considered to be perceptible in outdoor environments, and well below a 5 dBA or greater increase that would be considered substantial. Therefore, project-related traffic would not result in a substantial permanent increase in existing ambient noise levels along any roadway segment in the project vicinity, and project-related traffic noise impacts on off-site sensitive land uses would be less than significant.

As shown in the stationary-source noise impact discussion under Impact 12a), noise levels from project-related stationary noise sources such as operation of the car wash facility could range up to 67 dB L_{max} at the nearest off-site sensitive receptors. These noise levels are below the measured ambient noise levels recorded on the project site, as shown in Table 27. In addition, they are below the existing traffic noise levels at the nearest off-site receptors along Willow Avenue shown in Table 30. Therefore, implementation of the project would result in a less than significant permanent increase in noise levels existing without the project.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than significant impact. As addressed in Impact 12a), project-related construction activities could result in potential single event noise exposure causing intermittent noise nuisance at the closest noise-sensitive land uses surrounding the project site. However, the effect on longer-term (hourly or daily) ambient noise levels would be small and would not be expected to result in a perceptible increase in ambient noise levels at off-site receptors in the project vicinity. In addition, compliance with City's construction noise standards (including best management noise reduction practices and restrictions on permissible hours of construction) would ensure potential construction noise impacts are less than significant.

- e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No impact. As noted in Section 8, Hazards and Hazardous Materials, the nearest public airport to the project site is Buchanan Field in Concord, located approximately 11 miles to the east. The project site is located outside the 60 dBA CNEL airport noise contours of this airport. While aircraft noise is occasionally audible on the project site from aircraft flyovers, aircraft noise associated with nearby airport activity would not expose people residing or working in the project area to excessive noise levels. Therefore, no impacts associated with public airport noise would occur.

- f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No impact. As noted in Section 8, Hazards and Hazardous Materials, there are no private airstrips in the vicinity of the project site. This condition precludes the possibility of the project creating aviation safety hazards for people residing or working in the area. No impact would occur.

Mitigation Measures

None.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
13. Population and Housing <i>Would the project:</i>				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Evaluation

Would the project:

- a) **Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

Less than significant impact. The proposed project would develop approximately 148,591 square feet of self-storage and automobile service commercial uses on the project site. The storage facility would consist of approximately 130,730 square feet, and the automotive service center would total approximately 17,861 square feet. Using a standard estimate of 1 job per 500 square feet, it is estimated that the automotive service center would employ approximately 36 workers. Self-storage facilities employ far fewer workers; an online search indicated that storage facilities typically employ 3 or 4 workers on average. For this analysis, it is conservatively assumed that four workers would be employed at the storage facility. The total number of workers on the project site, therefore, is estimated to be 40.

The California Employment Development Department indicates that the Contra Costa County labor force totaled 1,157,100 as of September 2017; 24,100 were unemployed as of January 2017. This indicates that there is a large enough pool of labor in Contra Costa County to fill the project's employment opportunities such that it would be unlikely that a substantial number of people would relocate to the City of Hercules. Additionally, the proposed project would not develop residential uses, other than the manager's residence for the self-storage facility, and therefore would not directly facilitate substantial population growth. Impacts would be less than significant.

- b) **Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?**

No impact. The project site does not presently contain any dwelling units. This condition precludes the possibility of displacement of existing housing. No impacts would occur.

- c) **Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?**

No impact. The project site does not presently contain any dwelling units. This condition precludes the possibility of displacement of persons. No impact would occur.

Mitigation Measures

None.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
14. Public Services <i>Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:</i>				
a) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Evaluation

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

a) Fire protection?

Less than significant impact. The proposed project would develop approximately 148,591 square feet of new commercial uses on the project site. As noted in Section 8, Hazards and Hazardous Materials, the project site is located approximately 0.54 mile from Hercules Fire Station No. 76 of the Rodeo-Hercules Fire Protection District. According to the City of Hercules General Plan, the response time goal of the District is to reach an emergency scene within 5 minutes 90 percent of the time. Given the fire station's proximity to the project site, the response time would be within the response time goal, and, therefore, no new or expanded fire protection facilities would be required. The City requires new development to pay impacts fees that, in part, would pay for new or expanded fire facilities should they be required in the future. Impacts would be less than significant.

b) Police protection?

Less than significant impact. The Hercules Police Department serves a community of approximately 19.98 square miles and over 25,000 people. As the project site is located approximately 0.40 mile from the Hercules Police Department building, it is expected that emergency calls from the project site would be responded to within the 4 to 7 minutes typical for emergency calls, as noted in the Hercules General Plan EIR. Moreover, land uses such as self-storage facilities and automotive service facilities typically do not generate substantial demand for police services, as they typically include

security measures such as gates and alarms and therefore are not as attractive targets for crime as other land uses. The City requires new development to pay impacts fees that, in part, would pay for new or expanded police facilities should they be required in the future. Impacts would be less than significant.

c) Schools?

Less than significant impact. The proposed project includes one residential unit for the manager of the self-storage facility with no restriction on children. Such a limited residential use would generate a negligible number of potential students. This precludes the need for new or expanded park facilities. As such, impacts would be less than significant.

d) Parks?

No impact. Since only a limited residential use is proposed for the self-storage facility, the project would create a negligible new demand for park facilities. This precludes the need for new or expanded park facilities. No impacts would occur.

e) Other public facilities?

No impact. Since only a limited residential use is proposed for the self-storage facility, the proposed project would create a negligible new demand for other public facilities such as libraries. This precludes the need for new or expanded library or other public facilities. No impacts would occur.

Mitigation Measures

None.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
15. Recreation				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Evaluation

- a) **Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?**

No impact. The proposed project would develop approximately 148,591 square feet of new commercial uses on the project site. No residential uses are proposed other than a manager's quarters for the self-storage facility. As such, the project would not create a new demand for park facilities. This precludes the need for new or expanded park facilities. No impact would occur.

- b) **Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?**

No impact. The proposed project does not include any new park or recreation facilities. This precludes the possibility of physical impacts on the environment from the construction of such facilities. No impact would occur.

Mitigation Measures

None.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
16. Transportation/Traffic <i>Would the project:</i>				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Environmental Evaluation

The transportation analysis in this section is based on the Transportation Impact Analysis (TIA) prepared by TJKM, dated February 2018. Appendix G contains a copy of the TIA.

Project impacts related to motor vehicle traffic are evaluated by determining the number of vehicle trips the project is expected to generate and the distribution of these new trips to the surrounding roadway system based on existing or anticipated travel patterns specific to the project. Then, an analysis is conducted on the impact the project traffic would have on critical intersections and roadway segments. The TIA in Appendix G provides detailed information on the analysis of project traffic impacts.

Roadway Network

Existing roadways in the project vicinity include:

- **State Route 4 (SR-4)**, also known as the John Muir Parkway, is an east-west, four-lane freeway north of the project site. SR-4 intersects the I-80 freeway to the west of the project site. Access to and from the project site from westbound SR-4 is via an existing on-and off-ramp to Willow Avenue north of the project site. An additional eastbound access point to SR-4 is provided via Sycamore Avenue.
- **Willow Avenue** is an arterial street that provides direct access to the project site, and is a designated Truck Route. Adjacent to the project site, Willow Avenue operates in an east/west direction, with one motor vehicle lane per direction, before transitioning to a north/south direction with two motor vehicle lanes per direction to the north of its overcrossing of SR-4.
- **Sycamore Avenue** is a multi-lane arterial street that intersects Willow Avenue to the west of the project site, just east of I-80, and connects with Palm Avenue, just south of the railroad tracks that border the project site. Sycamore Avenue is primarily oriented in an east/west direction, roughly parallel with Willow Avenue, and provides access to the residential communities south of the project site.
- **Palm Avenue** is a north-south, two-lane street that connects Willow Avenue with Sycamore Avenue. It passes underneath the BNSF railroad tracks that border the project site.

Study Intersections

For this project, the TIA evaluated impacts on ten existing intersections that would likely be affected by project traffic:

1. Willow Avenue/Viewpointe Boulevard-Canterbury
2. Willow Avenue/SR-4 westbound off-ramp
3. Willow Avenue/SR-4 westbound on-ramp
4. Willow Avenue/Palm Avenue
5. I-80 and SR-4 ramps/Willow Avenue
6. Willow Avenue/Sycamore Avenue
7. Palm Avenue/Sycamore Avenue
8. Willow Avenue/West Church Driveway
9. Willow Avenue/Middle Church Driveway
10. Willow Avenue/East Church Driveway

Existing Intersection Conditions

Conditions were evaluated based on the Level of Service (LOS) methodology. LOS is a qualitative index with a rating scale running from A to F, with LOS A indicating no congestion, and LOS F indicating unacceptable congestion and delay. The City of Hercules strives to maintain LOS D operations at signalized intersections, with the exception of San Pablo Avenue where LOS E is the threshold.

Table 33 summarizes morning (AM) and evening (PM) peak-hour LOS at the 10 TIA intersections under Existing Conditions. Each of the intersections operates at an acceptable LOS under Existing Conditions. The TIA also analyzed existing traffic conditions related to the church north of the project site. This analysis is available in the TIA in Appendix G.

Table 33: Level of Service Analysis—Existing Conditions

Intersection	Control Type ¹	AM Peak Hour		PM Peak Hour	
		Average Delay ²	LOS ³	Average Delay ²	LOS ³
Viewpointe Blvd-Canterbury & Willow Avenue	AWSC	18.4	C	15.5	C
SR-4 Westbound Off-ramp & Willow Avenue	AWSC	14.2	B	13.7	B
Palm Avenue & Willow Avenue	AWSC	24.2	C	19.9	C
SR-4 Eastbound/I-80 Northbound Off-Ramp & Willow Avenue	Side-street Stop	9.4	A	10.5	B
Sycamore Avenue & Willow Avenue	Signal	27.5	C	27.1	C
Sycamore Avenue & Palm Avenue	AWSC	21.2	C	16.7	C
Willow Avenue & Church Driveway West	Side-street Stop	15.0	C	14.7	B
Willow Avenue & Church Driveway Middle	Side-street Stop	<10.0	A	<10.0	A
Willow Avenue & Church Driveway East	Side-street Stop	15.7	C	14.8	B
Notes: ¹ Signal = signalized intersection; AWSC = all-way stop-sign controlled; Worst approach delay for is presented for side-street stop controlled intersections (also frequently referred to as Two-way Stop-controlled intersections). ² Average intersection delay expressed in seconds per vehicle for signalized intersections. Worst approach delay for is presented for stop controlled intersections. ³ LOS = Level of Service					

Existing Transit Facilities

The primary transit provider in the area is Western Contra Costa County Transit Authority (WestCAT), which provides the following public transit service at the Hercules Transit Center on Willow Avenue, approximately 0.35 mile west of the project site:

- Local routes 10, 11, 12, and 15 provide weekday service with 30- to 60-minute headways on weekdays. Local routes 11 and 19 provide weekend service with 40- to 75-minute headways.
- Regional routes C3 and 30Z provide weekday service with 30- to 80-minute headways.
- BART station routes JL, JR, JX, and JPX provide 10- to 75-minute headways on weekdays. Routes JL and JR provide 40- to 60-minute headways on weekends.
- Transbay route LYNX provides weekday service with 15- to 95-minute headways.

Bicycle Facilities

Existing bikeways on Willow Avenue include a short Class II bike lane segment on eastbound Willow Avenue, adjacent to the Hercules Transit Center, which does not extend to the project site. To the north of SR-4, Willow Avenue operates in a north/south direction, and a northbound Class II bicycle lane is provided. Near the project site, a Class I multi-use trail is provided on the northeast side of Refugio Valley Road. Class II bike lanes are also provided on two segments of Sycamore Avenue, one between San Pablo Avenue and South Front Street (along both directions of Sycamore Avenue) and one from Refugio Valley Road to the east (along both directions of Sycamore Avenue).

Planned bicycle facilities in the vicinity, identified in the Contra Costa Countywide Bicycle and Pedestrian Plan (CCTA 2009) include:

- Class II bike lanes on Willow Avenue between Sycamore Avenue and the westbound SR-4 ramps. Funding for the new facilities has not been identified, and there is no timeline for their installation.
- Class I bike path on Sycamore Avenue between San Pablo Avenue and Refugio Valley Road.

Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, curb ramps, and pedestrian signal heads (at signalized intersections). An existing sidewalk is provided on the south side of Willow Avenue, immediately bordering the project site, from the SR-4 ramps to the intersection with Palm Avenue. The Hercules Transit Center is located to the west of the project site on Willow Avenue, between Sycamore and Palm Avenue, but sidewalks are not yet provided on that segment of Willow Avenue. North of SR-4, Willow Avenue provides sidewalks on both sides.

Traffic Impact Analysis Methodology

Vehicle Trip Generation

The vehicle trip generation rates were obtained from the reference Trip Generation, 9th Edition, published by the Institute of Transportation Engineers (ITE). Based on the applicable rates for each of the proposed land use types, the project is forecasted to generate 1,709 daily vehicle trips, 138 AM peak-hour vehicle trips and 190 net PM peak-hour vehicle trips, as summarized in Table 34.

Table 34: Project Vehicle Trip Generation

Land Use (ITE Code)	Size (approx.)	Daily		AM Peak Hour					PM Peak Hour				
		Rate	Trips	Rate	In %	In	Out	Total	Rate	In %	In	Out	Total
Mini-Warehouse (151)	125.865 ksf	2.50	315	0.14	55%	10	8	18	0.26	50%	17	16	33
U-Haul Truck Rental (N/A)	8 trucks	3.32	27	0.51	48%	2	2	4	0.38	56%	2	1	3
Apartment (220)	1 dwelling	6.65	7	0.51	20%	0	1	1	0.62	32%	0	1	1
Tire Store (848)	9.555 ksf	24.87	238	2.89	63%	18	10	28	4.15	43%	17	23	40
Automobile Care Center (942)	2.734 ksf	23.72	65	2.25	66%	4	2	6	3.11	48%	4	5	9
Car Wash—Self Service (947)	4 stalls	108.00	432	5.54	50%	11	11	22	5.54	50%	11	11	22
Car Wash—Automated (948)	2 stalls	312.71	625	29.66	51%	30	29	59	41.00	51%	42	40	82
Total		—	1,709	—	—	75	63	138	—	—	93	97	190
Note: ksf = 1,000 square feet Source: ITE Trip Generation Manual, 9 th Edition, 2012.													

Pass-by Trips

Retail commercial uses often attract a significant amount of “pass-by” trips, by motorists already traveling on the adjacent major street and stopping for services along the way. Among the proposed land uses on-site, car wash facilities typically attract pass-by trips, with a trip reduction of about 15 percent for trips attributable to the car wash, which would equate with roughly a 9 percent reduction in total daily vehicle trips to/from the site. Existing traffic volumes on this segment of Willow Avenue are relatively low near the project site—fewer than 850 vehicles during the PM peak hour—and will still be relatively low under Near-Term Conditions, before increasing under Cumulative Conditions with the planned relocation of the SR-4 eastbound ramps. Therefore, to provide a conservative assessment, taking into account the relatively low existing and background volumes, the traffic LOS analysis did not apply a trip generation credit to reflect pass-by trips.

Sunday Peak Hour Traffic Generation

ITE Trip Generation does not provide comprehensive trip generation data for the Sunday peak hour. However, given the proposed uses, the peak-hour volume on a Sunday may be similar to the weekday PM peak hour. Based on review of the existing Sunday peak-hour traffic described in the TIA, the addition of project traffic would not significantly affect Sunday peak conditions. This is because (1) most of the church traffic primarily enters the church site via the westernmost church driveway and exits via Palm Avenue; (2) the volume of inbound and outbound church traffic at the two easternmost church driveways are relatively low during the Sunday peak hour; and (3) total traffic volumes during the Sunday peak hour are 20 percent lower than the weekday peak hour.

Project Vehicle Assignment

Figures 4A and 4B in the TIA in Appendix G illustrate the project vehicle trip assignment to/from each study intersection under Existing Conditions, based on the current roadway network and relative proximity to adjacent neighborhoods and regional freeways. Under Cumulative (Year 2040) conditions, the vehicle trip assignment will differ with a larger portion of trips to/from the east, with the planned relocation of the SR-4 eastbound ramps at Willow Avenue to a location east of the project site on Willow Avenue.

Significance Criteria

Consistent with the significance thresholds identified in the Hercules Safeway Transportation Impact Analysis (August 2017), the following thresholds will be considered in the evaluation of the project from a transportation perspective:

- Would the operations of a signalized study intersection decline from LOS D or better to LOS E or F, based on the HCM LOS method, with the addition of project traffic?
- Would the operations of an unsignalized study intersection decline from an overall acceptable level to an overall unacceptable level with the addition of project traffic, and would the installation of a traffic signal at an unsignalized intersection, based on the Manual on Uniform Traffic Control Devices (MUTCD) Peak Hour Signal Warrant (Warrant 3), be warranted?
- Would the project increase traffic volumes on a street beyond the expected capacity limits and would the increase in traffic be noticeable to existing residents?

- Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?
- Would the project substantially increase traffic hazards to motor vehicles, bicycles, or pedestrians due to a design feature (e.g., sharp curves or dangerous intersections) that does not comply with Caltrans design standards or incompatible uses (e.g., farm equipment)?
- Would construction traffic from the project have a significant, though temporary, impact on the environment, or would project construction substantially affect traffic flow and circulation, parking, and pedestrian safety?
- Would the project fundamentally conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle routes)?

In addition, the updated Hercules General Plan Circulation Element (January 2018) adopted by the City of Hercules in the first quarter of 2018 includes the addition of Multi-modal Transportation Service Objectives. Based on the new Multi-modal Transportation Service Objectives for arterial streets, the following thresholds will be considered when evaluating impacts to Willow Avenue:

- Would the Project be located on an arterial street that does not include bicycle facilities within the public right-of-way, **and** would the Project generate motor vehicle trips entering or exiting the site that would include conflicting movements within bicyclists?
- Would the Project be located on an arterial street with a transit route serves more than 500 daily riders, at a location that is more than one mile from a transit stop that includes a shelter, **and** would the Project generate potential transit demand?
- Would the Project be located on an arterial street at a location that does not include controlled pedestrian crossing opportunities within 250 feet of the nearest stop, and would the Project generate potential transit demand?

Would the project:

- a) **Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?**

Existing plus Project Conditions

Less than significant impact with mitigation incorporated. The TIA evaluated the effect of the project with the addition of project trips based on Existing Conditions. Table 35 summarizes peak-hour levels of service at the TIA intersections under Existing plus Project Conditions. As shown in Table 35, LOS at the all-way stop-controlled intersection of Willow Avenue and Palm Avenue would degrade from C to E during the AM peak hour, primarily due to the relatively high volume of westbound traffic during the AM peak hour sharing a single westbound approach lane. All other intersections and driveways would operate at an acceptable LOS during both peak hours, and the Willow Avenue/Palm Avenue intersection would operate at an acceptable LOS during the PM peak hour.

Table 35: Level of Service Analysis—Existing plus Project Conditions

Intersection	Control Type ¹	Peak Hour	Existing Conditions		Existing plus Project Conditions		
			Average Delay ²	LOS ³	Average Delay ²	LOS ³	Significant LOS Impact?
Viewpointe Blvd-Canterbury & Willow Avenue	AWSC	AM	18.4	C	19.4	C	No
		PM	15.5	C	15.6	C	No
SR-4 WB Off-ramp & Willow Avenue	AWSC	AM	14.2	B	15.3	C	No
		PM	13.7	B	14.7	B	No
Palm Avenue & Willow Avenue	AWSC	AM	24.2	C	39.7	E	Yes
		PM	19.9	C	33.7	D	No
SR-4 EB/I-80 NB Off-Ramp & Willow Avenue	Side-street Stop	AM	9.4	A	10.3	B	No
		PM	10.5	B	11.6	B	No
Sycamore Avenue & Willow Avenue	Signal	AM	27.5	C	28.1	C	No
		PM	27.1	C	27.9	C	No
Sycamore Avenue & Palm Avenue	AWSC	AM	21.2	C	22.7	C	No
		PM	16.7	C	18.3	C	No
Willow Avenue & Church Driveway West	Side-street Stop	AM	15.0	C	16.2	C	No
		PM	14.7	B	16.5	C	No
Willow Avenue & Church Driveway Middle	Side-street Stop	AM	<10	A	<10	A	No
		PM	<10	A	<10	A	No
Willow Avenue & Church Driveway East—Proposed Project Driveway	Side-street Stop	AM	15.7	C	29.8	D	No
		PM	14.8	B	26.1	D	No
Notes: ¹ Signal = signalized intersection; AWSC = all-way stop-sign controlled. Worst approach delay for is presented for side-street stop controlled intersections (also frequently referred to as Two-way Stop-controlled intersections). ² Average intersection delay expressed in seconds per vehicle for signalized intersections. Worst approach delay for is presented for stop controlled intersections. ³ LOS = Level of Service Bold indicates intersections that operate at deficient LOS.							

Installation of a traffic signal at Palm Avenue/Willow Avenue is warranted under Existing Conditions (without the proposed project) based on the Manual on Uniform Traffic Control Devices (MUTCD) Peak Hour Signal Warrant (Warrant 3). However, signalization of this intersection is planned to occur concurrently with the planned restriping and/or widening of the westbound approach to provide a second westbound lane on Willow Avenue approaching Palm Avenue (within 200 feet including the transition from one to two westbound lanes) to provide separate left-turn and through lanes in westbound direction, with a storage length of at least 25 feet in the added lane. As a near-term mitigation, implementation of MM TRANS-1 would ensure that LOS at the intersection would operate at an acceptable LOS by City standards, thereby reducing impacts to a level that would be less than significant.

Near-Term plus Project Conditions

Less than significant impact with mitigation incorporated. This scenario evaluates traffic conditions based on the addition of anticipated traffic from approved, but not yet constructed or fully occupied, developments in the area, added to existing traffic volumes. Near-term traffic growth was derived from the Hercules Safeway Project Transportation Impact Assessment, prepared for the City of Hercules in August 2017. Table 36 summarizes peak-hour levels of service at the TIA intersections under Near-Term plus Project Conditions.

Table 36: Level of Service Analysis—Near-Term plus Project Conditions

Intersection	Control Type ¹	Peak Hour	Near-Term Conditions		Near-Term plus Project Conditions		
			Average Delay ²	LOS ³	Average Delay ²	LOS ³	Significant LOS Impact?
Viewpointe Blvd-Canterbury & Willow Avenue	AWSC	AM	20.8	C	22.5	C	No
		PM	16.4	C	17.2	C	No
SR-4 WB Off-ramp & Willow Avenue	AWSC	AM	18.0	C	20.4	C	No
		PM	14.6	B	15.7	C	No
Palm Avenue & Willow Avenue	AWSC	AM	43.8	E	>50.0	F	Yes
		PM	23.6	C	39.1	E	Yes
SR-4 EB/I-80 NB Off-Ramp & Willow Avenue	Side-street Stop	AM	10.3	B	11.0	B	No
		PM	11.0	B	12.1	B	No
Sycamore Avenue & Willow Avenue	AWSC	AM	27.6	C	28.4	C	No
		PM	29.7	C	30.6	C	No
Sycamore Avenue & Palm Avenue	Signal	AM	30.8	D	33.9	D	No
		PM	22.4	C	34.4	D	No
Willow Avenue & Church Driveway West	Side-street Stop	AM	16.6	C	18.1	C	No
		PM	15.9	C	17.7	C	No
Willow Avenue & Church Driveway Middle	Side-street Stop	AM	<10.0	A	<10.0	A	No
		PM	<10.0	A	<10.0	A	No
Willow Avenue & Church Driveway East—Proposed Project Driveway	Side-street Stop	AM	17.7	C	39.0	E	No*
		PM	16.2	C	32.4	D	No

Notes:

¹ Signal = signalized intersection. AWSC = all-way stop-sign controlled. Worst approach delay for is presented for side-street stop controlled intersections (also frequently referred to as Two-way Stop-controlled intersections).

² Average intersection delay expressed in seconds per vehicle for signalized intersections. Worst approach delay for is presented for stop controlled intersections.

³ LOS = Level of Service

Bold indicates intersections that operate at deficient LOS.

* LOS under Near-Term Plus Project Conditions reflects anticipated delay to outbound traffic exiting the project driveway via a single-lane stop-sign controlled approach to Willow Avenue. LOS impact is less than significant because intersection volumes will not warrant signalization.

As shown in Table 36, under Near-Term plus Project conditions, impact findings remain consistent with the findings under Existing plus Project Conditions, in that a significant impact was identified at the Willow Avenue and Palm Avenue intersection, while impacts were not significant at the other intersections and driveways (see Note in Table 28 on the Church Driveway East for explanation of no significant impact). As a near-term mitigation, implementation of MM TRANS-1 would ensure that LOS at the intersection would operate at an acceptable LOS by City standards, thereby reducing impacts to less than significant.

Additionally, implementation of MM TRANS-1 shall be accompanied by modification of the southeast corner curb radius to accommodate right turns by fire trucks from northbound Palm Avenue to eastbound Willow Avenue, thereby ensuring that provision of the left-turn lane will not impede emergency access.

Cumulative plus Project Conditions

Less than significant impact. This scenario evaluates the project impact on Cumulative (Year 2040) Conditions. Planned improvements at study intersections were derived from the Hercules Circulation Element update. Key improvements that are envisioned for construction before 2040 include:

- Planned installation of traffic signals at the Willow Avenue intersections with Viewpoint Boulevard, SR-4 Westbound Ramps, SR-4 Eastbound Ramps, Palm Avenue, Sycamore Avenue, and at the intersection of Sycamore Avenue and Palm Avenue.
- Planned relocation of the SR-4 Eastbound On/Off Ramps to/from Willow Avenue, that currently terminate west of Palm Avenue, to a location immediately east of the project site.
- Planned widening of Willow Avenue (to two lanes per direction between SR-4 and Sycamore Avenue, matching the provision of lanes currently provided on segments of Willow Avenue to the north of SR-4).

Forecasted traffic volumes under Cumulative (No Project) Conditions were determined from the traffic forecasts and LOS analysis prepared for the Hercules Circulation Element. Table 37 summarizes peak-hour levels of service at the TIA intersections under Cumulative Conditions, with and without the project. For this scenario, the SR-4 EB Off-Ramp and Willow Avenue intersection studied under Existing and Background Conditions was replaced by the SR-4 EB Ramps (Relocated) and Willow Avenue intersection.

Additionally, the proposed project will not preclude the potential future construction of a full interchange at Willow Avenue and Highway 4. Nor will it preclude the potential for a future widening of Willow Avenue to 4 lanes, which is consistent with the improvements shown in the City's recently updated Circulation Element (2018).

Table 37: Level of Service Analysis—Cumulative (Year 2040) plus Project Conditions

Intersection	Control Type ¹	Peak Hour	Cumulative (2040) Conditions		Cumulative (2040) Plus Project Conditions		
			Average Delay ²	LOS ³	Average Delay ²	LOS ³	Significant LOS Impact?
Viewpointe Blvd-Canterbury & Willow Avenue	Signal	AM	6.7	A	6.7	A	No
		PM	5.7	A	5.7	A	No
SR-4 WB Off-ramp & Willow Avenue	Signal	AM	6.9	A	7.0	A	No
		PM	6.9	A	7.0	A	No
Palm Avenue & Willow Avenue	Signal	AM	8.3	A	8.5	A	No
		PM	14.8	B	16.6	B	No
Sycamore Avenue & Willow Avenue	Signal	AM	28.8	C	29.4	C	No
		PM	28.9	C	29.6	C	No
Sycamore Avenue & Palm Avenue	Signal	AM	5.3	A	5.3	A	No
		PM	5.2	A	5.3	A	No
Willow Avenue & Church Driveway West	Side-street Stop	AM	12.8	B	14.7	B	No
		PM	33.1	D	36.0	E	No*
Willow Avenue & Church Driveway Middle	Side-street Stop	AM	<10.0	A	<10.0	A	No
		PM	<10.0	A	<10.0	A	No
Willow Avenue & Church Driveway East—Proposed Project Driveway	Side-street Stop	AM	12.7	B	18.8	C	No
		PM	37.1	E	>50.0	F	No*
SR-4 EB Ramps (Relocated) & Willow Avenue*	Signal	AM	3.9	A	4.2	A	No
		PM	8.5	A	8.8	A	No

Notes:

* Replaces SR-4 EB/I-80 NB Off-Ramp & Willow Avenue intersection

¹ Signal = signalized intersection. Worst approach delay for is presented for side-street stop controlled intersections (also frequently referred to as two-way stop-controlled intersections).

² Average intersection delay expressed in seconds per vehicle for signalized intersections. Worst approach delay for is presented for stop controlled intersections.

³ LOS = Level of Service

Bold indicates intersections that operate at deficient LOS.

* LOS under Cumulative Plus Project Conditions reflects anticipated delay to outbound traffic exiting the project driveways via a single-lane stop-sign controlled approach to Willow Avenue. LOS impact is less than significant because intersection volumes will not warrant signalization.

Under this scenario, each of the signalized intersections would operate acceptably. Unacceptable LOS would be limited to just two stop-sign controlled study intersections—the proposed project driveway intersection with Willow Avenue, and the existing church driveway intersection with Willow Avenue just east of Palm Avenue. At both of the locations with failing LOS under Cumulative (Year 2040) plus Project conditions, side-street approach volumes would not trigger a signal warrant. The anticipated volume approaching Willow Avenue via a driveway would be less than 100 peak-hour vehicles exiting the project site, and the recent counts indicate a smaller number (fewer than 30 vehicles) exit the church via multiple driveways during the AM peak hour from the project site. Therefore, since the failing LOS at signalized study intersections would occur with a volume that would not warrant signal intersection, LOS impacts under Cumulative (Year 2040) Conditions would be less than significant at all study intersections.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Less than significant impact. The Contra Costa Transportation Authority (CCTA) serves as the congestion management agency for Contra Costa County. The CCTA's current Congestion Management Program was adopted in 2015. Within the Congestion Management Program, there are Action Plans for specific regions that identify multi-modal traffic service objectives for specific freeways and roadway segments. The West County Action Plan for Routes of Regional Significance-Update 2014 includes the City of Hercules. Freeway segments and roadways in the TIA area designated as Routes of Regional Significance include SR-4, I-80, and San Pablo Avenue.

The Congestion Management Program requires an analysis of any project that is expected to generate more than 100 peak-hour vehicle trips. Based on the project trip generation detailed in Chapter 3 of the TIA, the project would not increase vehicle trip generation such that it would meet the 100 peak-hour threshold for requiring additional analysis. Impacts related to the Congestion Management Program would be less than significant.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No impact. As described in Section 8, Hazards and Hazardous Materials, the nearest public airport is Buchanan Field in Concord, approximately 11 miles to the east. The nearest airport that provides regularly scheduled passenger air service is Oakland International Airport, approximately 20 miles to the south. Given their distances, the project is not expected to have an effect on air traffic patterns at these airports. The proposed commercial uses would serve primarily local residents and are not expected to generate any increase in passenger air traffic. The project would have no impact related to air traffic.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less than significant impact with mitigation incorporated. Development of the project site would add sidewalks and a new driveway where none currently exists. The City has design standards

intended to ensure that access to and from a development site would be safe and efficient. The proposed land uses on the project site would generate traffic consistent with traffic associated with other land uses in the area, and would not include farm equipment or similar vehicles.

As noted in the TIA, because of the existing curve and change in elevation, there is limited site visibility for westbound motorists on Willow Avenue when making a left-turn into the project driveway, as they may not be able to view on-coming motorists traveling in the eastbound (uphill) direction. Sight-distance requirements are based on roadway design speed; the Caltrans Highway Capacity Manual (Chapter 100, Topic 100 Design Speed; December 30, 2015) states that the design speed should be based on the operating speed. The operating speed is typically defined as the 85th percentile speed, which is also used for the purpose of establishing speed limits. The TIA indicated that, based on a speed of 35 miles per hour (consistent with the speed limit), the recommended stopping sight distance should be approximately 250 feet, with 300 feet of visibility being desirable. At a speed of 45 miles per hour, the recommended stopping sight distance should be 360 feet. As shown on Exhibit 13, the line of sight distance near the proposed driveway would be approximately 430 feet, which would exceed both recommended and desirable line-of-sight distances.

The sight distance applicable to the inbound left-turn is 285 feet, based on 35-mile-per-hour roadway design speeds, or 365 feet, based on 45-mile-per-hour speed. The updated site plan with mitigation (as shown in Appendix H of the TIA) indicates that 435 feet of sight distance would be provided (applicable to the inbound left-turn). However, the line of sight as shown in Appendix H of the TIA could be impeded by the roadway edge on the north side of Willow Avenue (including vegetation) and change in elevation of the roadway itself as it rounds the curve. Subject to confirmation by the project engineer during preparation of final engineering drawings for the project, the applicable sight distance for permissive left-turns inbound to the project site is anticipated to exceed the minimum requirement of 285 feet (based on 35-mile-per-hour speeds) and 365 feet (based on 45-mile-per-hour speed).

Implementation of MM TRANS-3 requires that prior to the issuance of occupancy permits, the applicant shall provide engineering drawings for review by City staff confirming the provision of adequate stopping sight distance at the project driveway, and adequate sight-distance for permissive left-turns relevant to the westbound left-turn into the project site; and the applicant shall ensure that adequate maintenance is provided to ensure that vegetation growth will not impeded the necessary sight distance.

Therefore, with implementation of MM TRANS-3, the project shall provide adequate sight distance applicable to permissive left-turn movements inbound to the project site.

e) Result in inadequate emergency access?

Less than significant impact with mitigation incorporated. The project site would be served by a driveway of adequate width to accommodate emergency vehicles. In addition, emergency access would be provided between the self-storage facility and the automotive service center to further facilitate emergency vehicle circulation. MM TRANS-1 requires that provision of a westbound left-turn lane at the intersection of Willow Avenue and Palm Avenue and shall be accompanied by

modification of the southeast corner curb radius to accommodate right turns by trucks from northbound Palm Avenue to eastbound Willow Avenue, thereby ensuring that provision of the left-turn lane will not impede emergency access. As such, adequate emergency access would be provided in accordance with California Fire Code requirements and impacts would be less than significant with implementation of MM-TRANS-1.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Less than significant impact with mitigation incorporated. Public Transit services to Hercules are provided by the Western Contra Costa Transit Authority (WestCAT). WestCAT Routes 11 and 30Z pass by the project site along Willow Avenue, and the Hercules Transit Center is slightly more than 0.35 mile to the west. The project would not disrupt existing public transit services in the area, as it is not expected to obstruct Willow Avenue during construction and once project work is completed.

The project would be located on an arterial street that does not include bicycle facilities within the public right-of-way, therefore potentially conflicting with the Multimodal Transportation Service Objectives contained in the Hercules Circulation Element update. The project would generate motor vehicle trips entering and exiting the site that would include conflicting movements with bicyclists traveling eastbound on Willow Avenue. In addition, outbound motor vehicle trips traveling west on Willow Avenue would conflict with some westbound bicycle movements approaching the intersection of Willow Avenue with Palm Avenue. Therefore, the provision that the applicant shall ensure there is adequate room for future Class II bike lanes in the ultimate widened configuration of Willow Avenue bordering the project site is recommended, and the project impact to bicycle conditions under Existing plus Project Conditions would be less than significant with the recommended MM TRANS-2. The updated site plan with mitigation (including MM TRANS-2, provision that the applicant shall ensure there is adequate room for future Class II bike lanes in the ultimate widened configuration of Willow Avenue bordering the project site) is shown in Appendix G.

Sidewalks currently exist along the Willow Avenue frontage of the project site. The project would maintain this sidewalk; thus, the project would not reduce transportation options for pedestrians in the area. Overall, project impacts on alternative modes of transportation would be less than significant.

Mitigation Measures

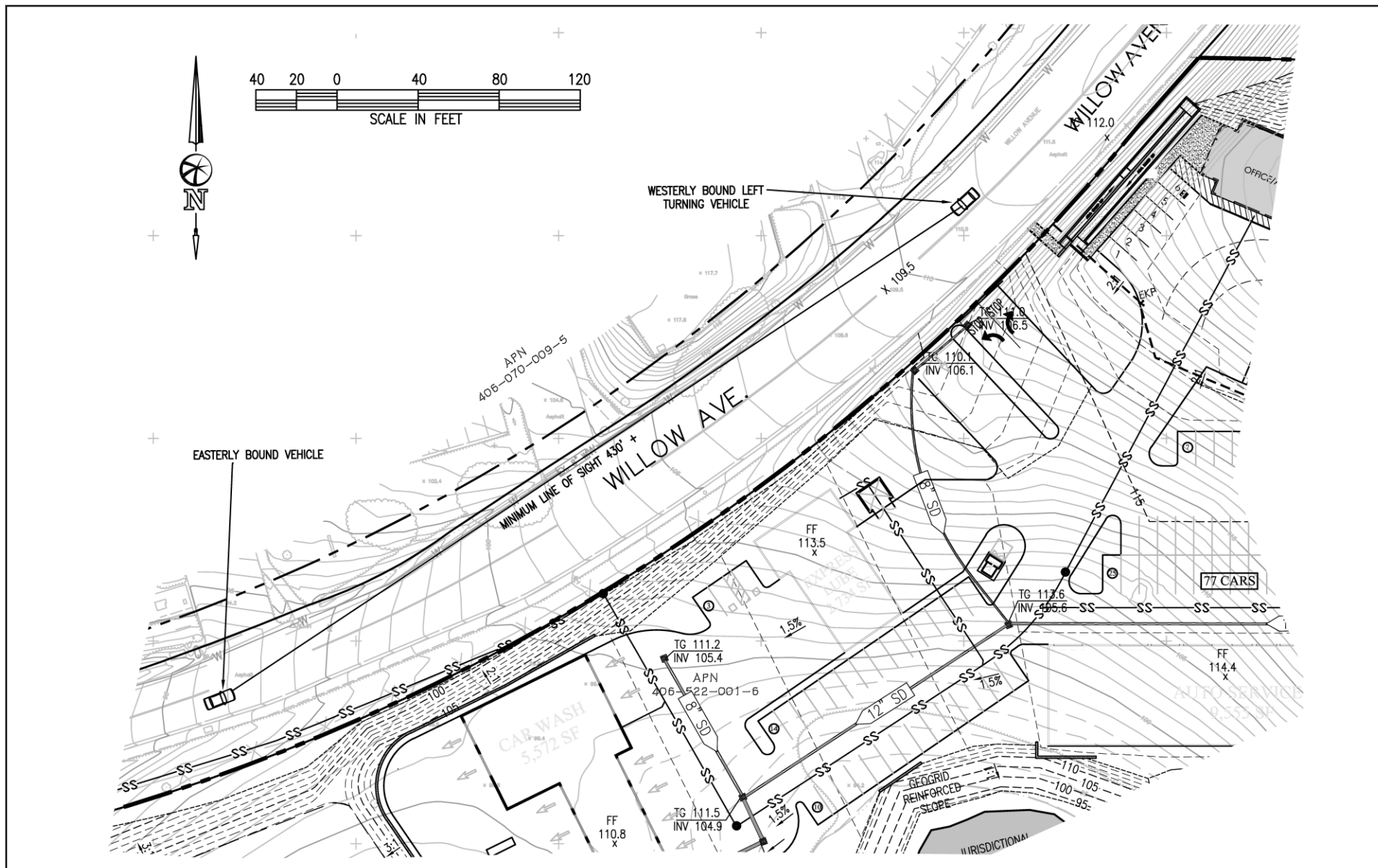
MM TRANS-1 Prior to the issuance of occupancy permits, the applicant shall make the following improvement:

- Restripe and widen Willow Avenue on the south side approaching Palm Avenue and the Willow/Palm Intersection to include a second westbound through lane to provide separate left-turn and through/right-turn lanes in the westbound direction, and modification of the southeast corner curb radius to accommodate right turns by trucks from northbound Palm Avenue to eastbound Willow Avenue,

thereby ensuring that provision of the left-turn lane will not impede emergency access.

- MM TRANS-2** Prior to the issuance of construction permits, the applicant shall ensure there is adequate room for future Class II bike lanes in the ultimate widened configuration of Willow Avenue bordering the project site.
- MM TRANS-3** Prior to the issuance of occupancy permits, the applicant shall provide engineering drawings for review by City staff confirming the provision of adequate stopping sight distance at the project driveway, and adequate sight-distance for permissive left-turns relevant to the westbound left-turn into the project site. Following project completion, the applicant shall ensure that adequate maintenance is provided to ensure that vegetation growth will not impeded the necessary sight distance.

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Source: Bellecci & Associates, Inc., February 2018.

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Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
17. Utilities and Service Systems <i>Would the project:</i>				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Evaluation

Would the project:

- a) **Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?**

Less than significant impact. The City is served by the Pinole-Hercules Wastewater Treatment Plant. The Pinole-Hercules Plant has a treatment capacity of 4.06 million gallons per day (mgd) dry weather flow with 1.79 mgd allocated to Pinole and 2.27 mgd allocated to Hercules. The treatment plant has a capacity of 10.3 mgd wet weather flow. Water service is provided by East Bay Municipal Utility District (EBMUD). Using EBMUD's water consumption rate of 58 gallons per capita daily for commercial retail land uses (EBMUD 2015) and the proposed project's estimated 40 workers, the proposed project would demand approximately 2,320 gallons of water daily (846,800 gallons of

water annually), which is equivalent to 2.6 acre-feet annually. Using a standard industry assumption that wastewater effluent represents 90 percent of domestic water consumption, the proposed project would generate approximately 2,088 gallons of effluent per day, or approximately 0.002 mgd. This would represent less than 1 percent of the available treatment capacity. Thus, the proposed project would not exceed the wastewater treatment requirements that apply to the Regional Wastewater Treatment Facility. Impacts would be less than significant.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less than significant impact. As discussed under Impacts 17a and 17d, the proposed project can be served with potable water by EBMUD and wastewater service by Pinole-Hercules Wastewater Treatment Plant. There is no need to expand any existing treatment facilities. This precludes the possibility of physical impacts in this regard. Impacts would be less than significant.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less than significant impact. As part of the project, a detention basin would be installed in the far western portion of the site to capture runoff storm drainage. This facility would comply with storm drainage standards and regulations set forth by the City of Hercules and the Contra Costa Clean Water Program. Furthermore, construction of the basin would adhere to applicable regulations and mitigations as indicated in this document. As such, impacts would be less than significant.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Less than significant impact. As described under Impact 17a, the proposed project would demand approximately 2,320 gallons of water daily, or 2.6 acre-feet annually. Most of the water usage is anticipated to occur with the car wash. The project's estimated annual demand represents less than 1 percent of the total water supply in 2015. As such, sufficient water supplies from existing entitlements would be available to serve the project. In addition, as noted in Section 7, Greenhouse Gas Emissions, the project would be required under AB 2230 to utilize recycled water for 60% of outdoor water. Impacts would be less than significant.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less than significant impact. As noted under Impact 17a, the Pinole-Hercules Plant has a treatment capacity of 4.06 million gallons per day (mgd) dry weather flow and a capacity of 10.3 mgd wet weather flow. The proposed project is estimated to generate approximately 2,088 gallons of effluent per day, or approximately 0.002 mgd. This would represent less than 1 percent of the available treatment capacity. Thus, the proposed project would not exceed the wastewater treatment requirements that apply to the Regional Wastewater Treatment Facility. Impacts would be less than significant.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less than significant impact. The proposed project would develop approximately 148,591 square feet of self-storage and automobile service commercial uses on a currently vacant and undeveloped site. Standard construction waste generation rate for non-residential uses is 3.89 pounds per square foot; therefore, project construction would generate approximately 341.0 cubic yards of total construction waste. Using CalRecycle's rate of 10.53 pounds per employee daily and an estimated 40 workers, operational activities would generate 90.7 cubic yards annually.

Richmond Sanitary Service is the franchise hauler of solid waste materials generated in Hercules. Solid waste is hauled to the Golden Bear Transfer Station and transferred to the Keller Canyon Landfill in Contra Costa County. The Keller Canyon Landfill has 63.4 million cubic yards of remaining capacity. The proposed project's construction and operational solid waste would represent less than 1 percent of the remaining capacity at the Keller Canyon Landfill. Therefore, adequate landfill capacity is available to serve the project. Impacts would be less than significant.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

No impact. The City of Hercules and the solid waste hauler would ensure that developers of individual projects constructed on the project site would adhere to federal, state, and local solid waste regulations. Therefore, no impact would occur.

Mitigation Measures

None.

Environmental Issues	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
18. Mandatory Findings of Significance				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Environmental Evaluation

- a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

Less than significant impact with mitigation incorporated. Implementation of the proposed project, with implementation of MM BIO-1 and MM CUL-1 through MM CUL-3, would not substantially degrade the quality of the environment, substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory.

- b) **Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?**

Less than significant impact with mitigation incorporated. The project would result in potentially significant project-level impacts related to biological resources, cultural/tribal cultural resources, geology/soils, noise, and transportation/traffic. However, mitigation measures have been identified that would reduce each impact to a level of less than significant.

All other impacts of the project were determined either to have no impact or to be less than significant without the need for mitigation. Cumulatively, the project would not result in any significant impacts that would substantially combine with impacts of other current or probable future impacts. Therefore, the project, in conjunction with other future development projects, would not result in any cumulatively considerable impacts.

- c) **Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?**

Less than significant impact with mitigation incorporated. As described throughout the preceding environmental checklist, the project would not have any substantial environmental effects on human beings, either directly or indirectly. All impacts identified throughout this IS/MND either have been mitigated to less than significant levels or do not require mitigation. The proposed mitigation measures, once implemented, would ensure that no substantial adverse effects on human beings would result from the project. Impacts would be less than significant.

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SECTION 3: REFERENCES

- Bay Area Air Quality Management District (BAAQMD). 2016. Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines. January. Website: http://www.baaqmd.gov/~media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en.
- Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. May. Website: http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en.
- Bay Area Air Quality Management District (BAAQMD). 2017. Final 2017 Clean Air Plan. Adopted April 19.
- California Department of Conservation. 2013. Contra Costa County Williamson Act FY 2012/2013. Website: ftp://ftp.consrv.ca.gov/pub/dlrp/wa/Contra_Costa_12_13_WA.pdf. Accessed November 23, 2017.
- California Department of Conservation. 2016. Contra Costa County Important Farmland 2014. Website: <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2014/con14.pdf>. Accessed November 23, 2017.
- California Emergency Management Agency, California Geological Survey, and University of Southern California. 2009. Tsunami Inundation Map for Emergency Planning, Mare Island Quadrangle. July 31.
- City of Hercules. 1995. City of Hercules General Plan Land Use and Circulation Elements Update and Redevelopment Plan Amendments, Environmental Impact Report, Volume I: EIR Text. June 9.
- City of Hercules. 2015. City of Hercules Zoning Ordinance. Amended February 10.
- City of Hercules. 2017. Hercules Municipal Code, Title 4, Chapter 15—Removal of Mature Trees. Code current as of December 12.
- Contra Costa Clean Water Program. 2017. Stormwater C.3 Guidebook: Stormwater Quality Requirements for Development Applications (7th Edition). May 17.
- Contra Costa Transportation Authority. 2009. 2009 Contra Costa Countywide Bicycle and Pedestrian Plan. Adopted October.
- Contra Costa Transportation Authority. 2015. Update of the Contra Costa Congestion Management Program. Adopted December 16.
- East Bay Municipal Utility District. 2015. Urban Water Management Plan. November 23.
- ENGEO Incorporated. 2017. Preliminary Geotechnical Exploration, 1444 Willow Ave., Hercules, California. November 16.

References

- EP Environmental Service. 2016. Phase I Environmental Site Assessment of 1444 Willow Avenue, APN 406-522-001 & 406-522-004, Contra Costa County in Hercules, California. August 8.
- Federal Emergency Management Agency (FEMA). 2017. Flood Insurance Rate Map No. 06013C0044H. Effective date March 21.
- FirstCarbon Solutions. 2018. Phase I Cultural and Paleontological Resources Assessment, Willow Avenue Commercial Center Project Initial Study/Mitigated Negative Declaration, City of Hercules, Contra Costa County, California. January 31.
- Harris, Cyril M. 1998. Handbook of Acoustical Measurements and Noise Control.
- Natural Resources Conservation Service. 2017. Custom Soil Survey for Contra Costa County, California. November 22.
- Regional Water Quality Control Board (RWQCB), San Francisco Bay Region. 2015. Municipal Regional Stormwater NPDES Permit, NPDES Permit No. CAS612008. November 10.
- Sacramento Metropolitan Air Quality Management District (SMAQMD). 2015. SMAQMD Thresholds of Significance Table. Website: <http://www.airquality.org/LandUseTransportation/Documents/CH2ThresholdsTable5-2015.pdf>. Accessed November 2, 2016.

SECTION 4: LIST OF PREPARERS

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SECTION 5: MITIGATION MONITORING AND REPORTING PROGRAM

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Table 1: Willow Avenue Commercial Center Project Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
3. Air Quality					
MM AQ-1: In order to ensure all the impacts are less than significant, the project applicant shall: a) Ensure all off-road construction equipment greater than 50 horsepower must be equipped with engines meeting the EPA Tier IV emission standards; or b) Prior to issuance of grading permits, the project applicant shall submit a revised air quality emissions and health risk assessment modeling results demonstrating that the project-specific detailed construction equipment list to be used and the construction schedule to be followed by the general contractor would result in emissions below the BAAQMD’s air quality and health risk thresholds.	City Staff will confirm that all off-road construction equipment meets EPA Tier IV emission standards; or, the applicant will submit modeling memorandum ensuring emissions will be below the BAAQMD’s air quality and health risk thresholds.	Prior to the issuance of grading permits.	City of Hercules		
4. Biological Resources					
MM BIO-1: Prior to the start of construction activities, temporary fencing shall be installed around the wetland area. No construction equipment or activities, including the stockpiling of soils, shall be allowed within the fenced area. The temporary fencing shall be removed when construction activities are completed.	City Staff will visually verify that a fence has been installed.	Prior to issuance of grading permits.	City of Hercules		
5. Cultural Resources					
MM CUL-1: Because of the moderate potential for undiscovered cultural resources within the project area, a qualified archaeologist shall be present during the initial phase of ground disturbance and grading in order to check for the inadvertent exposure of cultural materials. The initial phase of ground disturbance shall be deemed the grading operation that includes removal of organic material along the surface of the site. For areas to be excavated and soil removed, the upper 3 feet of removals shall be deemed initial ground	City Staff will verify that the Applicant has hired a qualified archaeologist to be present during the initial phase of ground disturbance.	Prior to issuance of grading permits.	City of Hercules		

Table 1 (cont.): Willow Avenue Commercial Center Project Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
disturbance. On areas to receive fill, scarification and moisture conditioning occurring on the upper 12 to 18 inches shall be deemed the initial ground disturbance. This may be followed by regular periodic or “spot-check” archaeological monitoring as needed by a full-time archaeological monitoring who meets the Secretary of Interior’s Professional Qualification Standards for archaeology, as well as a Tribal Cultural Monitor. If a potentially significant cultural resource is encountered during subsurface earthwork activities, all construction activities within a 100-foot radius of the find shall cease and workers should avoid altering the materials until the Archaeologist or Tribal Monitor has evaluated the situation and provided appropriate recommendations. Project workers shall not collect or remove any cultural resources. The Applicant shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Any previously undiscovered resources found during construction activities shall be recorded on appropriate Department of Parks and Recreation (DPR) forms and evaluated for significance in terms of CEQA criteria by a qualified archaeologist. Potentially significant cultural resources consist of but are not limited to stone, bone, glass, ceramics, fossils, wood, or shell artifacts, or features including hearths, structural remains, or historic dumpsites. If the resource is determined significant under CEQA, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan that will capture those categories of data for which the site is significant in accordance with Section 15064.5 of the CEQA Guidelines. The archaeologist shall also perform appropriate technical analyses, prepare a comprehensive report complete with methods, results, and recommendations, and provide for the permanent curation of the recovered resources. The report shall be submitted to the City of Hercules, the Northwest Information Center, and the State Historic Preservation Office (SHPO), if required.					

Table 1 (cont.): Willow Avenue Commercial Center Project Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
MM CUL-2: In the event that fossils or fossil-bearing deposits are discovered during construction activities, excavations within a 100-foot radius of the find shall be temporarily halted or diverted. The project contractor shall notify a qualified paleontologist to examine the discovery. The applicant shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. The paleontologist shall document the discovery as needed in accordance with Society of Vertebrate Paleontology standards and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction activities are allowed to resume at the location of the find. If the Applicant determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of construction activities on the discovery. The plan shall be submitted to the City of Hercules for review and approval prior to implementation, and the Applicant shall adhere to the recommendations in the plan.	Applicant will ensure that, in the event that fossils or fossil-bearing deposits, work is stopped within a 100-foot radius and a qualified paleontologist is contacted.	Ongoing during construction.	Applicant/City of Hercules		
MM CUL-3: In the event of the accidental discovery or recognition of any human remains, CEQA Guidelines Section 15064.5, Health and Safety Code Section 7050.5, and Public Resources Code Sections 5097.94 and 5097.98 must be followed. If during the course of project development there is accidental discovery or recognition of any human remains, the following steps shall be taken: 1. There shall be no further excavation or disturbance within 100 feet of the remains until the County Coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required. If	Applicant will ensure that, in the event accidental discovery or recognition of any human remains, work is stopped within a 100-foot radius and the County Coroner is contacted.	Ongoing during construction.	Applicant		

Table 1 (cont.): Willow Avenue Commercial Center Project Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
<p>the coroner determines the remains to be Native American, the coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours, and the NAHC shall identify the person or persons it believes to be the most likely descendant (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work within 48 hours, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98.</p> <p>2. Where the following conditions occur, the landowner or his or her authorized representative shall reburial the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the most likely descendant or on the project site in a location not subject to further subsurface disturbance:</p> <ul style="list-style-type: none"> • The NAHC is unable to identify a most likely descendant or the most likely descendant failed to make a recommendation within 48 hours after being notified by the commission. • The descendant identified fails to make a recommendation. • The landowner or his authorized representative rejects the recommendation of the descendant, and mediation by the NAHC fails to provide measures acceptable to the landowner. <p>Additionally, California Public Resources Code Section 15064.5 requires the following relative to Native American remains:</p> <p>When an initial study identifies the existence of, or the probable likelihood of, Native American remains within a project, a lead agency shall work with the appropriate Native Americans as identified by the NAHC, as provided in Public</p>					

Table 1 (cont.): Willow Avenue Commercial Center Project Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
Resources Code Section 5097.98. The applicant may develop a plan for treating or disposing of, with appropriate dignity, the human remains, and any items associated with Native American burials with the appropriate Native Americans as identified by the NAHC.					
6. Geology and Soils					
MM GEO-1: Prior to final project approval, the project applicant shall incorporate earthwork, grading, foundation support, and other recommendations regarding project design and construction in the Preliminary Geotechnical Evaluation prepared by ENGEO Incorporated on November 16, 2017.	Applicant will incorporate Preliminary Geotechnical Evaluation recommendations, City Staff will verify.	Prior to issuance of grading permits.	City of Hercules		
MM GEO-2: Prior to final project approval, the project applicant shall incorporate recommendations regarding expansive soils in the Preliminary Geotechnical Evaluation prepared by ENGEO Incorporated on November 16, 2017. As noted in Section 5.7 of the Preliminary Geotechnical Evaluation, the following alternatives shall be incorporated to reduce the effects of expansive soils on building foundation and improvements: <ul style="list-style-type: none"> Construct the upper 24 inches of the building pads extending at least 10 feet laterally beyond building areas with selected fill derived from excavations in lower plasticity bedrock. Because of the distribution of expansive materials on-site, selective grading may be difficult to perform. Alternatively, if selective grading cannot be performed building pads shall be constructed with imported non-expansive fill. Lime treat the upper 24 inches of the building pad to reduce the expansion potential of the on-site soil. 	Applicant will incorporate Preliminary Geotechnical Evaluation recommendations, City Staff will verify.	Prior to issuance of grading permits.	City of Hercules		

Table 1 (cont.): Willow Avenue Commercial Center Project Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
7. Greenhouse Gas Emissions					
MM GHG-1: Prior to the issuance of the final Certificate of Occupancy, the project applicant shall provide documentation demonstrating that it has purchased carbon offsets from local or regional registries in the amount of 250 MT CO2e per year for the expected determined life of the project (20-years). The chosen registry must have California Air Pollution Control Officers Association (CAPCOA)-approved protocols.	Applicant will provide documentation demonstrating purchase of carbon offsets, per the mitigation measure.	Prior to issuance of the final Certificate of Occupancy.	City of Hercules		
16. Transportation/Traffic					
MM TRANS-1: Prior to the issuance of occupancy permits, the applicant shall make the following improvement: <ul style="list-style-type: none">Restripe and widen Willow Avenue on the south side approaching Palm Avenue and the Willow/Palm Intersection to include a second westbound through lane to provide separate left-turn and through/right-turn lanes in the westbound direction, and modification of the southeast corner curb radius to accommodate right turns by trucks from northbound Palm Avenue to eastbound Willow Avenue, thereby ensuring that provision of the left-turn lane will not impede emergency access.	Applicant will make, or provide a bond, for the improvement.	Prior to the issuance of occupancy permits.	City of Hercules		
MM TRANS-2: Prior to the issuance of construction permits, the applicant shall ensure there is adequate room for future Class II bike lanes in the ultimate widened configuration of Willow Avenue bordering the project site.	Applicant will provide engineering drawings for review by City Staff.	Prior to the issuance of construction permits.	City of Hercules		
MM TRANS-3: Prior to the issuance of occupancy permits, the applicant shall provide engineering drawings for review by City staff confirming the provision of adequate stopping sight distance at the project driveway, and adequate sight-distance for permissive left-turns relevant to the westbound left-turn into the project site. Following project completion, the	Applicant will provide engineering drawings for review by City Staff.	Prior to the issuance of occupancy permits.	City of Hercules		

Table 1 (cont.): Willow Avenue Commercial Center Project Mitigation Monitoring and Reporting Program

Mitigation Measures	Method of Verification	Timing of Verification	Responsible for Verification	Verification of Completion	
				Date	Initial
applicant shall ensure that adequate maintenance is provided to ensure that vegetation growth will not impeded the necessary sight distance.					

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