

# Draft Environmental Impact Report National City Bayfront Projects & Plan Amendments

UPD# EIR-2018-232; SCH# 2018121054



VOLUME V of V

## Appendices L through N



September 2021



**PORT** of  
**SAN DIEGO**  
Environment



**DRAFT ENVIRONMENTAL IMPACT REPORT**  
**for the**  
**National City Bayfront Projects & Plan Amendments**

**UPD # EIR-2018-232**  
**State Clearinghouse (SCH) #2018121054**

**Volume V of V**  
**Appendices L through N**

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**September 2021**

Appendix L  
**Transportation Impact Study (TIS), Vehicle Miles  
Traveled – SB 743 Analysis**

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# **Transportation Impact Study**

## **Vehicle Miles Traveled – SB 743 Analysis**

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### **National City Bayfront Projects**

#### **Draft Report**

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Appendix A SANDAG SB-743 VMT Analysis Results

## 1.0 Introduction

The purpose of this Transportation Impact Study (TIS) is to identify and document any significant transportation related impacts associated with the development of the proposed National City Bayfront Projects (Proposed Project), and to recommend mitigation measures for identified impacts, as necessary. Additionally, this report evaluates the effect in which the Proposed Project will have on its surrounding local transportation network and determines if additional improvements to the transportation network will be needed.

### 1.1 Project Description

The San Diego Unified Port District (District), the City of National City (City), GB Capital Holdings, LLC (GB Capital), and Pasha Automotive Services (Pasha), as co-applicants and project proponents, are each proposing various components which constitute the National City Bayfront Projects. Each component of the Proposed Project is outlined below: The regional location of the proposed project is displayed in **Figure 1-1**.

#### DEVELOPMENT PROJECTS

- *Bayshore Bikeway Component* - Construction and operation of Segment 5 of the Bayshore Bikeway. Segment 5 of the Bayshore Bikeway would provide a bicycle facility along McKinley Avenue, the southern border of the City Program parcels, Marina Way, and the former railroad right-of-way. The bikeway would convert McKinley Way to a one-way southbound roadway to accommodate the proposed bicycle facility, and also modify the East Harbor Drive/Civic Center Drive intersection to remove the southbound free right-turn movement.
- *City Program - Development* - Construction and operation of hotel, restaurant, retail, and/or a combination of tourist/visitor-serving commercial development north of Bay Marina Drive. The two City-owned blocks that are currently vacant and between I-5 and Harrison Avenue could be developed with hotel, restaurant, retail, and/or some combination of tourist/visitor serving commercial uses. For purposes of this analysis, a potential development scenario associated with the City Program would be a hotel with 150 rooms, along with 15,500 square feet of restaurant space, and 12,000 square feet of retail space.
- *GB Capital Component* - Construction and operation of up to four hotels, a recreational vehicle (RV) park, modular cabins, dry boat storage, and an expanded marina. The following quantities of each use that are anticipated to generate traffic are:
  - Construct up to 463 hotel rooms with approximately 16,500 square feet of retail space.
  - Develop up to 70 sites at the proposed RV resort. 135 sites would be constructed in Phase 1 of the project; however, it may be necessary to remove up to 65 RV spaces to accommodate the hotels.
  - Develop approximately 40,000 square feet of dry boat storage, which would be capable of storing up to 210 boats.
  - Develop up to 60 modular cabins, which would serve as independent accommodations with kitchenettes, bathrooms, and sleeping quarters.
  - Construct and operate a 10,000 square foot of administration/recreation building. This building will be an ancillary use to support the employees and visitors of the RV resort and marina.
  - Construct marina facilities (e.g. moorings, docks, etc.) to accommodate up-to 95 boats

- Remove the reduced use restrictions of the National City Aquatic Center to provide for more flexibility and allow visitors to arrive using their vehicles, instead of via bus only as specified in the current Coastal Development Permit (CDP). This component is already included in the base model assumptions, so vehicle trips associated with the removal of the CDP is not included to avoid double counting of the National City Aquatic Center.

In addition, this component would implement a new road realignment for Marina Way, public access/view corridors, and bicycle and pedestrian paths.

- *Pasha Road Closures Component* - Closure of Tidelands Avenue between Bay Marina Drive and West 32nd Street as well as West 28th Street between Tidelands Avenue and Quay Avenue and re-designation of the area to Marine-Related Industrial in the District's PMP. This improvement would not generate new traffic into the study area, but would alter traffic patterns and the closures would redistribute traffic onto parallel roadways in the study area.
- *Pasha Rail Improvement Component* - Construction and operation of a rail connector track and storage track. This improvement would not generate new traffic or alter traffic patterns in the study area.

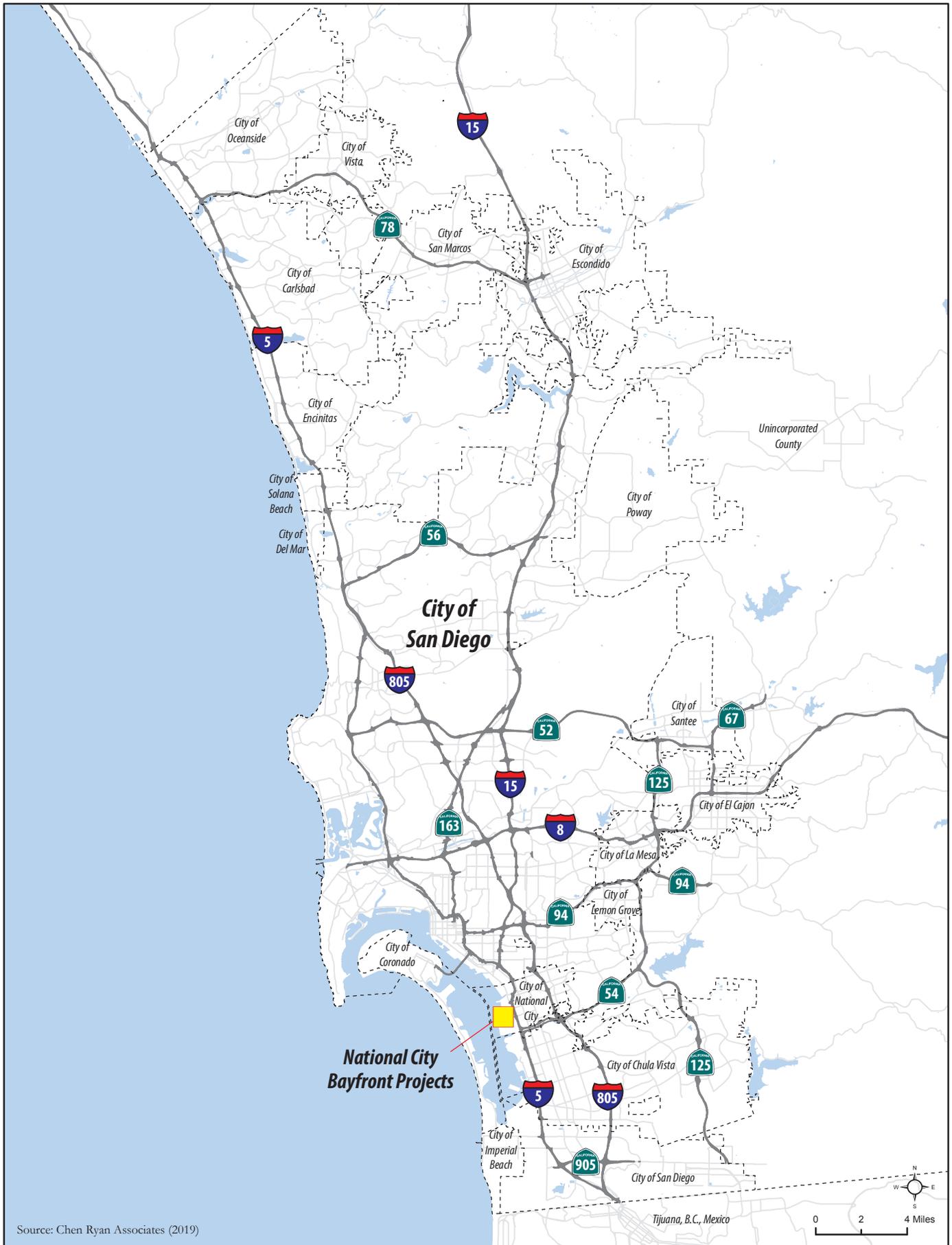
#### DISTRICT PUBLIC WORKS

- *Marina Balanced Land Use Plan (Balanced Plan)* covers an approximate 60.9 acre that proposes the following transportation improvements:
  - Marina Way Realignment will reconfigure from its existing alignment to form a curve that rounds the west when traveling toward the Balanced Plan area. This improvement does not affect the roadway operations analysis.
  - Add a connector rail track to provide an additional point of connection between the existing rail yard along the west side of Marina Way and the east side of the National Distribution Center, north of the Balanced Plan area, to the existing rail line north of the existing West 32<sup>nd</sup> Street and west of Tidelands Avenue. This improvement would not generate new traffic or alter traffic patterns in the study area.
  - Close West 32nd Street east of Tidelands Avenue to allow for the realignment of Marina Way. This improvement does not affect the roadway operations analysis.
  - Close the southern half of the existing Goesno Place south of West 32nd Street to vehicular traffic and relocate the northern portion of the road to the east. This improvement does not affect the roadway operations analysis.
  - Shift the southern terminus of Tidelands Avenue to the east to accommodate a reconfigured historical first point of rest. This improvement does not affect the roadway operations analysis.
  - Pepper Park Expansion would increase by over 2.54 acres, from approximately 5.22 acres to 7.76 acres.

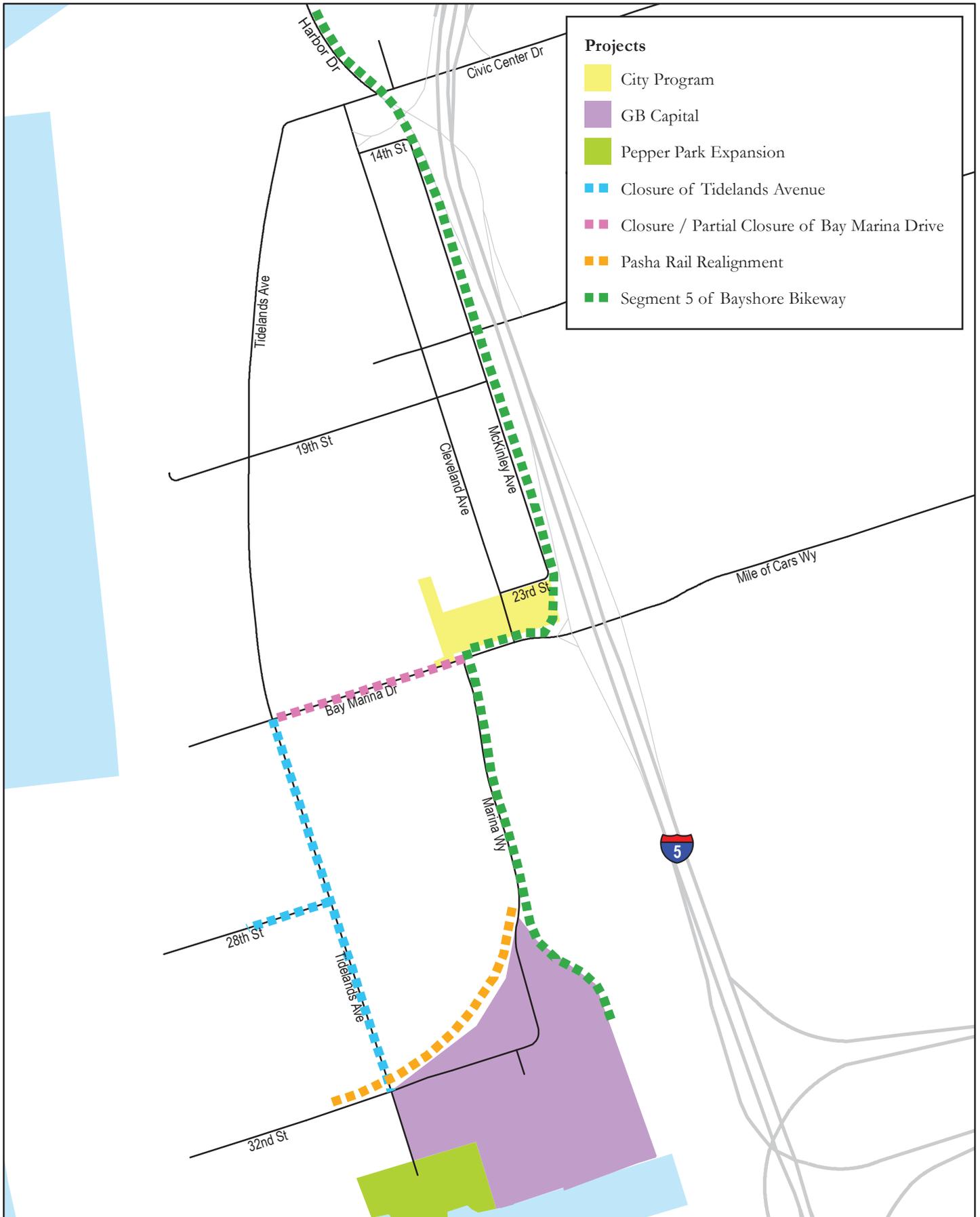
#### CLOSURE & PARTIAL CLOSURE OF BAY MARINA DRIVE

- *Closure of Bay Marina Drive* –Potentially close or narrow Bay Marina Drive west of Marina Way through vehicular traffic. This project component is intended to help reduce the number of trucks traveling through the Bay Marina Drive/Mile of Cars and I-5 freeway ramps.

Figure 1-2 displays the location of each of project components.



Source: Chen Ryan Associates (2019)



National City Bayfront Projects  
 Transportation Impact Study

Figure 1-2  
 Project Location

## 1.2 Project Trip Generation

The three trip generators of the project are the two Development Projects – City Program and GP Capital components and the District Public Works, which includes the Pepper Park Expansion. Segment 5 of the Bayshore Bikeway and the roadway closures (i.e. Tidelands Avenue and Bay Marina Drive) would cause redistribution of traffic volumes, but not generate new vehicle trips to the study area. Trip generation estimates for these projects were developed using trip generation rates outlined in the SANDAG *Not so Brief Guide to Vehicular Traffic Generation Rates* (April 2002); however, based on the anticipated operations of the boat storage under the GB Capital component, a modified trip rate was used for the marina. According to the project applicant, the boat storage would operate primarily as storage with infrequent and inconsistent use, hence, a modified rate from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10<sup>th</sup> Edition) was used for the marina land use. **Table 1.1** displays daily, as well as AM and PM Peak hour trip generations for the Total Bayfront project.

**Table 1.1 Total Bayfront Trip Generation**

Project	Land Use	Units	Trip Rate	ADT	AM Peak Hour				PM Peak Hour			
					%	Trips	In	Out	%	Trips	In	Out
<b>Development Projects</b>												
City Program	High Turnover Restaurant	15.5 ksf	160 / ksf	2,480	8%	199	100	99	8%	199	119	80
	Resort Hotel <sup>1</sup>	150 rooms	8 / room	1,200	5%	60	36	24	7%	84	34	50
	Specialty Retail	12 ksf	40 / ksf	480	3%	15	9	6	9%	44	22	22
	<b>TOTAL</b>			<b>4,160</b>		<b>274</b>	<b>145</b>	<b>129</b>		<b>327</b>	<b>175</b>	<b>152</b>
GB Capital <sup>4</sup>	Resort Hotel <sup>1</sup>	463 rooms	8 / room	3,704	5%	186	74	112	7%	261	208	53
	Recreational Vehicle (RV) <sup>2</sup>	70 sites	4 / site	280	4%	12	4	8	7%	23	16	7
	Specialty Retail	16.5 ksf	40 / ksf	660	3%	20	8	12	9%	60	48	12
	Modules	60 sites	4 / site	240	4%	10	6	4	8%	20	16	4
	Dry Boat Storage <sup>3</sup>	210 boat storage	1.48 / boat storage	311	3%	10	3	7	7%	22	13	9
	Marina	95 berths	4 / berth	380	3%	12	4	8	7%	27	16	11
<b>TOTAL</b>			<b>5,575</b>		<b>250</b>	<b>99</b>	<b>151</b>		<b>413</b>	<b>317</b>	<b>96</b>	
<b>DEVELOPMENT PROJECTS NET TOTAL</b>				<b>9,735</b>		<b>524</b>	<b>244</b>	<b>280</b>		<b>740</b>	<b>492</b>	<b>248</b>
<b>District Public Works</b>												

Project	Land Use	Units	Trip Rate	ADT	AM Peak Hour				PM Peak Hour			
					%	Trips	In	Out	%	Trips	In	Out
Pepper Park Expansion	City Parks	2.54 / acres	50 / acre	127	13%	17	9	8	9%	12	6	6
<b>DISTRICT PUBLIC WORKS NET TOTAL</b>				<b>127</b>		<b>17</b>	<b>9</b>	<b>8</b>		<b>12</b>	<b>6</b>	<b>6</b>
<b>TOTAL BAYFRONT NET NEW TRIPS</b>				<b>9,862</b>		<b>541</b>	<b>253</b>	<b>288</b>		<b>752</b>	<b>498</b>	<b>254</b>

Source: Chen Ryan Associates, October 2019

Notes:

KSF = Thousand Square Feet

<sup>1</sup>Resort Hotel cater to tourist and the vacation industry, often providing a wide variety of recreational facilities rather than the conventional business meeting spaces. Resort hotels are normally located in suburban or outlying locations.

<sup>2</sup>Campground trip rate used for Recreational Vehicles

<sup>3</sup>Dry boat storage is based on 50% of ITE’s Trip Generation Manual “Marina” trip rate. A reduced rate was applied since the boat storage would not be generating regular trips as would a Marina.

<sup>4</sup>The changes to the Aquatic Center would remove the restrictions of reduced travel to the site. This is already included in the base traffic volumes, and therefore, is not included in the net new traffic estimates.

As shown in the table, the Development Projects would generate a total of 9,735 daily weekday trips, with 524 occurring in the AM peak hour (244 inbound, 280 outbound) and 740 occurring in the PM peak hour (492 inbound, 248 outbound). The District Public Works component would generate a total of 127 daily weekday trips, with 17 occurring in the AM peak hour (9 inbound, 8 outbound) and 12 occurring in the PM peak hour (6 inbound, 6 outbound). Furthermore, the Total Bayfront project would generate a total of 9,862 daily weekday trips, with 541 occurring in the AM peak hour (253 inbound, 288 outbound) and 752 occurring in the PM peak hour (498 inbound, 254 outbound).

### 1.3 Project Setting

Access to the Proposed Project from the regional transportation network will be provided via Interstate 5, Cleveland Avenue, Tidelands Avenue, Marina Way, McKinley Avenue, Bay Marina Drive, Civic Center Drive, and 28<sup>th</sup> Street. These roadways will either provide a direct connection to Proposed Project, via project driveways or will provide a critical link between the Proposed Project and the regional transportation network. Descriptions of these transportation network facilities are described below:

#### North-South Facilities

*Interstate 5 (I-5)* is a north-south freeway immediately east of the study area. This freeway provides regional access to the NCMT. Access from I-5 to the study area is taken from the Bay Marina Drive/Mile of Cars interchange, and the Civic Center Drive/Harbor Driver interchange to the north.

*Cleveland Avenue* is a two-lane roadway that connects Civic Center Drive in the north to Bay Marina Drive to the south. It has a center-left-turn-lane and provides access to multiple industrial uses and small business. Parallel parking is provided on both sides of the roadway and the posted speed limit is 35 mile per hour (mph). Sidewalks are provided on both sides of the roadway. There are currently no bike or transit facilities along Cleveland Avenue.

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*Tidelands Avenue* is a four-lane undivided roadway with a posted speed limit of 35 mph. The roadway has a paved width of 62 feet. Parking is allowed on both sides of the roadway. Tidelands Avenue between Civic Center Drive and West 32<sup>nd</sup> Street provides Class II bicycle lanes on both sides of the roadway; towards the northern end of Tidelands Avenue near Civic Center Drive, a two-way Class IV cycle track exists on the west side of the road. Within the project study area, pedestrian facilities (sidewalks) are provided on both sides of the roadway. There are currently no transit facilities along Tidelands Avenue within the project study area.

*Marina Way* is a two-lane north-south roadway that connects Bay Marina Drive to the north to West 32<sup>nd</sup> Street to the south. It is generally an undivided roadway, but widens on the southern segment adjacent to Lot J, where it widens to a two-lane roadway with a center-turn lane and provides parallel parking on both sides of the roadway. A wide sidewalk currently exists on the eastside of the roadway, but not on the westside. There are currently no bike or transit facilities along Marina Way.

*McKinley Avenue* is a two-lane north south roadway that connects 14th Street to the north to West 23<sup>rd</sup> Street to the south. It is an undivided roadway that provides parking on both sides of the road. It has a posted speed limit of 25 mph, and currently does not include any bike or transit facilities along the roadway.

#### **East-West Facilities**

*Bay Marina Drive* is a four-lane roadway from Terminal Avenue in the west to Marina Way in the east, where it then widens to five lanes to the I-5 Southbound ramps. This roadway is generally undivided with short pockets of segments with painted or raised medians. Bay Marina Drive has a posted speed limit of 30 mph and has a paved width of 62 feet. Parking is not allowed on either side of the roadway between Haffley Avenue and I-5; however, parking is allowed on both sides of the roadway west of Haffley Avenue. Within the project study area, pedestrian facilities (sidewalks) are provided on both sides of the roadway but bicycle facilities are non-existent. There are currently no transit facilities along Bay Marina Drive within the project study area.

*Civic Center Drive* is an undivided two-lane roadway that connects Tidelands Avenue on the west to National City Boulevard in the east. It has a posted speed limit of 30 mph and on-street parallel parking is provided on both sides of the street. Within the study area, portions of sidewalks exist between Tidelands Avenue and East Harbor Drive.

*28th Street* is an undivided two-lane roadway with a posted speed limit of 35 mph. The roadway has a paved width of 45 feet. Parking is permitted on both sides of the roadway. West of Quay Avenue, 28th Street has sidewalk facilities on both sides of the roadway; however, between Quay Avenue and Tidelands Avenue, no sidewalk facilities are present. There are currently no bicycle or transit facilities along 28th Street within the project study area.

Figure 1-2 displays the transportation network around the Proposed Project site.

## 1.4 Report Organization

Following this Introduction chapter, this report is organized into the following sections:

- 2.0 *Analysis Methodology* – This chapter describes the methodologies and standards utilized to analyze and identify the transportation related impacts associated with the Proposed Project.
- 3.0 *Transportation Related Impacts and Mitigation* – This chapter derives and analyzes the projected Vehicle Miles Traveled (VMT) that will be generated by the Proposed Project. This chapter also identifies if the Proposed Project related VMT would create significant project related impact, as it relates to the standards outlined in the California Environmental Quality Act (CEQA). Finally, the chapter provides recommendations for mitigation measures to reduce the identified transportation related impacts to less than significant levels, and evaluates the feasibility of the proposed mitigation measures.

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## 2.0 Analysis Methodology and Threshold

This TIS was conducted in accordance with the California Environmental Quality Act (CEQA) Statutes and Guidelines.

### 2.1 Background (SB-743)

On September 27, 2013, Governor Edmund G. Brown, Jr. signed SB-743 into law, starting a process that is expected to fundamentally change the way transportation impact analysis is conducted under CEQA. Within the State's CEQA Guidelines, these changes will include elimination of auto delay, level of service (LOS), and similar measurements of vehicular roadway capacity and traffic congestion as the basis for determining significant impacts.

On December 2018, the Resources Agency certified and adopted the CEQA Guidelines update package, which included the California Natural Resources Agency Guidelines for the Implementation of the California Environmental Quality Act. As a result, the California Governor's Office of Planning and Research (OPR) updated and released the Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory) in December 2018. According to the updated guidelines, lead agencies will have until July 1, 2020 to comply with the updated CEQA revision.

### 2.2 Analysis Guidelines and Significance Thresholds

In response to the implementation of SB-743, the District is anticipated to adopt new transportation impact study guidelines and standards prior to the mandatory implementation of SB-743 (July 1, 2020). The SB-743 framework that is currently being developed for the Port Master Plan Update (PMPU) Environmental Impact Report (EIR) was also applied for this Proposed Project.

### 2.3 Analysis Methodology - CEQA

The following section describes the analysis methods outlined in OPR's *CEQA Guidelines* which transportation related impacts are analyzed and identified.

#### 2.3.1 Analysis Metrics

For land use development projects, OPR requires that the following two metrics be analyzed to determine if a project has a significant transportation related impact:

- *VMT/Capita*: Includes all vehicle-based person trips grouped and summed to the home location of individuals who are drivers or passengers on each trip. It includes both home-based and non-homebased trips. The VMT for each home is then summed for all homes in a particular census tract and divided by the population of that census tract to arrive at Resident VMT/Capita.
- *VMT/Employee*: Includes all vehicle-based person trips grouped and summed to the work location of individuals on the trip. This includes all trips, not just work-related trips. The VMT for each work location is then summed for all work locations in a particular census tract and then divided by the total number of employees of that census tract to arrive at the VMT/Employee.

Note: Per the OPR guidelines, a hotel maybe considered to have a trip-making characteristic closer to an employment project, and therefore the employment methodology could be used for this land use category.

### 2.3.2 Analysis Tool

The SANDAG Series 13 Activity Based Model (ABM), which was calibrated and customized for the Port Districts and the National City study area. The ABM is a travel demand forecasting model that incorporates census data and travel surveys to inform the algorithms of the model's projections. It uses a simulated population based on existing and projected demographics to match residents to employment and forecasts the daily travel on the regional transportation network. In addition, the model is able to track the daily travel of individuals in the simulated population, including origins, destinations, travel distances and mode choices. The Series 13 ABM has four (4) forecast scenarios: 2012, 2020, 2035, and 2050. The different components of the Proposed Project are projected to be implemented over a period of time, so the most appropriate year to conduct the VMT/Capita and VMT/Employee is for 2050.

To calculate VMT/Capita and VMT/Employee, the Proposed Project land uses were coded into the Transportation Analysis Zone (TAZ) in which the Proposed Project is located. A Select Zone assignment was then conducted for the Proposed Project TAZ to track origin and destination pairings and routes to and from the Proposed Project. The VMT for each home is then summed for all homes in the TAZ and divided by the population of that TAZ to arrive at Resident VMT/Capita. Similarly, the VMT for each employee is summed within the TAZ and then divided by the number of jobs.

A detailed description of how the SANDAG Model calculates VMT is provided at the following location:  
<https://www.sandag.org/uploads/2050RTP/F2050RTPTA15.pdf>

## 2.4 Determination of Significance – CEQA

The CEQA Guidelines recommend use of automobile VMT, as the preferred CEQA transportation metric, along with the elimination of auto delay/LOS for CEQA purposes statewide. For land use projects, the Technical Advisory reports that research has shown that automobile VMT/Capita at the project level should be fifteen percent (15%) below those of existing development. This section presents the transportation significance criteria that are based on the thresholds identified in the OPR Technical Advisory.

Section 15064.3 (4) of the *CEQA Guidelines* state:

A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled, and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

To follow onto this standard, Section E.2 of the *OPR Technical Advisory* (pages 16 and 17) provides recommended thresholds for the following applicable District land uses<sup>1</sup>:

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<sup>1</sup> It should be noted that the *OPR Technical Advisory* also provides threshold recommendations for residential land uses; however, since the District is prohibited from allowing residential land uses, the recommendations were excluded from this framework.

**Retail:** A net increase in total VMT may indicate a significant transportation impact. Because new retail development typically redistributes shopping trips rather than creating new trips, estimating the total change in VMT (i.e., the difference in total VMT in the area affected with and without the project) is the best way to analyze a retail project's transportation impacts.

**Other Land Uses:** Of land use projects, residential, office, and retail projects tend to have the greatest influence on VMT. For that reason, OPR recommends the quantified thresholds described above for purposes of analysis and mitigation. Lead agencies, using more location-specific information, may develop their own more specific thresholds, which may include other land use types. In developing thresholds for other project types, or thresholds different from those recommended here, lead agencies should consider the purposes described in section 21099 of the Public Resources Code and regulations in the *CEQA Guidelines* on the development of thresholds of significance (e.g., CEQA Guidelines, § 15064.7).

There are several lands uses within the Tidelands that are not covered in the thresholds outlined above. Using the guidance provided under Other Land Uses, it is recommended that the District implement thresholds for the following user group:

**Non-Commercial Employees:** This would include all employees within the Tidelands that do not work within commercial offices or retail (which are both covered by the *OPR Technical Advisory*). Since the District has a diverse employment base, it would be difficult to categorize each employment group **and** compare their associated VMT/Employee rate to a comparable rate at the regional level. Additionally, most of the employment groups within the District have very similar travel patterns and trip generation rates (i.e. most employment is industrial or service based). Therefore, the average VMT/Employee for these uses were compared to the average non-commercial VMT/Employee rate at the regional level. If the District's average VMT/Employee rate is less than 15 percent below existing regional VMT/Employee rate, it may indicate a significant transportation related impact. See Table 2.1 for clarification on which land use would be applicable for this category.

**Freight:** Neither the SB 743 legislation nor the OPR Technical Advisory mention freight, and consequently, no guidance is provided on what is an appropriate approach and threshold to determine significance. Because freight VMT is based upon the supply and demand of various goods throughout the state and nation, freight VMT typically cannot be lowered based upon standard Transportation Demand Management (TDM) measures, local land use patterns, or other VMT reduction strategies that can be applied to land use projects. However, the project would not change freight operations in the study area, so there the freight impact would be less than significant and no additional VMT analysis is required.

**Table 2.1** provides a summary of the land uses within the Proposed Project, the recommended metric that would be used to evaluate their potential transportation related impact, and the recommended impact threshold.

**Table 2.1 Evaluation Criteria & Impact Threshold**

Land Use	Evaluation Criteria	Covered By OPR?	Impact Threshold
Hotel	VMT / Employee	No	15% below regional average
Retail (sq ft)	VMT with vs. without proposed retail change	Yes	No increase in regional VMT
Restaurant (sq ft)	VMT with vs. without proposed retail change	Yes	No increase in regional VMT
Marine Terminal	VMT / Employee	No	15% below regional average
Recreation	VMT with vs. without proposed recreation change	No	No increase in regional VMT

Table 2.2 categorizes each component of the Proposed Project and with the appropriate evaluation criteria and impact threshold.

**Table 2.2 Proposed Project’s Land Use Impact Threshold**

Proposed Project’s Land Use		Evaluation Criteria and Impact Threshold		
Project	Land Use	Land Use	Evaluation Criteria	Impact Threshold
<b>District Public Works</b>				
City Program	High Turnover Restaurant	Restaurant (sq ft)	VMT with vs. without proposed retail change	No increase in regional VMT
	Resort Hotel	Hotel	VMT / Employee	15% below regional average
	Specialty Retail	Retail (sq ft)	VMT with vs. without proposed retail change	No increase in regional VMT
GB Capital	Resort Hotel	Hotel	VMT / Employee	15% below regional average
	Recreational Vehicle (RV)	Recreation	VMT with vs. without proposed recreation change	No increase in regional VMT
	Specialty Retail	Retail (sq ft)	VMT with vs. without proposed retail change	No increase in regional VMT
	Modules	Recreation	VMT with vs. without proposed recreation change	No increase in regional VMT
	Dry Boat Storage	Recreation	VMT with vs. without proposed recreation change	No increase in regional VMT
	Marina	Marine Terminal	VMT / Employee	15% below regional average
<b>District Public Works</b>				
Pepper Park	City Parks	Recreation	VMT with vs. without proposed recreation change	No increase in regional VMT

### 3.0 Transportation Impact & Mitigation

This chapter derives and analyzes the projected VMT that will be generated by the Proposed Project. This chapter also identifies if the Proposed Project related VMT would create significant project related impact, as it relates to the standards outlined in the California Environmental Quality Act (CEQA) and the draft Guidelines. Finally, the chapter provides recommendations for mitigation measures that may reduce the Proposed Project’s impacts to less than significant levels, and evaluates the feasibility of the proposed mitigation measures.

#### 3.1 VMT Impact Analysis

To calculate the average VMT/Capita and VMT/Employee generated by the Proposed Project, the Proposed Project land uses, described in Section 1.1, were incorporated into the SANDAG Series 13 Year 2050 Regional Model. A Select Zone assignment was conducted for the Proposed Project Transportation Analysis Zone (TAZ) which tracked and calculated the Proposed Project VMT by user type. The results of the Select Zone assignment are provided in **Table 3.1**. Model output results are presented in **Appendix A**.

**Table 3.1 VMT Analysis Results Impact Analysis**

Metric	Commercial Uses VMT/Employee (miles/person)
Base Year Regional Average	25.9
Significant Impact Threshold <sup>1</sup>	22.0
Proposed Project	22.6
Proposed Project vs Significant Impact Threshold	0.6 miles 2.3% over
2050 Regional Average	22.2
Significant Impact Threshold	18.9
Proposed Project <sup>2</sup>	22.6
Proposed Project vs Significant Impact Threshold	3.7 miles 19.6% over
<b>Significant Impact</b>	<b>Yes</b>

Source: SANDAG Regional Transportation Model, July 2019

Notes:

<sup>1</sup>San Diego Regional Average X 85% (See Section 2.4)

To determine potential transportation related impacts, the Proposed Project’s VMT is compared against the Base Year Regional Average and the 2050 Regional Average. However, the CEQA impact analysis is based on the 2050 regional average threshold, which is a more conservative threshold as it presents a lower VMT/Employee due to the planned transit and telecommuting features in the future. Therefore, the Base Regional Average comparison is provided for informational purposes only.

The Proposed Project’s employment uses are anticipated to generate a VMT/Employee of 22.6 miles, which is 3.7 miles (19.6%) over the 2050 Regional average significance threshold. Therefore, the employment uses within the Proposed Project would have a significant transportation related impact.

For the Proposed Project’s retail component, the retail is anticipated to be locally serving, which results in a less than significant VMT impact. Local-serving retail projects could shorten vehicle trips and reduce VMT by diverting existing trips from the existing retail to the new local retail without increasing trips outside of

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the local area. Therefore, the retail uses within the Proposed Project would have a less than significant transportation related impact.

The Bay Marina Drive closure would result in changes to the transportation network and the redistribution of traffic in the study area. The State CEQA Guidelines indicate that a VMT analysis should be conducted for transportation projects, including roadway capacity projects. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. The Technical Advisory also refers to the potential for induced travel and its associated effects. Induced travel occurs when improvements to a roadway facility enhance traffic operations and/or relieve congestion to the point at which travelers have a higher incentive to make a vehicular trip in lieu of a different mode of travel, or not taking the trip at all. The closure of Bay Marina Drive would require trips traveling to and from the terminal to now exit the I-5/Civic Center Drive interchange instead of the I-5/Bay Marina Drive interchange. This would increase the study area's total VMT by 1.7 miles. As such, the VMT impacts associated with the Bay Marina Drive closure's induced travel would result in a significant VMT impact.

### 3.2 Mitigation

As noted in section 3.1, both the employment uses within the Proposed Project would have a significant transportation related impact. In order to reduce the VMT/Employee associated with the Proposed Project to a less than significant level, Transportation Demand Management (TDM) measures would need to be implemented to reduce project related VMT. Therefore, a TDM analysis was conducted using the SANDAG Mobility Management VMT Reduction Calculator Tool to provide an understanding of the types and magnitude of TDM related features the Proposed Project would need to implement to reduce these impacts to less than significant levels.

The Mobility Management VMT Reduction Calculator Tool estimates the percent reduction in vehicle miles traveled (VMT) resulting from the application of mobility management strategies. This Excel-based tool is intended to act as a resource for identifying and evaluating the impacts of mobility management strategies as part of the development review and transportation analysis process. The tool supports the goals of SB 743 (Steinberg, 2013) by providing jurisdictions and developers with a resource to quantify VMT reductions resulting from implementation of a variety of mitigation strategies at various scales. The tool also supports local government planning efforts including implementation of general and community plans, TDM ordinances, and climate action plans.

It should be noted that the Mobility Management VMT Reduction Calculator Tool does not include every potential TDM measure that could potentially reduce Proposed Project related VMT. However, it does provide a series of TDM measures and strategies and who's reductions can be quantifiable via peer reviewed studies. To be conservative, this analysis will only assume that the measures included in the Mobility Management VMT Reduction Calculator Tool would be available as mitigation measures in which a less than significant finding can be made. This assumption is made because these are the only measures in which the District has agreed upon both their effectiveness and the way in which their reduction in quantified. It should be noted that the Proposed Project will implement a TDM plan that includes measures that were not included in the Mobility Management VMT Reduction Calculator Tool, but the impact analysis will not take credit for these measures since the method used to calculate their associated VMT reduction has not been agreed upon by the District.

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**Table 3.2** reviews each of the TDM measures included in the Mobility Management VMT Reduction Calculator Tool, identifies if the TDM measure would be applicable to the Proposed Project, and quantifies the potential reduction in VMT that the Proposed Project would experience with the implementation of the measure. The purpose of this assessment is to calculate the potential reduction in Proposed Project VMT that is feasible through quantifiable and accepted TDM measures. If the Proposed Project is not able to reduce its VMT/Employee by 19.6% (See Table 3.1), then its impacts will remain significant and will become unavoidable.

Table 3.2 Potential TDM and VMT Reduction Measures

TDM Measures	Description	Feasible for the Proposed Project to Implement?	Potential Reduction
1A. Voluntary Employer Commute Program	Employer offers a voluntary employer commute trip reduction program. The program may include a carpool or vanpool program, subsidized or discounted transit passes, bike amenities, commute trip reduction marketing, and preferential parking permit program. This strategy encompasses strategies 1C (Employer Carpool Program), 1D (Employer Transit Pass Subsidy), and 1E (Employer Vanpool Program) and cannot be analyzed in combination with these strategies. Unlike strategy 1B (Mandatory Employer Commute Program), this strategy does not require monitoring, reporting, or performance standards. If this strategy is selected, strategy 1B cannot be analyzed as part of the total VMT reduction.	Yes - This measure is feasible, but the District could mandate the future project applicants to implement a Mandatory Employer Commute Program instead of Voluntary. See Strategy 1B.	N/A
1B. Mandatory Employer Commute Program	Employer offers a mandatory employer commute trip reduction program. The program may include a carpool or vanpool program, subsidized or discounted transit passes, bike amenities, encouragement for telecommuting and alternative work schedules, commute trip reduction marketing, and preferential parking permit program. This strategy encompasses strategies 1C, 1D, and 1E and cannot be analyzed in combination with these strategies. Unlike strategy 1A (Voluntary Employer Commute Program), this strategy would be contractually required of the developer or property owner and is accompanied by a regular performance monitoring and reporting program. If this strategy is selected, strategy 1A cannot be analyzed as part of the total VMT reduction.	Yes – The District could mandate future project applicants to implement a commute program as part of their lease.	2.6%
1C. Employer Carpool Program	Employers can encourage carpooling by providing ridematching assistance to employees; providing priority parking for carshare vehicles; and providing incentives for carpooling.	Yes - This measure is feasible for the Proposed Project to implement.	Included as part of Strategy 1B
1D. Employer Transit Pass Subsidy	Employers can encourage employees to take transit by subsidized or discounted daily or monthly public transit passes to employees.	Yes - This measure is feasible for the Proposed Project to implement.	Included as part of Strategy 1B
1E. Employer Vanpool Program	Vanpooling is a flexible form of public transportation that provides groups of 5–15 people with a cost-effective and convenient rideshare option for commuting. An employer can encourage ridesharing by subsidizing vanpooling for employees that have a similar origin and destination and by providing priority parking for employees that vanpool. The SANDAG Vanpool Program provides a subsidy of up to \$400 per month to offset the vehicle lease cost.	Yes - This measure is feasible for the Proposed Project to Implement.	Included as part of Strategy 1B.
1F. Employer Telework Program	A telework program enables employees to work from home or a remote location on a periodic basis. Depending on the nature of the work, schedules can range from full-time, specific days of the week, or as needed. The VMT impacts of telework are similar to a	No – The majority, if not all, of the jobs that are anticipated to be within the Proposed Project would be service based;	N/A

Table 3.2 Potential TDM and VMT Reduction Measures

TDM Measures	Description	Feasible for the Proposed Project to Implement?	Potential Reduction
	flexible work schedule program, which enables employees to work long hours in exchange for one day off every week or two.	therefore, this measure would not be applicable.	
2A. Transit Oriented Development	Transit Oriented Development (TOD) refers to projects built in compact, walkable areas that have easy access to public transit, ideally in a location with a mix of uses, including housing, retail, offices, and community facilities. TODs are generally described as places within a 10 minute walk of a high-frequency rail transit station (e.g. SPRINTER, COASTER, Trolley). They should, at a minimum, incorporate bike and pedestrian access to transit, thereby encouraging transit use and reducing vehicle travel.	Yes - The City Development component of the Proposed Project is located within 0.5 miles of the 24 <sup>th</sup> Street Transit Center Station, and is within a 10-minute walk to the Trolley and bus services	4.7%
2B. Mixed Use Development	Mixed use projects incorporate a range of complementary land uses that provide a balanced development approach relative to the surrounding neighborhood and encourage transportation alternatives. This could include co-location residential development, office space, retail shops, and others. Land use mix is measured using an entropy index. An index of 0 indicates a single land use while an index of 1 indicates equal distribution of all land uses. For ease of use, the strategy is calculated using only two land use types - residential (number of residents) and commercial (number of jobs).	No – Residential units are not permitted in the Tideland area.	N/A
3A. Parking Pricing	Priced parking can be implemented on- or off-street and helps to effectively manage the parking supply. Priced parking works best in areas where on-street parking is managed (e.g., priced parking, residential permit programs, time limits, etc.) to reduce unintended consequences of parking in adjacent neighborhoods.	No - The Proposed Project could potentially charge for parking, but it is uncertain at this time if paid parking will be implemented. Therefore, this strategy has not been included.	N/A
3B. Parking Cash Out	Employers can offer employees who are provided free parking the option to take the cash value of the space in lieu of the space itself. California state law (AB 2109, Katz) requires that certain employers who provide subsidized parking for their employees offer a cash allowance in lieu of a parking space. This strategy is only applicable where employers pay for or rent parking for their employees. Parking cash-out is most successful when paired with incentives or programs that encourage the use of transportation alternatives.	No - The Proposed Project could potentially charge for parking, but it is uncertain at this time if paid parking will be implemented. Therefore, this strategy has not been included.	N/A
4A. Street Connectivity Improvement	A connected and complete street network improves accessibility, safety, and livability of the community. Traditional grid street patterns with short blocks offer a high degree of connectivity compared to street networks with curvilinear designs and cul-de-sacs. This strategy uses intersection density as a proxy for street connectivity improvements, which	No - The Proposed Project will not increase the average intersection / square mile ratio within the city.	N/A

Table 3.2 Potential TDM and VMT Reduction Measures

TDM Measures	Description	Feasible for the Proposed Project to Implement?	Potential Reduction
	help to facilitate a greater number of short trips. Example projects that increase intersection density would be building a new street network in a subdivision or retrofitting an existing street network to improve connectivity (e.g. cul-de-sacs converted to grid streets).		
4B. Pedestrian Facility Improvement	Enhancing pedestrian facilities (e.g. streetscape and pedestrian crossing improvements) within the jurisdiction or community helps to encourage walking and reduce the reliance on the single occupancy vehicle. This strategy applies to sidewalk enhancements that improve the existing streetscape and is not inclusive of greenfield developments with new roadways.	No - Public sidewalks near the Proposed Project are already constructed to City standards.	N/A
4C. Bikeway Network Expansion	A bikeway network includes an interconnected system of bike lanes, bike paths, and cycle tracks (Class I, Class II, and Class IV facilities). Bike facilities may share the roadway with vehicles or provide a dedicated pathway that separates bikes from cars or pedestrians. Increasing the network of bike facilities help to encourage biking as a safe and convenient alternative to driving. If this strategy is selected, strategy 4D (Bike Facility Improvement) cannot be analyzed as part of the total VMT reduction.	Yes - The Proposed Project includes Segment 5 of the Bayshore Bikeway that is a regional bicycle facility that extends 24 miles around San Diego Bay. However, due to the Proposed Project location, the proposed bikeway network expansion would not have a significant effect on project VMT.	0.0% <sup>1</sup>
4D. Bike Facility Improvement	<p>If a comprehensive bikeway network expansion (strategy 4C) is not feasible, the addition of a single bike lane (Class II), bike path (Class I), or protected bikeway (Class IV) to an existing bikeway network helps to improve biking conditions within an area. Class I facilities are bike paths that are physically separated from motor vehicle traffic. Class II facilities are striped bicycle lanes that provide exclusive use to bicycles on a roadway. Class IV facilities are protected on-street bikeways, also called cycle tracks. Consider local or state bike width standards when implementing facility improvements.</p> <p>If this strategy is selected, strategy 4C (Bikeway Network Expansion) cannot be analyzed as part of the total VMT reduction.</p>	No - Bike Facility Improvements are already assumed under 4C	N/A
4E. Bikeshare	Bikeshare programs help to reduce traffic congestion and demand for parking by providing users with on-demand access to bikes for short-term rental. Bikeshare systems that feature electrified vehicles (scooters, e-bikes) help increase the range of the bike trip, making these services convenient and attractive to users. Providing discounted bikeshare memberships or dedicated bikeshare parking can encourage users and improve the user experience.	No - While the Proposed Project will provide a bikeshare service to hotel guests, it is not applicable toward this VMT reduction, as this measure is intended to be a city-wide measure.	N/A

Table 3.2 Potential TDM and VMT Reduction Measures

TDM Measures	Description	Feasible for the Proposed Project to Implement?	Potential Reduction
4F. Carshare	Carsharing offers people with convenient access to a vehicle for personal or commuting purposes. Carsharing helps to encourage transportation alternatives by reducing vehicle ownership. Roundtrip carshare providers require members to return the vehicle to a designated location. One-way carshare (i.e., free-floating) providers allow members to pick up the vehicle in one place and end their trip in another. Discounted carshare memberships and priority parking for carsharing vehicles help to encourage use of carsharing services.	No - The Proposed Project cannot offer a car share program. Should a car share company want to locate a carshare on the property, the Proposed Project would be open to the idea.	N/A
4G. Community-Based Travel Planning	Community-based travel planning (CBTP) is a residential-based approach to outreach that provides households with customized information, incentives and support to encourage the use of transportation alternatives. The approach involves a team of trained 'Travel Advisors' engaging residents at home or in their communities to offer information, incentives, and advice about how members of households can travel in alternative ways that meet their needs. Teams of trained Travel Advisors visit all households within a targeted geographic area, have tailored conversations about residents' travel needs, and educate residents about the various transportation options available to them. Due to the personalized outreach method, communities are typically targeted in phases.	No – The Proposed Project does not include residential units.	N/A
5A. Transit Service Expansion	Expanding the transit network increases the transit system's ability to accommodate existing and future travel demand, particularly for peak period commute trips. This strategy provides an effective alternative to congested freeways and roadways for travelers and can reduce vehicle miles traveled by increasing transit ridership. Transit network service improvements should be coordinated closely with the operating transit agency.	No – The operation and deployment of transit routes within the project area is under the jurisdiction of MTS. Therefore, the District does not have the authority to expand the transit network.  MTS does not have plan to increase the transit services or transit frequency at the 24 <sup>th</sup> Street Trolley Station, located immediately east of the Interstate 5 freeway.	N/A
5B. Transit Frequency Improvements	Transit frequency improvements can be implemented system-wide or on individual routes. Frequency improvements increase transit ridership by reducing travel times, which improve the user experience and increase the attractiveness of transit service. Transit network service improvements should be coordinated closely with the operating transit agency.	No – The operation and deployment of transit routes within the project area is under the jurisdiction of MTS. Therefore, the District does not have the authority to expand the transit network.	N/A

**Table 3.2 Potential TDM and VMT Reduction Measures**

TDM Measures	Description	Feasible for the Proposed Project to Implement?	Potential Reduction
5C. Transit-Supportive Treatments	Roadway infrastructure and/or traffic signal modifications can improve transit travel times and reliability, leading to mode shift to transit. Treatments can include transit signal priority, bus-only signal phases, queue jumps, curb extensions to speed passenger loading, and dedicated bus lanes. Transit-supportive treatments should be coordinated closely with the operating transit agency.	No – Since no regional transit lines access the Proposed Project site any Transit Supportive Treatments implemented within the project area would have minimal to no effect on project related VMT.	N/A
5D. Transit Fare Reduction	Transit pricing strategies are designed to reduce the costs associated with using transit, thereby creating incentives for people to shift from other traveling modes. Fare reductions can be implemented system-wide, in specific fare-free or reduced fare zones. This strategy varies from Employer Transit Pass Subsidy (Strategy 1D) which can be offered through employer-based benefits programs in which the employer fully or partially pays the employee’s cost of transit.	No – The operation and deployment of transit routes within the project area is under the jurisdiction of MTS. Therefore, the City nor the project applicant have the authority to change transit fares.	N/A

Source: SANDAG; Chen Ryan Associates, October 2019

Note: The Proposed connection would provide a bicycle connection from the Proposed Project to the regional bike network. However, actual effect on VMT reduction is negligible.

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As shown in Table 3.2, the following TDM measures included in the Mobility Management VMT Reduction Calculator Tool were identified to be feasible for the Proposed Project to implement:

- 1B. Mandatory Employer Commute Program
- 1C. Employer Carpool Program
- 1D. Employer Transit Subsidy Pass
- 1E. Employer Vanpool Program
- 2A. Transit Oriented Development
- 4C. Bikeway Network Expansion

The total VMT reduction that would be associated with these measures would 7.3% (2.6% + 4.7% = 7.3%) for employment related VMT. As identified in Table 3.2 the Proposed Project would have to reduce its VMT/Employee by 19.6% to reduce the project related impacts to less than significant. As shown, the implementation of these TDM measures would not reduce the project related impact to less than significance. Therefore, the Proposed Project would still have significant and unavoidable transportation related impact for CEQA purposes since no feasible mitigation measures could be identified.

### 3.3 Construction Analysis

Construction details of the all the different project components are currently unknown at this time and could span over numerous years. Construction of the Proposed Project would include grading, paving, and construction of buildings. Construction workers VMT is not newly generated; instead, it is redistributed throughout the network based on their travel to different work sites each day; therefore, they are not generating new VMT each day, only redistributing it. It is important to note that construction traffic is temporary and not expected to significantly increase VMT or permanently degrade operations of a roadway facility. This redistribution is considered to be nominal and momentary. Consequently, it is assumed that the transportation impacts would be less than significant during the construction of the Proposed Project.

# Appendix A

## SANDAG SB-743 VMT Analysis Results

## Vehicle Miles of Travel Report

Scenario ID 886

National City Balance Land Use Plan - 2050 Port Master Plan - TAZ 4525

VMT per Resident						
	Scenario ID	Residents	Total Trips	Person Miles of Travel	Vehicle Miles of Travel	VMT per Resident
Regionwide	886	4,068,756	14,538,120	86,943,390	60,408,152	14.8
Jurisdiction	NATIONAL CITY	85,121	284,803	1,278,010	781,133	9.2
CPA	#N/A					
Site	TAZ 4525	299	1,219	7,162	5,019	<b>16.8</b>

VMT per Employee						
	Scenario ID	Employees	Total Trips	Person Miles of Travel	Vehicle Miles of Travel	VMT per Employee
Regionwide	886	1,710,209	5,614,544	44,180,762	37,893,408	22.2
Jurisdiction	NATIONAL CITY	30,340	94,844	585,100	490,878	16.2
CPA	#N/A					
Site	TAZ 4525	575	2,017	15,357	12,970	<b>22.6</b>

Report Generated: 10/09/19



Appendix M

**SB 743 City of National City Memo**

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## The City of National City M E M O R A N D U M

DATE: August 6, 2020

TO: Engineering

FROM: Roberto Yano, Director of Public Works / City Engineer

SUBJECT: Transportation Impact Study Guidelines to Incorporate SB743

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This memo is to offer clarifications and our recommendation on how private development project applicants should evaluate potential transportation impact projects within the City of National City and comply with the State Bill (SB) 743.

Senate Bill (SB) 743 was approved by the California legislature in September 2013, requiring changes to the California Environmental Quality Act (CEQA) methodology, specifically directing the Governor's Office of Planning and Research (OPR) to develop alternative metrics to the use of vehicular "level of service" (LOS) for evaluating transportation projects. OPR published the Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory) in December 2018 providing recommendations for the preparation of transportation impact analysis under SB 743, suggesting Vehicle Miles Traveled (VMT) to replace LOS as the primary measure of transportation impacts. The Technical Advisory requires local agencies to update their transportation procedures by July 1, 2020 or the state guidelines would go into effect.

Up to this point, traffic impact studies prepared for project within the City of National City, would be required to follow the *SANTEC/ITE Guidelines for Traffic Impact Studies (TIS) in the San Diego Region, dated March 2, 2000*. However, these guidelines rely on Level of Service as the measure for determining transportation impacts and continue with these guidelines would not comply with SB 743.

In May 2019, the Local Institute of Transportation Engineers (ITE) Transportation Capacity and Mobility Task Force, revised the previous guidelines to incorporate SB 743. A copy of the new guidelines published in May 2019 can be found in **Attachment A**.

The new *Guidelines for Transportation Impact Studies in the San Diego Region, May 2019*, provides methodologies for transportation engineers and planners to conduct CEQA transportation analysis for land development and transportation projects in compliance with SB 743. In addition to the CEQA required evaluation, the guidelines continue to provide methodologies to evaluate automobile delays and level of services with the intent to assist agencies who need this information to plan, design, operate

and maintain the roadway system. In order to separate the process of the CEQA evaluation versus the evaluation of roadway system performance, the guidelines are separated into two part: Part I if focused on CEQA transportation impact analysis (VMT methodology), while Part II is focused on the more traditional LOS-based transportation analysis, called local transportation analysis for the purpose of these guidelines. The local transportation analysis includes evaluation of any multimodal transportation improvement (transit, bicycle, pedestrian) that are recommended to support a land development project but may or may not be required as mitigation measures for a project's significant CEQA Impact.

### **CALTRANS LOCAL DEVELOPMENT AND INTERGOVERNMENTAL REVIEW**

Land Development projects that are near or which study area for the local transportation analysis includes a Caltrans operating facility will continue to be required to request from Caltrans an Intergovernmental Review (IGR). As a result of SB 743, the previous Caltrans Guide for the Preparation of Traffic Impact Studies, December 2002, is no longer in effect. Instead, Caltrans recently has published the following two documents to assist project thru the IGR process and be in compliance with SB 743.

- Interim Guidance on Local Development- Intergovernmental Review (LD-IGR) Safety Analysis (Included as Attachment B)
- VMT-Focused Transportation Impact Study Guide (TISG) (Included as Attachment C)

#### **List of Attachments:**

***Attachment A - Guidelines for Transportation Impact Studies in the San Diego Region, May 2019***

***Attachment B - Interim Guidance on Local Development- Intergovernmental Review (LD-IGR) Safety Analysis***

***Attachment C - VMT-Focused Transportation Impact Study Guide (TISG)***

**ATTACHMENT A - GUIDELINES FOR TRANSPORTATION IMPACT  
STUDIES IN THE SAN DIEGO REGION, MAY 2019**



**GUIDELINES FOR TRANSPORTATION IMPACT STUDIES  
IN THE SAN DIEGO REGION**

**May 2019**

## ACKNOWLEDGEMENTS

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# **GUIDELINES FOR TRANSPORTATION IMPACT STUDIES (TIS) IN THE SAN DIEGO REGION**

## **1.0 BACKGROUND**

The original Guidelines for Traffic Impact Studies in the San Diego Region (ITE/SANTEC, 2000) have been in use for over 19 years. They were developed by a group of volunteers from the San Diego Section of the Institute of Transportation Engineers (ITE) and the San Diego Traffic Engineers Council (SANTEC). The guidelines were later incorporated into the region's Congestion Management Program (CMP) prepared by the San Diego Association of Governments (SANDAG, 2008). Although inclusion in the Congestion Management Program (CMP) increased the visibility of the guidelines for a period of time, SANDAG has since opted out of the CMP process.

The intent in preparing the year 2000 guidelines was to promote consistency in the methodology for traffic impact studies used by different agencies in the San Diego region. While these guidelines were not intended to be used as a standard or a requirement, they provided a methodology for traffic impact studies that was similar to the methodology used by most agencies within the region. Some agencies in the region have "adopted" the guidelines by specifying that traffic impact studies follow the procedures recommended by the guidelines. Other agencies, including San Diego County and the City of San Diego, prepared their own guidelines, which included some elements in common with the regional guidelines.

The impetus to develop a revised set of regional transportation impact study guidelines is primarily related to the passage of Senate Bill 743 (SB 743) in the fall of 2013. This legislation led to a change in the way that transportation impacts are measured under the California Environmental Quality Act (CEQA). Starting on July 1, 2020, automobile delay and level of service (LOS) may no longer be used as the performance measure to determine the transportation impacts of land development projects under CEQA. Instead, an alternative metric that supports the goals of the SB 743 legislation will be required. Although there is no requirement to use any particular metric, the use of vehicle miles traveled (VMT) has been recommended by the Governor's Office of Planning and Research (OPR). This requirement does not modify the discretion lead agencies have to develop their own methodologies or guidelines, or to analyze impacts to other components of the transportation system, such as walking, bicycling, transit, and safety. SB 743 also applies to transportation projects, although agencies were given flexibility in the determination of the performance measure for these types of projects.

The intent of SB 743 is to bring CEQA transportation analyses into closer alignment with other statewide policies regarding greenhouse gases, complete streets, and smart growth. Using VMT as a performance measure instead of LOS is intended to discourage suburban sprawl, reduce greenhouse gas emissions, and encourage the development of smart growth, complete streets, and multimodal transportation networks.

## 2.0 PURPOSE OF GUIDELINES

The guidelines described in this report were prepared to provide methodologies for transportation engineers and planners to conduct CEQA transportation analyses for land development and transportation projects in compliance with SB 743. Lead agencies may opt-in to using VMT at any time but will be required to use it for analysis of transportation impacts of land development projects starting July 1, 2020. In addition, methodologies are provided to evaluate automobile delay and LOS outside of the CEQA process. Although no longer incorporated in CEQA (starting July 1, 2020), automobile delay and LOS continue to be of interest to transportation engineers and planners who plan, design, operate, and maintain the roadway system. In addition, delay experienced due to traffic congestion is a concern to drivers and passengers of vehicles using the roadway system.

Given the need to prepare VMT-based CEQA transportation impact analyses to satisfy the requirements of SB 743 as well as the need to evaluate the performance of the roadway system based on delay and LOS, these guidelines are divided into separate parts. Part I is focused on CEQA transportation impact analyses, while Part II is focused on the more traditional LOS-based transportation analyses, called local transportation analysis for the purpose of these guidelines. Local transportation analysis includes evaluation of any multimodal transportation improvements (transit, bicycle, pedestrian) that are recommended to support a land development project but may or may not be required as mitigation measures for a project's significant VMT impacts. Background information for each is provided below with more detail included in the sections that follow.

### CEQA TRANSPORTATION IMPACT ANALYSIS

The SB 743 legislation specified that the Governor's Office of Planning and Research (OPR) prepare guidelines for the implementation of SB 743. During the period from the passage of SB 743 in 2013 to the fall of 2018, OPR prepared various sets of guidelines and sought public comments from stakeholders. At the time of preparation of these transportation impact study guidelines, guidance regarding the changes to CEQA initiated by SB 743 were contained in the following documents:

- CEQA Guidelines Revisions: Revisions to the CEQA Guidelines were adopted into CEQA in December 2018 through a formal process conducted by the Natural Resources Agency. Additional changes can only be made through a future CEQA update process.
- Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory): The technical advisory provides recommendations for the preparation of transportation impact analyses under SB 743. It is not formally included in CEQA and can be revised by OPR at any time without going through a formal process. Updated versions of the technical advisory are expected to be issued by OPR as new information becomes available and as California agencies gain experience in applying SB 743 to actual projects. As of the time of preparation of these transportation impact study guidelines, the current version of the technical advisory was dated December 2018.

In addition to the differences described above, the CEQA Guidelines revisions and the technical advisory also differ in the extent to which they must be followed by local agencies. The CEQA Guidelines revisions are rules that must be followed in order to prepare an adequate CEQA document. In contrast, the technical

advisory provides statewide guidance based on evidence collected by OPR that can be refined or modified by local agencies with appropriate justification and substantial evidence. (Refer to CEQA Guidelines Section 15384 for a definition of substantial evidence). As an example, the CEQA Guidelines revisions specify that a land development project's effect on automobile delay does not cause a significant environmental impact. The use of VMT is suggested as a performance metric, but there is no indication of what level of VMT increase would cause a significant environmental impact. The technical advisory suggests various thresholds for the significance of VMT impacts but does not require the use of a particular threshold. Therefore, lead agencies would be prohibited from using automobile delay to determine significant transportation impacts and would be required to use VMT instead. Lead agencies have discretion to select their preferred significance thresholds and could choose to use the thresholds suggested in the technical advisory or develop alternative thresholds. Either decision should be supported by substantial evidence that considers the legislative intent objectives of SB 743 and the specific direction the statute provides regarding setting thresholds (per the excerpts below):

SB 743 Statute - Legislative Intent – Senate Bill No. 743, Section (b)(2)

*More appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions.*

SB 743 Statute – Section 21099(b)(1)

*Those criteria shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses.*

Regardless of the changes described above, SB 743 is clear in its intent that CEQA documents continue to address noise, air quality, and safety (per the excerpt below):

SB 743 Statute – Section 21099(b)(3)

*This subdivision does not relieve a public agency of the requirement to analyze a project's potentially significant transportation impacts related to air quality, noise, safety, or any other impact associated with transportation. The methodology established by these guidelines shall not create a presumption that a project will not result in significant impacts related to air quality, noise, safety, or any other impact associated with transportation.*

Although State CEQA Guidelines section 15064.3 states that generally vehicle miles traveled is the most appropriate measure of transportation impacts, other relevant considerations may include the project's impact on transit and non-motorized travel. A complete environmental review will generally consider how projects effect VMT in addition to effects on walking, bicycling, transit, and safety.

The CEQA transportation impact analysis described in these transportation impact study guidelines is based on the technical advisory prepared by OPR, but refinements and clarifications have been added to reflect local conditions. For any subsequent revisions of the SB 743 technical advisory prepared by OPR, it would need to be determined whether the new information would suggest a change in the methodologies for conducting CEQA transportation impact studies in the San Diego region.

## **LOCAL TRANSPORTATION ANALYSIS**

As stated above, localized traffic congestion remains a concern to transportation engineers and planners as well as the traveling public. It is recommended that consideration be given to preparation of a local

transportation analysis for all land development and transportation projects which evaluate a project's access and circulation within and nearby the project site. The local transportation analysis would provide analysis of roadway conditions where there is the potential that substantial worsening of traffic congestion would result due to implementation of the project. In addition, it would analyze the need for multimodal improvements in cases where there is the potential for the project to cause a substantial worsening of conditions for multimodal travel. Since any increases in traffic congestion or vehicular delay would not constitute a significant environmental impact, the local transportation analysis could be included in the project's CEQA document for information only or it could be provided in a separate document. The purposes of the local transportation analysis may include, but are not limited to the following:

- Recommendations for any roadway improvements that should be built/implemented by the project (or should be built/implemented by the project in coordination with other nearby land development projects) based on the project's expected effect on vehicular delay and LOS.
- Recommendations for any multimodal transportation improvements (transit, bicycle, pedestrian) that should be built/implemented by the project (or should be built/implemented by the project in coordination with other nearby land development projects). Recommended multimodal transportation improvements may be required as mitigation measures for transportation impacts related to VMT increases or they may be recommended for other reasons.
- Transportation analysis needed to determine the appropriate level of fees for multimodal transportation improvements if the local jurisdiction has a fee program in place.
- Documentation of the project's expected effect on vehicular delay and level of service in the nearby transportation system.

The roadway analysis methodologies recommended for conducting local transportation analysis, as detailed in Part II of these guidelines, are based on the previous regional traffic impact study guidelines, with changes to reflect evolution in the practice that has occurred. Users of these guidelines should note that transportation analysis advances occur each year as documented through key conferences, including the Transportation Research Board (TRB) Annual Meeting. Further, new data vendors, and new mobility options continue to evolve. As such, the recommended methodologies in this document may require ongoing updates and refinements. The recommended methodologies for multimodal transportation analysis generally reflect new procedures that were not included in the previous guidelines.

The intent of these guidelines is that agencies in the San Diego region be encouraged to implement Part I – CEQA guidelines to promote consistency in methodology and the pursuit of VMT reductions to meet regional and state goals. It is recognized that agencies may wish to make specific exceptions to these guidelines to account for local conditions. Agencies may also desire to have additional analyses conducted outside of the CEQA analyses to help inform staff and decision makers in reviewing a project. To that end, Part II – Local Transportation Analyses reflects an update to the previous regional Traffic Impact Study Guidelines.

### **3.0 PROJECT COORDINATION AND STAFF CONSULTATION**

TIS preparers are encouraged to discuss the project with the lead agency's staff at an early stage in the planning process. An understanding of the level of detail and the assumptions required for the analysis should be reached. While a pre-submittal conference is highly encouraged, it may not be a requirement. For straightforward studies prepared by consultants familiar with these TIS procedures, a telephone call or email, followed by a verification of key assumptions, may suffice. Transportation impact studies should be prepared by a qualified transportation professional. Lead agencies should consider requiring that all transportation impact studies be prepared by or reviewed under the supervision of a licensed traffic engineer.

# PART I – CEQA TRANSPORTATION ANALYSIS

## 4.0 INDIVIDUAL LAND DEVELOPMENT PROJECTS AND SPECIFIC PLANS

The recommended methodology for conducting a VMT analysis is based on guidance prepared by the California Governor's Office of Planning and Research (OPR) as provided in the published Technical Advisory on Evaluating Transportation Impacts in CEQA. At the time of writing of these guidelines, the current version of OPR's technical advisory was dated December 2018. The guidance recommended by OPR has been modified to be better suited to local conditions in the San Diego region. These modifications are noted in the details described later in this chapter.

The basic process is to compare a project's estimated VMT/capita or VMT/employee to average values on a regional, citywide, or community basis. The target is to achieve a project VMT/capita or VMT/employee that is 85% or less of the appropriate average based on suggestions in these guidelines. Note that lead agencies have discretion for choosing a VMT metric and threshold. The selection should represent how VMT reduction is balanced against other objectives of the lead agency and be supported by substantial evidence.

The methodology for determining VMT/capita or VMT/employee is related to the project's expected daily trip generation. The process for determining appropriate methodology to be used for conducting a VMT analysis for individual land development projects and specific plans is summarized in Figure 4-1.

The remainder of this section of the guidelines is divided into individual components that describe different aspects of the methodology. Other methodologies for VMT analysis could be considered at the discretion of the lead agency. However, it is recommended that any VMT methodologies within a particular analysis use consistent methodologies and that VMT analysis consider the differences between trip-based VMT analysis methodologies and tour-based VMT methodologies, as described in OPR's technical advisory.

### MINIMUM PROJECT SIZE

It is recommended that lead agencies determine a minimum project size, below which VMT impacts are presumed to be less than significant. Two alternative approaches for determining minimum project size are described below.

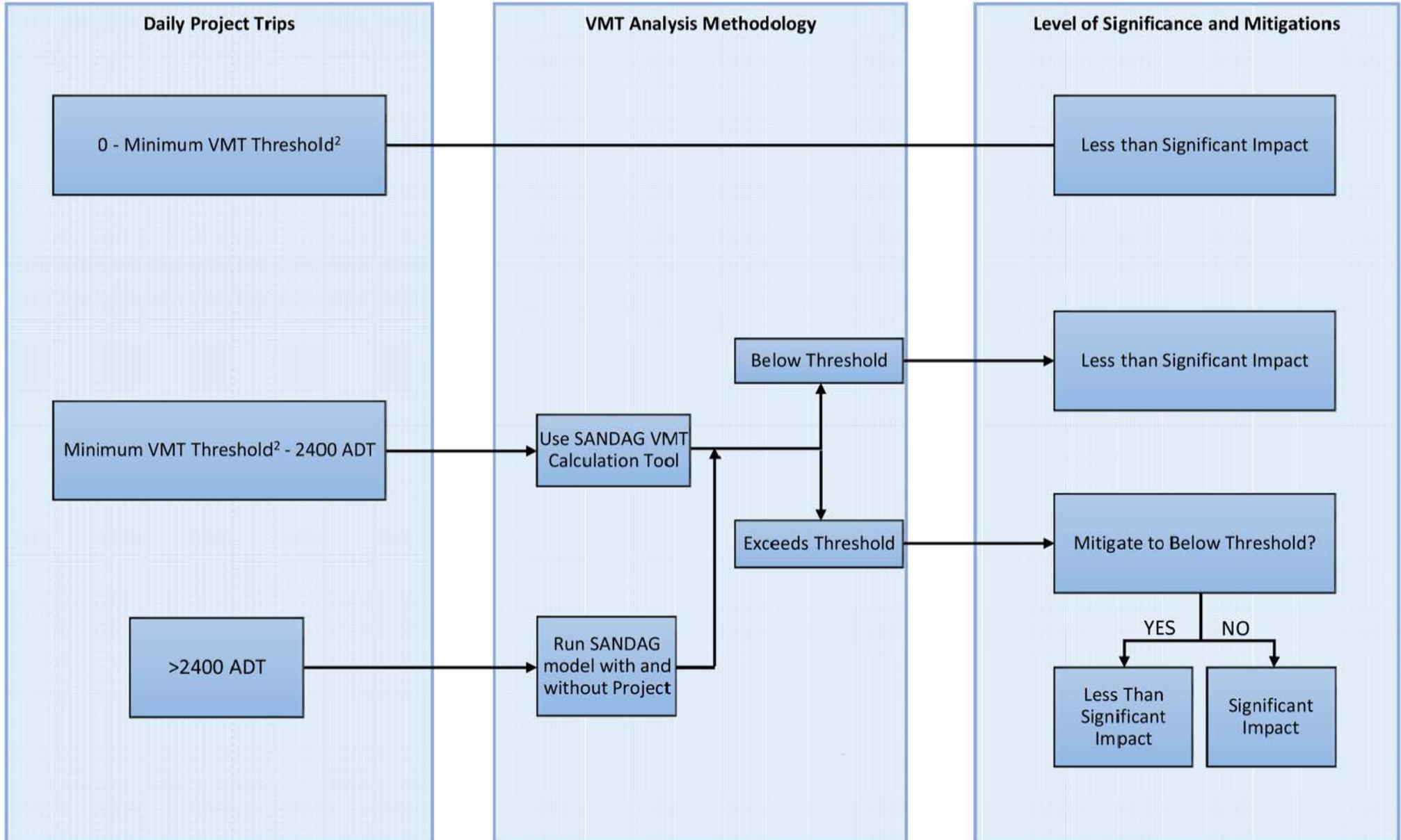
#### **Alternative 1 – Minimum Project Size Based on Previous TIS Guidelines**

Under this alternative, projects would be subjected to different levels of VMT analysis, depending on the size of the project and whether the project is consistent with the local jurisdiction's General Plan or Community Plan. Projects that are consistent with the General Plan or Community Plan are also considered to be consistent with the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS).

The determination of minimum project size for VMT analysis described below differs from the statewide guidance provided by OPR. It is based on regional standards for transportation analyses that were documented in the Guidelines for Traffic Impact Studies in the San Diego Region (ITE/SANTEC, 2000) and have been in use for over 19 years.

The following level of VMT analysis is recommended based on project size (expressed in terms of Average Daily Trips generated by the project; also known as ADT) and zoning:

Figure 4-1  
VMT Analysis for Individual Land Development Projects<sup>1</sup>



*Footnotes:*

1. VMT impacts presumed to be less than significant for certain local-serving retail projects, affordable housing projects, and projects within transit priority areas. See text.
2. Minimum VMT threshold to be determined by lead agency.

### **Projects Inconsistent with General Plan or Community Plan**

<u>ADT</u>	<u>Level of Analysis</u>
0 – 500	VMT Analysis Not Needed/VMT Impacts Presumed Less Than Significant
500 and Greater	VMT Analysis Recommended

### **Projects Consistent with General Plan or Community Plan**

<u>ADT</u>	<u>Level of Analysis</u>
0 – 1,000	VMT Analysis Not Needed/VMT Impacts Presumed Less Than Significant
1,000 and Greater	VMT Analysis Recommended

The advantage of this alternative for determining minimum project size is that it is based on the engineering judgment of professionals who are experts in determining the effect of projects on the transportation system. It has been used successfully for over 19 years in the San Diego region and has received wide acceptance from the transportation profession, decision makers, and the public. Transportation engineers and planners who support this alternative for determining minimum project size consider it to be equally valid for the current LOS-based transportation analyses as well as the new VMT-based analyses taking effect on July 1, 2020.

### **Alternative 2 – Minimum Project Size Based on Statewide Guidance**

Under this alternative, the minimum project size for VMT analysis would be based on statewide guidance provided by OPR. In OPR's technical advisory, the minimum project size is based a categorical exemption in CEQA that allows expansion of existing structures under certain circumstances. On page 12 of the December 2018 technical advisory, footnote 19, the following language describes the situation: "CEQA provides a categorical exemption for existing facilities, including additions to existing structures of up to 10,000 square feet, so long as the project is in an area where public infrastructure is available to allow for maximum planned development and the project is not in an environmentally sensitive area. [CEQA Guidelines, § 15301, subd. (e)(2).]"

OPR uses a general office building as the appropriate project type for the determination of minimum project size based on the exemption described above. Typical ITE trip generation rates are then applied to a 10,000 square-foot general office building which yields a minimum project size based on 110 daily trips.

If this alternative is used in the San Diego region, it is recommended that the use of regional or local trip generation rates be considered in addition to the typical trip generation rate used by OPR. For example, using the SANDAG trip generation manual (Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002), a standard commercial office would generate 20 daily trips per 1,000 square feet. Therefore, a 10,000 square-foot office would be expected to generate 200 daily trips and projects that generate less than 200 daily trips would not require a VMT analysis and would be presumed to have less than significant VMT impacts.

One advantage of this alternative is that it is based on statewide guidance with a reference to CEQA provisions. A second advantage is that it was developed in consideration of VMT as the performance measure for the determination of the transportation impacts of land development projects.

## PROJECTS LOCATED NEAR TRANSIT STATIONS

OPR's technical advisory contains the following guidance regarding projects located near transit stations:

- Proposed CEQA Guideline Section 15064.3, subdivision (b)(1), states that lead agencies generally should presume that certain projects (including residential, retail, and office projects, as well as projects that are a mix of these uses) proposed within ½ mile of an existing major transit stop or an existing stop along a high quality transit corridor will have a less-than-significant impact on VMT. This presumption would not apply, however, if project-specific or location-specific information indicates that the project will still generate significant levels of VMT.

An existing major transit stop is defined as “a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.”

For the purposes of these guidelines, the distance between the project site and the transit station is typically based on direct walking distance without missing sidewalks or physical barriers.

Typically, a major transit stop would be considered to be applicable for this purpose if the transit stop were assumed to be in place in SANDAG's RTIP scenario (see Methodology for VMT analysis for further discussion of this scenario).

## METHODOLOGY FOR VMT ANALYSIS

As mentioned above, it is recommended that VMT thresholds for SB 743 analysis will be developed by comparisons to average VMT/capita (for residential projects) or VMT/employee (for employment projects). The analysis can be conducted by comparing either the project VMT/capita or VMT/employee to both the San Diego regional average and the average for the city or community in which the project is located. It is recommended that if the project average is lower than either 85% of the regional average or 85% of the average for the city or community in which the project is located, the VMT impacts of the project can be presumed to be less than significant. Since this is the basis for the presumption of “less than significance,” it will be up to each city in the San Diego region and the County to adopt this recommended presumption and either define its jurisdiction as a single community for the purposes of determining VMT thresholds or subdivide its jurisdiction into smaller communities for the purpose of SB 743 analysis.

It should be noted that OPR's technical advisory includes special considerations for affordable housing and these considerations are also recommended for use in the San Diego area. Projects that include 100% affordable housing in infill locations can be presumed to have a less than significant VMT impact. Infill locations will typically have better than average access to transit and/or greater opportunities for walking and bicycling trips. The exact definition of infill locations will need to be determined based on local conditions.

The VMT methodology recommended above differs from the statewide guidance recommended by OPR in the following ways:

- OPR recommends that VMT/capita comparisons for residential projects be made both on a regional and citywide basis. These guidelines recommend that a city may choose to do

comparisons at a community level rather than at the citywide level. This recommendation applies to all cities within San Diego County and provides the lead agencies flexibility and discretion for selecting the threshold that is appropriate for their agency, based on their values and substantial evidence. Many communities within cities in the San Diego Region have a size and population that is comparable to a typical city on a statewide basis. The unincorporated area of San Diego County also has a governing structure in place for its communities, and the choice to do VMT/capita comparisons at a community level is also recommended to be extended to the unincorporated area of the County. The Cities of Encinitas and Chula Vista are also examples of cities that have distinct communities which have been treated differently for various historical planning considerations.

- OPR recommends that VMT/employee comparisons for employment projects be conducted at a regional basis only, as compared to VMT/capita comparisons that are made both at a regional and citywide basis. These guidelines recommend that VMT/employee comparisons be made at both the regional and at the citywide level (or community level as described above). The San Diego Region is the third largest region in California (after the Los Angeles Area and the San Francisco Bay Area). While some employment trips are made across the region (or even outside the region), there is a large incentive to live and work within a relatively short distance, even within the same city or community, to avoid the relatively long commute distances that can be experienced by traveling across the region during peak commute hours.
- OPR recommends that the VMT/capita comparisons for projects in unincorporated county areas be based on the region's VMT/capita or the average VMT/capita of all cities within the county. These guidelines recommend that VMT/capita and VMT/employee comparisons for projects in the unincorporated area of San Diego County be made to the overall average VMT/capita and VMT/employee for the unincorporated area of the county (or for individual communities if the County decides to use individual communities rather than the entire unincorporated area for VMT comparisons). San Diego County is one of the largest counties in California in terms of geography and also one of the most diverse in terms of topography and climate. While the VMT/capita comparison recommended by OPR may make sense for some counties in California, the comparisons between unincorporated areas and averages of the cities make less sense in San Diego County, where there are great differences in terms of distance and other factors between rural and urban areas of the county.

It is recommended that once the SB 743 analysis communities have been defined by local jurisdictions, SANDAG should then calculate the average VMT/capita (for residential projects) and the average VMT/employee (for employment projects) for each city or community. This calculation can be based on the Regional Transportation Improvement Plan (RTIP) scenario for future land use and transportation network, which includes expected growth through the end of the RTIP scenario and transportation network improvements that are considered to be funded through the RTIP. It is recommended that the RTIP scenario used for VMT analysis purposes will be held constant once it is created and will only be changed with each update of the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), typically every four years. It is recommended that the SANDAG online VMT analysis tool (described below) also be held constant and be updated on the same schedule as the RTP is updated and a new regional model is produced by SANDAG. If an online VMT analysis tool is not available for the RTIP scenario, it is recommended that analysts use the online VMT analysis tool published by SANDAG that most closely approximates the RTIP scenario.

Retail development falls into a category which is neither considered to be residential nor employment-based. For retail projects, these guidelines are based on the methodology recommended by OPR for retail projects. It is recommended that local-serving retail projects be presumed to have less than significant VMT impacts and regional-serving retail projects be presumed to have significant VMT impacts if they increase VMT above the level that would occur for conditions without the project. OPR's technical advisory recommends that lead agencies determine which retail projects are local-serving, but it does include a general guideline that retail projects larger than 50,000 square feet might be considered regional-serving rather than local-serving.

For some land development projects, it may not be immediately obvious whether the project is a residential project or an employment project. For these projects, the preferred methodology is to analyze the trip-making characteristics of the project and then use either the residential or employment methodology. For example, a hotel may be considered to have trip-making characteristics closer to an employment project, and therefore the employment methodology could be used for this land use category.

The recommended methodology for calculation of VMT depends on the size of the project as determined by the project's trip generation calculated in terms of ADT. The project's trip generation should be calculated using standard practice. For projects with a trip generation of less than 2,400 ADT, the recommended VMT analysis methodology is the SANDAG VMT calculation tool. SANDAG has prepared an online tool that calculates average VMT/capita and VMT/employee at the census tract level. Analysts would use this tool to determine the project's VMT/employee or VMT/capita to be compared to community, city, and/or regional averages.

Definitions of VMT/capita and VMT/employee that are used in SANDAG's VMT calculation tool are as follows:

- **VMT/Capita:** Includes all vehicle-based person trips grouped and summed to the home location of individuals who are drivers or passengers on each trip. It includes home-based and non-home-based trips. The VMT for each home is then summed for all homes in a particular census tract and divided by the population of that census tract to arrive at Resident VMT/Capita.
- **VMT/Employee:** Includes all vehicle-based person trips grouped and summed to the work location of individuals on the trip. This includes all trips, not just work-related trips. The VMT for each work location is then summed for all work locations in a particular census tract and divided by the number of employees of that census tract to arrive at Employee VMT/Employee.

The recommended methodology for projects over 2,400 ADT is to run the regional transportation model with and without the project to determine the project's net increase in VMT and then use that value to determine VMT/employee or VMT/capita to be compared to community, city, and/or regional averages.

## **REDEVELOPMENT PROJECTS**

Recommendations for VMT analysis of redevelopment projects are based on guidance provided by OPR with the clarifications provided below.

Redevelopment projects represent a special case since the recommended VMT thresholds for SB 743 implementation represent an efficiency metric. Under SB 743, the primary goal is for all new land

development projects to achieve efficiency from a VMT point of view. The efficiency or lack of efficiency of the existing land use is typically not relevant per OPR.

The following methodology is recommended:

- A redevelopment project that reduces absolute VMT (i.e. the total VMT with the project is less than the total VMT without the project) would be presumed to have less than significant VMT impacts.
- If a project increases absolute VMT, it is recommended that the VMT analysis methodology described above be applied to the proposed land use, as if the project was proposed on a vacant parcel (i.e. the existing land use didn't exist).

OPR's technical advisory includes specific recommendations that relate to redevelopment projects that replace affordable residential units with a smaller number of market-rate residential units. Those recommendations are also considered applicable for the purposes of these guidelines.

## **MIXED-USE PROJECTS**

Recommendations for VMT analysis of mixed-use projects are based on guidance provided by OPR with additional clarifications recommended for use in the San Diego region.

The following steps are recommended:

- Calculate trip generation separately for each component of the mixed-use project using standard practice.
- Determine the reduction in external vehicle trips due to internal capture based on guidance provided in the ITE Trip Generation manual, MXD methodologies or other techniques.
- Apply the reduction in trips to the individual land uses so that the total trip generation of the individual land uses is equal to the total project trip generation, including internal capture.
- Using the reduced trip generation, determine the VMT/capita or VMT/employee for applicable land uses. SANDAG's online VMT calculation tool may be used to determine an average trip length for the land uses within a mixed-use development based on the reported VMT/capita or VMT/employee in the census tract where the project is located. The number of residents or employees will need to be estimated for each applicable land use. When using SANDAG's VMT calculation tool to estimate average trip length, analysts should be aware that the data produced by the SANDAG VMT calculation tool is based all resident VMT/capita, so it includes the VMT associated with all trips made by the resident for the day, for example trip from home to daycare to office; office to meeting to office; office to store to home. The ITE trip generation rate for residential is only home-based trips, i.e. trips that start or end at the residence. The effect of the distinction between ITE's data and the data produced by the SANDAG VMT calculation tool will vary by location, type of project, and other factors.
- Compare the VMT/capita or VMT/employee values calculated using the reduced trip generation to applicable VMT thresholds to determine whether the individual components of the mixed-use development would be expected to have a significant VMT impact. If any component of the mixed-

use development would be expected to have a significant VMT impact, the project as a whole would be considered to have a significant VMT impact.

- Local-serving retail within a mixed-use development can be presumed to have a less than significant VMT impact.

## **PROJECTS IN RURAL AREAS**

Land development projects in rural areas may be given special consideration due to their unique trip-making characteristics. OPR's technical advisory contains the following guidance regarding projects in rural areas:

- "In rural areas of non-MPO counties (i.e., areas not near established or incorporated cities or towns), fewer options may be available for reducing VMT, and significance thresholds may be best determined on a case-by-case basis. Note, however, that clustered small towns and small town main streets may have substantial VMT benefits compared to isolated rural development, similar to the transit oriented development described above."

If interpreted literally, this guidance would not apply to the San Diego region since it is an MPO County. However, rural areas are considered to have similar trip-making characteristics regardless of whether they are located in an MPO County or not. Therefore, different thresholds than described above could be considered for the rural areas of San Diego County. In order to apply this concept, local agencies would designate a portion of their jurisdiction as rural and then establish a separate threshold for the determination of significant VMT impacts.

## **PHASED PROJECTS**

For projects proposed to be built in phases, it is recommended that each phase of the project be evaluated separately. This evaluation would include a determination of whether significant VMT impacts would occur and whether mitigation is recommended. The evaluation of VMT for each phase would include consideration of the previous project phases. For example, a project with three phases would include the following analyses:

- VMT Analysis of Phase 1: Assumes development of Phase 1 only.
- VMT Analysis of Phase 2: Assumes development of Phases 1 and 2.
- VMT Analysis of Complete Project: Assumes development of Phases 1, 2, and 3.

## **LAND DEVELOPMENT PROJECTS WITH A ROADWAY COMPONENT**

Some individual land development projects and specific plans include the implementation of roadways as a component of the project. This requires additional consideration since land development and roadway projects are likely have different significance thresholds for VMT analysis. See Chapter 6 for recommendations for VMT analysis of roadways and other transportation projects. Land development projects may also include transit, bicycle, and pedestrian facilities as components of the project, but these

types of projects would generally not be considered to increase VMT and would normally not need to be considered in the VMT analysis of a land development project.

For land development projects and specific plans with a roadway component, the following recommendations are provided:

- If it can be demonstrated that the roadway component of the project built on its own would have a less than significant impact, the roadway component of the project can be ignored and the VMT analysis can proceed based on analysis of the VMT aspects of the land development component of the project.
- If it can be demonstrated that the project as a whole would cause a net decrease in VMT, the VMT impact of the project may be considered less than significant.
- For projects with both land use and roadway components that are outside the circumstances described above, it is recommended that the VMT analysis be based on consideration of the net increase or decrease in VMT with the project implemented as compared to conditions without the project. For projects that would be expected to cause a net increase in VMT, the project would be expected to provide mitigation measures to reduce VMT to the level of the no project condition in order to have a less than significant impact. For projects in which the roadway component would require analysis of induced travel demand (see Chapter 6), the VMT generated by the induced travel should also be considered in the analysis.

## MITIGATION

If a project's VMT exceeds the thresholds identified above for individual land development projects and specific plans, it may have a significant transportation impact. According to the OPR's technical advisory, when a significant impact is determined, feasible mitigation measures must be identified that could avoid or substantially reduce the impact. Lead agencies are generally given the discretion to determine what mitigation actions are "feasible," but they must rely on substantial evidence in making these determinations. In addition, CEQA requires the identification of feasible alternatives that could avoid or substantially reduce a project's significant environmental impacts.

Not all mitigation measures are physical improvements to the transportation network. A sample mitigation measure might include telework options for employees to reduce vehicular travel. Examples of other mitigation measures based on OPR's technical advisory include but are not limited to the following:

- Improve or increase access to transit.
- Increase access to common goods and services, such as groceries, schools, and daycare.
- Incorporate affordable housing into the project.
- Incorporate a neighborhood electric vehicle network.
- Orient the project toward transit, bicycle, and pedestrian facilities.
- Improve pedestrian or bicycle networks, or transit service.
- Provide traffic calming as a way to incentivize bicycling and/or walking.
- Provide bicycle parking.
- Limit or eliminate parking supply.
- Unbundle parking costs.
- Provide parking cash-out programs.

- Implement or provide access to a commute reduction program.
- Provide car-sharing, bike sharing, and ride-sharing programs.
- Provide partially or fully subsidized transit passes.
- Shift single occupancy vehicle trips to carpooling or vanpooling by providing ride-matching services or shuttle services.
- Provide telework options.
- Provide incentives or subsidies that increase the use of modes other than a single-occupancy vehicle.
- Provide on-site amenities at places of work, such as priority parking for carpools and vanpools, secure bike parking, showers and locker rooms, and bicycle repair services.
- Provide employee transportation coordinators at employment sites.
- Provide a guaranteed ride home service to users of non-auto modes.
- Contribute to a mobility fee program that funds multimodal transportation improvements, such as those described above.

Additional mitigation measures may become acceptable as agencies continue to innovate and find new ways to reduce vehicular travel.

Changes to the project design or location could potentially reduce VMT. Project alternatives based on OPR's technical advisory that may reduce vehicle miles of travel include but are not limited to the following:

- Locate the project in an area of the region that already exhibits low VMT.
- Locate the project near transit.
- Increase project density.
- Increase the mix of uses within the project or within the project's surroundings.
- Increase connectivity and/or intersection density on the project site.

OPR's technical advisory notes that because VMT is largely a regional impact, regional VMT-reduction programs may be an appropriate form of mitigation. In-lieu fees and development impact fees have been found to be valid mitigation where there is both a commitment to pay fees and evidence that mitigation will actually occur.

Fee programs are particularly useful to address cumulative impacts. The physical improvements that constitute the mitigation program as a whole must undergo CEQA evaluation, and the imposition of development impact fees or in-lieu fees shall be in accordance with applicable regulations, such as the Mitigation Fee Act. Other mitigation must be evaluated on a project-specific basis. That CEQA evaluation could be part of a larger program, such as a regional transportation plan analyzed in a Program EIR.

Quantifying the reduction in VMT associated with potential mitigation measures for land development projects and specific plans is a relatively new endeavor for transportation engineers and planners. Therefore, these guidelines do not recommend a methodology that has been in practice or has generally been accepted for local use.

One current resource that has been identified to quantify the reduction in vehicle miles traveled associated with a particular mitigation measure is the latest edition of California Air Pollution Control Officers Association's *Quantifying Greenhouse Gas Mitigation Measures, A Resource for Local Government to Assess Emission Reductions from Green Gas Mitigation Measures* (CAPCOA, August 2010), also known

as the CAPCOA Report. This report provides a methodology to quantify the reductions in vehicle miles traveled for many of the mitigation measures listed above. At the time of preparation of these guidelines, new research was underway that would provide an update to the CAPCOA Report.

The following elements should be considered when utilizing the CAPCOA Report:

- The CAPCOA VMT reduction strategies include built environment changes and transportation demand management (TDM) actions. The built environment changes are scalable from the project site to larger geographic areas and are often captured in regional travel forecasting models such as the SANDAG model. Prior to any application of a built environment change to a project as mitigation, the project analyst should verify that the project VMT forecasting tool or model is appropriately accurate and sensitive to built-environment effects and that no double counting will occur in the application of the mitigation measure. The TDM actions are sensitive to the project site and ultimate building tenants. As such, VMT reductions associated with TDM actions cannot be guaranteed through CEQA mitigation without ongoing monitoring and adjustment.
- There are rules for calculating the VMT reduction when applying multiple mitigation measures. The CAPCOA Report rules should be considered.
- Only “new” mitigation measures should be included in the analysis to prevent double counting. For example, if the project is located near transit, the VMT reduction cannot be applied if the project utilized a model that factored in the project’s proximity to transit. In addition, telecommuting is included in SANDAG’s base model.
- Mitigation measures should be applied to the appropriate user group (employees, guest/patrons, etc.). If a certain measure applies to multiple user groups, the weighted average should be considered as the effect of the mitigation measure will vary based on the user group.

A second resource that is available is the VMT calculation tool that was provided as part of SANDAG’s Mobility Management Toolbox project.

Additional VMT calculation tools are currently available or under development by several local agencies in California. Although these tools are being developed for specific jurisdictions, they could be adopted or modified for use in individual jurisdictions in San Diego County. At the time of development of these guidelines, the following calculation tools were publicly available.

- City of San Jose: A VMT calculation tool and other information can be found at the following website: <http://www.sanjoseca.gov/vmt>.

## 5.0 COMMUNITY PLANS AND GENERAL PLANS

The recommended methodology for conducting a VMT analysis for community plans and general plans is to compare the existing VMT/capita for the community plan or general plan area with the expected horizon year VMT/capita. The recommended target is to achieve a lower VMT/capita in the horizon year with the proposed plan than occurs for existing conditions.

The calculation of VMT for a planning area requires different considerations than the calculation of VMT for an individual project or a specific plan. Generally, the use of a computerized travel forecasting model (such as the SANDAG regional model) would be needed. For details on the calculation of VMT for a planning area, analysts are referred to ITE's paper on VMT calculations (Vehicle Miles Travelled Calculations Using the SANDAG Regional Model, 2013).

If VMT analysis for a community plan or general plan requires consideration of mitigation measures to mitigate significant VMT impacts, potential mitigation measures would be similar to those used for land development projects with some modifications. The following measures could be considered:

- Modify the land use plan to increase development in areas with low VMT/capita characteristics and/or decrease development in areas with high VMT/capita characteristics.
- Provide enhanced bicycle and/or pedestrian facilities.
- Add roadways to the street network if those roadways would provide shorter travel paths for existing and/or future trips.
- Improve or increase access to transit.
- Increase access to common goods and services, such as groceries, schools, and daycare.
- Incorporate a neighborhood electric vehicle network.
- Provide traffic calming to incentivize bicycling and walking.
- Limit or eliminate parking supply.
- Unbundle parking costs.
- Provide parking or roadway pricing or cash-out programs.
- Implement or provide access to a commute reduction program.
- Provide car-sharing, bike sharing, and ride-sharing programs.
- Shift single occupancy vehicle trips to carpooling or vanpooling by providing ride-matching services or shuttle services.
- Provide telework options beyond those already assumed in current plans.
- Provide incentives or subsidies that increase the use of modes other than a single-occupancy vehicle.
- Provide employee transportation coordinators at employment sites.
- Provide a guaranteed ride home service to users of non-auto modes.

Additional mitigation measures may become acceptable as agencies continue to innovate and find new ways to reduce vehicular travel.

## 6.0 TRANSPORTATION PROJECTS

### STATEWIDE GUIDANCE

Statewide guidance for the analysis of transportation projects after the implementation of SB 743 is based on the revisions to CEQA guidelines adopted in December 2018 and OPR's technical advisory dated December 2018. This guidance may be summarized as follows:

- The revised CEQA guidelines allow lead agencies the discretion to choose a performance measure and significance thresholds for the determination of the significant impacts of transportation projects, including the continued use of level of service as a performance measure.
- OPR's technical advisory recommends the use of VMT as the appropriate performance measure for transportation projects, but it does not include a recommendation for significance thresholds. It also states that transit, bicycle, and pedestrian projects can generally be presumed to have less than significant VMT impacts.
- If VMT is selected as the performance measure for roadway projects, OPR's technical advisory recommends the inclusion of induced travel demand in the VMT calculations for roadway projects. Induced travel demand is the travel demand that would be generated by new land development projects that are built as a result of reduced travel times provided by a new roadway project.

### RECOMMENDATIONS FOR THE SAN DIEGO REGION

The approach to analysis of transportation projects recommended for use in the San Diego Region is summarized as follows:

- Transit, bicycle, and pedestrian projects can generally be presumed to have less than significant VMT impacts since they will tend to reduce VMT, as suggested by OPR's technical advisory.
- For roadway projects, VMT is the recommended performance measure. This performance measure is considered to be best suited to meeting the intent of SB 743, since focusing on VMT tends to encourage smart growth development, a reduction in vehicle trips, and the construction of multimodal transportation networks.
- VMT analysis for roadway projects can best be considered at regional, citywide, and community levels prior to the consideration of individual projects. Most roadway projects are included in the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), city circulation elements of the general plan, and/or in the circulation elements of community plans. A typical process would be for a roadway to be added to a citywide or community plan first, then incorporated into the RTP/SCS prior to the initiation of a CEQA analysis for the project. Inclusion in the citywide or community plan is considered to be a point at which the project has been accepted into the future planning process. Therefore, inclusion of a project in the citywide or community plan is recommended as the threshold of significance for VMT analysis. It is recommended that projects included in the citywide or community plan may be presumed to have less than significant VMT impacts.

- Individual roadway projects that are not included in the citywide or community plan could be presumed to have less than significant VMT impacts if they have no net increase in VMT compared to the no project condition or if they provide mitigation measures that would reduce VMT to levels at or below the no project condition.

Additional details are provided below.

VMT is the recommended performance measure for the analysis of transportation projects. The recommended methodology for conducting a VMT analysis for transportation projects is to compare the project with the community plan or general plan in which the project is located to determine whether the project would increase VMT as compared to the VMT that would be expected to occur with the community plan or general plan. This is summarized in Figure 6-1. The analysis would vary depending on the mode of travel associated with the project and based on whether the project is currently included in the community plan or general plan.

- Transit, bicycle, and pedestrian projects that would encourage the use of these modes of travel would be expected to reduce VMT, would not require a detailed VMT analysis, and would be presumed to have a less than significant impact on transportation. For these project types, the presumption of less than significant impact would apply even if the project was not in the community plan or general plan.
- Roadway projects (or multimodal projects that include roadways) that are included in the community or general plan would be presumed to have less than significant VMT impacts. In the case of some projects, a similar project may have been included in the community plan or general plan, but revisions or refinements have been incorporated. If the revisions or refinements are expected to cause increases in VMT, analysis should be conducted to compare the proposed project to the project description in the community plan or general plan. Projects that cause VMT increases, in comparison to similar projects proposed in the community plan or general plan, would need to reduce VMT levels below the level of VMT expected in the community plan or general plan in order to avoid a significant VMT impact.
- Roadway projects (or multimodal projects that include roadways) that are not included in the community or general plan would need a detailed analysis of VMT to determine whether the project would be expected to increase or decrease VMT as compared to VMT levels in the community plan or general plan. For small projects, the VMT analysis could be conducted using sketch planning techniques. For large projects, the analysis would generally require the use of a computerized travel forecasting model (such as the SANDAG regional model). For very large projects (i.e. projects that would reduce travel time by five minutes or more for any individual trips), consideration should be given to conducting an analysis of induced demand as described in OPR's technical advisory. The five-minute threshold for analysis of induced demand is based on a research paper published by the Transportation Research Board (Effects of Increased Highway Capacity: Results of Household Travel Behavior Survey, Richard G. Dowling and Steven B. Colman, Transportation Research Record 1493, Transportation Research Board, 1995). This research concluded that projects that decrease travel time by more than five minutes for a large number of trips would probably warrant an upward adjustment of travel demand.

The statewide guidance for VMT analysis of transportation projects is less specific than the guidance provided for land development projects. In the case of transportation projects, new CEQA guidance allows

lead agencies the discretion to choose the performance measure for transportation analysis, including the use of level of service and delay as a performance measure. OPR's technical advisory provides guidance indicating that VMT is the preferred measure of effectiveness for transportation projects but it has no authority to require the use of VMT as a performance measure. Although OPR's technical advisory encourages the use of VMT as a performance measure, it does not recommend a particular threshold of significance for VMT.

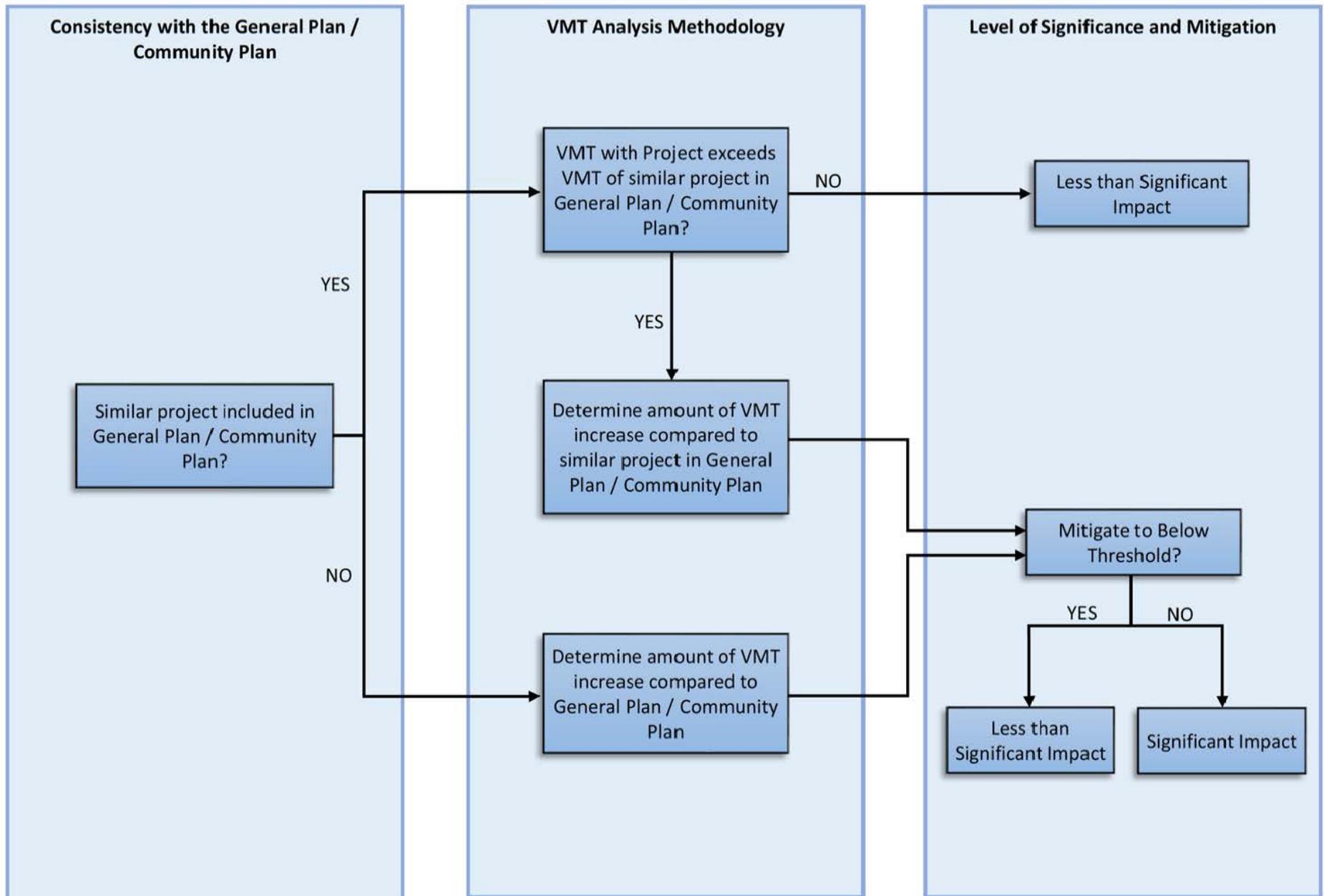
Given the available statewide guidance, these guidelines recommend the use of VMT as the performance measure for transportation projects. The recommended significance threshold is the level of VMT expected based on the community plan or general plan in which the project is located. This methodology is recommended for the following reasons:

- Although the new CEQA guidance allows for the use of any appropriate performance measure for the analysis of transportation projects, the intent of the SB 743 legislation was taken into consideration in the selection of a performance measure. SB 743 is intended to promote multimodal transportation networks, encourage infill development, and promote reduction of greenhouse gases. VMT is considered to be the performance measure that best reflects this intent.
- OPR's technical advisory encourages the use of VMT as a performance measure. Although this recommendation is not binding, the intent of these guidelines is to follow OPR's guidance, except in cases where there are regional characteristics or other factors that suggest a revision or clarification.
- The use of community plan or general plan consistency as a VMT threshold is based on the process by which transportation projects are incorporated into a community plan or general plan. In order for a transportation project to be incorporated into a community or general plan, a considerable amount of analysis is typically conducted. Community plans and general plans typically include the preparation of an Environmental Impact Report that considers a variety of environmental impacts, including transportation impacts. Since community plans and general plans are considered to represent sound urban planning decisions, consistency with these plans is considered to be a reasonable benchmark for the determination of a VMT significance threshold.

While the guidance described above is considered to be appropriate for larger transportation projects, smaller projects would be presumed to have less than significant VMT impacts based on their size or other considerations. Following is a list of projects considered to be in this category. This list is based on information in OPR's technical advisory, with revisions and clarifications based on local conditions:

1. Rehabilitation, maintenance, replacement and repair projects designed to improve the condition of existing transportation assets (e.g., highways, roadways, bridges, culverts, tunnels, transit systems, and assets that serve bicycle and pedestrian facilities) and that do not add motor vehicle capacity
2. Roadside safety devices or hardware installation such as median barriers and guardrails

Figure 6-1  
VMT Analysis Flow Chart for Transportation Projects



3. Roadway shoulder enhancements to provide "breakdown space," dedicated space for use only by transit vehicles, to provide bicycle access, or otherwise to improve safety, but which will not be used as automobile vehicle travel lanes
4. Addition of an auxiliary lane of less than two miles in length
5. Installation, removal, or reconfiguration of traffic lanes at intersections that are intended to provide operational or safety improvements
6. Addition of roadway capacity on local or collector streets provided the project also includes appropriate improvements for pedestrians, cyclists, and, if applicable, transit
7. Conversion of existing general purpose lanes (including ramps) to managed lanes or transit lanes, or changing lane management in a manner that would not substantially increase vehicle travel
8. Addition of a new lane that is intended to be restricted to use only by transit vehicles
9. Reduction in number of through lanes
10. Grade separation to separate vehicles from rail, transit, pedestrians or bicycles, or to replace a lane in order to separate preferential vehicles (e.g., HOV, HOT, or trucks) from general vehicles
11. Installation, removal, or reconfiguration of traffic control devices, including Transit Signal Priority (TSP) features
12. Installation of traffic metering systems, detection systems, cameras, changeable message signs, and other electronics designed to optimize vehicle, bicycle, or pedestrian flow
13. Timing of signals to optimize vehicle, bicycle, or pedestrian flow
14. Installation of roundabouts or traffic circles
15. Installation or reconfiguration of traffic calming devices
16. Adoption of or increase in tolls
17. Addition of tolled lanes, where tolls are sufficient to mitigate any potential VMT increase
18. Initiation of new transit service
19. Conversion of streets from one-way to two-way operation with no net increase in number of traffic lanes
20. Removal or relocation of off-street or on-street parking spaces
21. Adoption or modification of on-street parking or loading restrictions (including meters, time limits, accessible spaces, and preferential/reserved parking permit programs)

22. Addition of traffic wayfinding signage
23. Addition of new or enhanced bike or pedestrian facilities on existing streets/highways or within existing public rights-of-way
24. Addition of Class I bike paths, trails, multi-use paths, or other off-road facilities that serve non-motorized travel
25. Installation of publicly available alternative fuel/charging infrastructure
26. Addition of passing lanes, truck climbing lanes, or truck brake-check lanes in rural areas that do not increase overall vehicle capacity along the corridor
27. Roadway striping modifications that don't change the number of through lanes

Regardless of the project type and analysis method, projects that would be expected to have a significant VMT increase would be expected to consider mitigation measures. Potential mitigation measures would include the following:

- Deploy management strategies (e.g., pricing, vehicle occupancy requirements) on roadways or roadway lanes.
- Improve pedestrian or bicycle networks, or transit service.

Additional mitigation measures may become acceptable as agencies continue to innovate and find new ways to reduce vehicular travel.

## **PART II – LOCAL TRANSPORTATION ANALYSIS**

## 7.0 ROADWAY

It is recommended that consideration be given to preparation of a local transportation analysis (LTA) for all land development and transportation projects. This section describes the recommended methodology for analysis of local roadway conditions.

The purpose of the roadway analysis portion of an LTA is to forecast, describe, and analyze how a development will affect existing and future circulation infrastructure for users of the roadway system, including vehicles, bicycles, pedestrians, and transit. The LTA assists transportation engineers and planners in both the development community and public agencies when making land use, mobility infrastructure, and other development decisions. An LTA quantifies the expected changes in transportation conditions and translates these changes into transportation system effects in the vicinity of a project.

The roadway transportation analysis included in an LTA is separate from the transportation impact analysis conducted as part of the environmental (CEQA) project review process, as described in Part I. The purpose of the roadway transportation analysis is to ensure that all projects provide a fair share of roadway infrastructure improvements in order to accommodate their multimodal transportation demands.

The following guidelines were prepared to assist local agencies throughout the San Diego Region in promoting consistency and uniformity in local transportation studies. These guidelines do not establish a legal standard for these functions but are intended to supplement any individual manuals or level of service objectives for the various jurisdictions. These guidelines attempt to consolidate regional efforts to identify when an LTA is needed, what professional procedures should be followed, and what constitutes a significant traffic effect that should be dealt with.

The instructions outlined in these guidelines are subject to update as future conditions and experience become available. Special situations may call for variation from these guidelines. It is recommended that consultants who prepare an LTA submit a scoping letter (methodology memo) for review by the lead agency to verify the application of these guidelines and to identify any analysis needed to address special circumstances. The scoping letter in this context is used for transportation analysis only and is not related to a formal scoping process that occurs with preparation of a CEQA study. Caltrans and lead agencies should agree on the specific methods used in local transportation analysis studies involving any State Route facilities, including metered and unmetered freeway ramps.

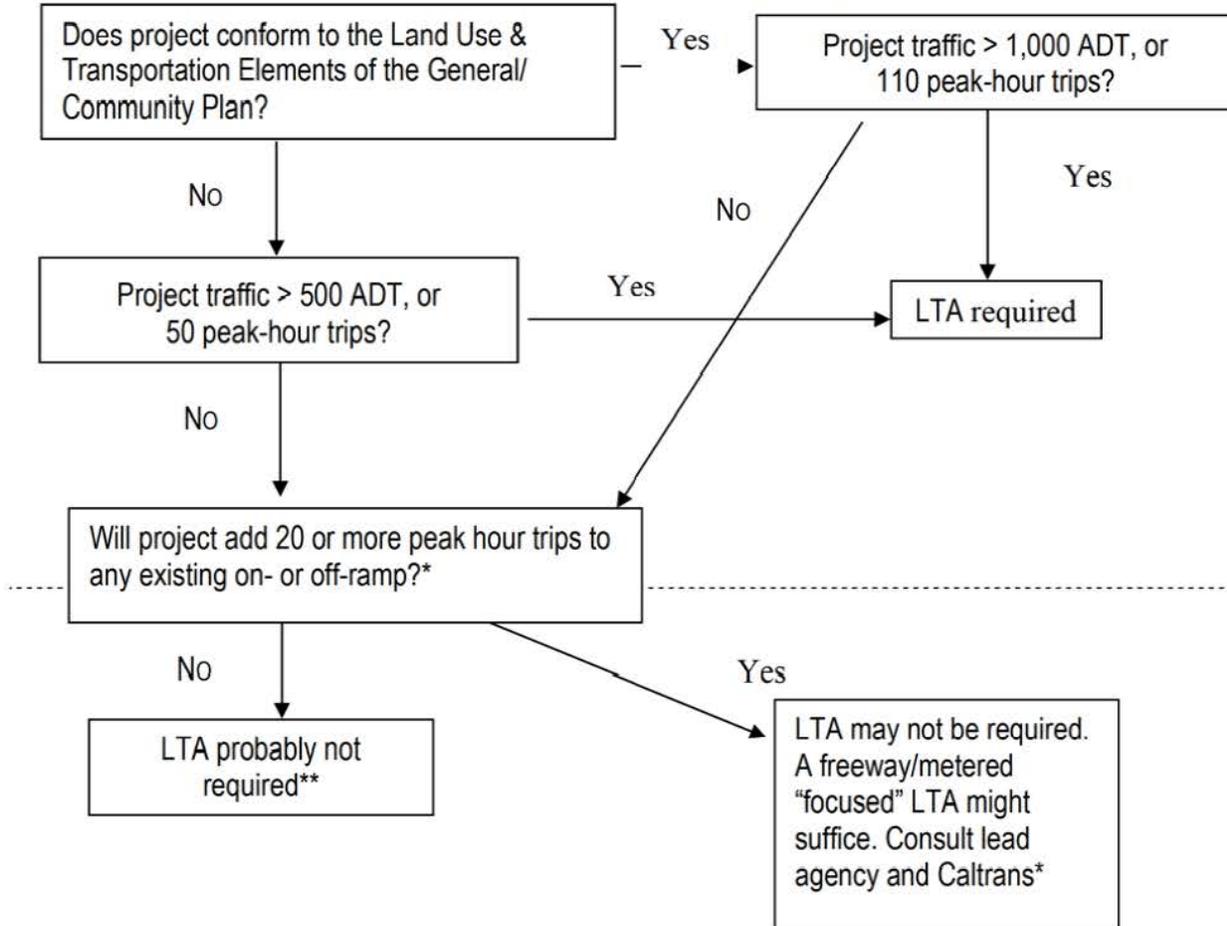
### NEED FOR A STUDY

Figure 7-1 shows the flow chart for determination of when a roadway analysis should be conducted. A roadway analysis should be prepared for all projects which generate traffic greater than 1,000 total average daily driveway trips (ADT) or 100 peak-hour trips. If a proposed project is not in conformance with the land use and/or transportation element of the general or community plan, use threshold rates of 500 ADT or 50 peak-hour trips.

Early consultation with any affected jurisdictions is strongly encouraged since a “focused” or “abbreviated” roadway analysis may still be required – even if the above threshold rates are not met. An understanding of the level of detail and the assumptions required for the analysis should be reached. A pre-submittal in-person conference may not be required. However, the applicant should prepare a scoping letter for the agency’s review and approval prior to preparation of the analysis.

Figure 7-1

**FLOW CHART FOR LTA ROADWAY ANALYSIS**



\* Check with Caltrans for current ramp metering rates. (See Attachment B – Ramp Metering Analysis)

\*\* However, for health and safety reasons, and/or local and residential street issues, an “abbreviated” or “focused” LTA may still be requested by a local agency. (For example, this may include traffic backed up beyond an off-ramp’s storage capacity or may include diverted traffic through an existing neighborhood.)

## STUDY PARAMETERS

It is recommended that the geographic area examined in the LTA include the following for roadways:

- All local roadway segments between signalized intersections (including all State surface routes), intersections, and mainline freeway locations where the proposed project will add 50 or more peak-hour trips in either direction to the existing roadway traffic.
- All freeway entrance and exit ramps where the proposed project will add a substantial number of peak-hour trips to cause any traffic queues to exceed ramp storage capacities (see Figure 1). (NOTE: Care must be taken to include other ramps and intersections that may receive project traffic diverted as a result of already existing or project causing congestion at freeway entrances and exits.)

The data used in the LTA should generally not be more than two years old and should not reflect a temporary interruption (special events, construction detour, etc.) in the normal traffic patterns unless that is the nature of the project itself. If recent traffic data is not available, current counts should be made by the project applicant's consultant. For areas near beaches or bays, counts should be taken during summer or adjusted to reflect summer conditions.

In general, the region-wide goal for roadway level of service (LOS) on all freeways, roadway segments, and intersections is "D." For central urbanized areas, the goal may be to achieve a level of service of "E." Individual jurisdictions have slightly different LOS objectives.

## SCENARIOS TO BE STUDIED

The following scenarios are recommended to be addressed in the roadway analysis (unless there is concurrence with the lead agency that one or more of these scenarios may be omitted). Some exceptions are noted at the end of this list:

Existing Conditions: Document existing traffic levels and peak-hour levels of service in the study area. Identify locations where roadways do not meet target levels of service for existing conditions.

Existing Plus Project Conditions: Analyze the effect of the proposed project in addition to existing conditions. This scenario identifies the effect of a project on the transportation network with no other changes in conditions.

Near-term (approved and pending): Analyze the cumulative conditions resulting from the development of "other" approved and "reasonably foreseeable" pending projects (application on file) that are expected to influence the study area. This is the baseline against which project effects are assessed. The lead agency may be able to provide copies of the traffic studies for the "other" projects if they are already approved. If data is not available for near-term cumulative projects, an ambient growth factor should be used. If applicable, transportation network improvements should also be included in this scenario. This would include programmed and fully funded network improvements that are scheduled to open prior to the project's expected opening day.

Near-term + Proposed Project: Analyze the effects of the proposed project at its expected opening day in addition to near-term baseline conditions. For phased projects, a separate analysis could be conducted for each phase.

Horizon Year: Identify traffic forecasts, typically 20 years in the future, through the output of a SANDAG model forecast or other computer model approved by the local agency.

Horizon Year + Proposed Project: Analyze the additional project traffic effect to the horizon year condition. When justified, and particularly in the case of very large developments or new general/community plans, a transportation model should be run with, and without, the additional development to show the net effect on all parts of the area's transportation system.

Analysis of near-term scenarios may not be necessary if this scenario is incorporated in the agency's Traffic Impact Fee (TIF) program. If an agency has established a fee program to cover near-term improvements on all key roadways, the payment of traffic impact fees could be considered to be sufficient to offset a project's effect on these roadways.

Horizon year studies may not be needed, depending on the discretion of the lead agency. Reasons for including these scenarios may vary, but they would generally be added because the proposed project is substantially different than was expected in the Community Plan/General Plan, or if the area near the project is expected to experience land use or network changes that have not been adequately accounted for in previous planning studies.

In order to use LOS criteria to determine the need for roadway improvements (see Table 7-1), proposed model or manual forecast adjustments must be made to address scenarios both with and without the project. Model data should be carefully verified to ensure accurate project and "other" cumulative project representation. In these cases, regional or subregional models conducted by SANDAG need to be reviewed for appropriateness.

## **PROJECT TRAFFIC GENERATION**

Use of SANDAG [*Traffic Generators Manual and (Not So) Brief Guide....*] or City of San Diego (*Trip Generation Manual*) rates should first be considered. Trip generation rates from ITE's latest *Trip Generation Manual* or *ITE Journal* articles could also be considered. Smart growth projects should consider use of the SANDAG Smart Growth Trip Generation and Parking Study guidelines. If local and sufficient national data do not exist, conduct trip generation studies at multiple sites with characteristics similar to those of the proposed project.

Reasonable reductions to trip rates may also be considered: (a) with proper analysis of pass-by and diverted traffic on adjacent roadways, (b) for developments near transit stations, and (c) for mixed-use developments. (Note: Caltrans and local agencies may use different trip reduction rates. Early consultation with the reviewing agencies is strongly recommended.)

Project trips can be assigned and distributed either manually or by a computer model based upon review and approval of the local agency Traffic Engineer. The magnitude of the proposed project will usually determine which method is employed.

If the manual method is used, the trip distribution percentages could be derived from existing local traffic patterns or optionally (with local agency approval) by professional judgement. If the computer model is used, the trip distribution percentages could be derived from a computer generated "select zone assignment." The centroid connectors should accurately represent project access to the street network. Preferably the project would be represented by its own traffic zone. Some adjustments to the output volumes may be needed (especially at intersections) to smooth out volumes, quantify peak volumes, adjust for pass-by and diverted trips, and correct illogical output.

## **ANALYSIS OF PROJECT EFFECT ON THE ROADWAY SYSTEM**

It is recommended that the roadway analysis determine the effect that a project will have for each of the previously outlined study scenarios. Peak-hour capacity analyses for freeways, roadway segments (ADTs may be used here to estimate V/C ratios), intersections, and freeway ramps can be conducted for existing, near-term, and long-term conditions. The methodologies used in determining the traffic effects are not only critical to the validity of the analysis, they are pertinent to the credibility and confidence the decision-makers have in the resulting findings, conclusions, and recommendations. Methodologies for roadway capacity analyses vary by agency and change over time so it is recommended that consultation be conducted with the lead agency and/or Caltrans to determine an appropriate methodology for a particular study.

## **NEED FOR ROADWAY IMPROVEMENTS**

Table 7-1 indicates when a project's effect on the roadway system is considered to justify need for roadway improvements. That is, if a project's traffic effect causes the values in this table to be exceeded, roadway improvements should be considered. Table 7-2 provides guidance on the levels of ADT that can be accommodated on various types of roadways, based on level of service.

It is the responsibility of Caltrans, on Caltrans initiated projects, to analyze the effect of ramp metering, for initial as well as future operational effect, on local streets that intersect and feed entrance ramps to the freeway. Developers and/or local agencies, however, should consider improvements to existing ramp meter facilities, future ramp meter installations, or local streets, when those effects are attributable to new development and/or local agency roadway improvement projects. When conducting analyses related to ramp meters, it is recommended that analysts consider calibrating the analysis in the transportation impact study to observed conditions in the field.

Not all improvement measures can feasibly consist of roadway widening (new lanes or new capacity). A sample improvement might include financing toward a defined ITS (Intelligent Transportation System) project, enhanced traffic signal communications project, or active transportation projects. This type of improvement would allow a project applicant (especially with a relatively small project) to provide improvements to the roadway system by paying into a local or regional fee program, providing the fee can be established in the near future.

Other improvement measures may include Transportation Demand Management recommendations – transit facilities, bike facilities, walkability, telecommuting, traffic rideshare programs, flex-time, carpool incentives, parking cash-out, complete or partial subsidization of transit passes, etc. Additional improvement measures may be identified as future technologies and policies evolve.

Table 7-1

**DETERMINATION OF THE NEED FOR ROADWAY IMPROVEMENTS**

LEVEL OF SERVICE WITH PROJECT*	ALLOWABLE CHANGE DUE TO PROJECT EFFECT**					
	FREEWAYS		ROADWAY SEGMENTS		INTERSECTIONS	RAMP*** METERING
	V/C	SPEED (MPH)	V/C	SPEED (MPH)	DELAY (SEC.)	DELAY(MIN.)
E, & F (OR RAMP METER DELAYS ABOVE 15 MIN.)	0.01	1	0.02	1	2	2

NOTES:

\* All level of service measurements are based upon Highway Capacity Manual (HCM) procedures for peak-hour conditions. However, V/C ratios for Roadway Segments may be estimated on an ADT/24-hour traffic volume basis (using Table 7-2 or a similar LOS chart for each jurisdiction). The target LOS for freeways, roadways, and intersections is generally "D." For metered freeway ramps, LOS does not apply; however, ramp meter delays above 15 minutes are considered excessive.

\*\* If a proposed project's traffic causes the values shown in the table to be exceeded, the effects of the project are determined to justify improvements. These changes may be measured from appropriate computer programs or expanded manual spreadsheets. The project applicant shall then identify feasible improvements within the LTA report that will maintain the traffic facility at the target LOS or restore to pre-project conditions. If the LOS with the proposed project becomes worse than the target (see above \* note), or if the project adds a significant amount of peak-hour trips to cause any traffic queues to exceed on- or off-ramp storage capacities, roadway improvements should be considered.

\*\*\* See Attachment B for ramp metering analysis.

KEY: V/C = Volume to Capacity ratio  
 Speed = Speed measured in miles per hour  
 Delay = Average stopped delay per vehicle measured in seconds for intersections, or minutes for ramp meters  
 LOS = Level of Service

Table 7-2

**ROADWAY CLASSIFICATIONS, LEVELS OF SERVICE (LOS)  
AND AVERAGE DAILY TRAFFIC (ADT)**

STREET CLASSIFICATION	LANES	LEVEL OF SERVICE WADT				
		A	B	C	D	E
Expressway	6 lanes	30,000	42,000	60,000	70,000	80,000
Prime Arterial	6 lanes	25,000	35,000	50,000	55,000	60,000
Major Arterial	6 lanes	20,000	28,000	40,000	45,000	50,000
Major Arterial	4 lanes	15,000	21,000	30,000	35,000	40,000
Major Arterial (One-Way)	3 lanes	12,500	16,500	22,500	25,000	27,500
Major Arterial (One-Way)	2 lanes	10,000	13,000	17,500	20,000	22,500
Secondary Arterial/ Collector	4 lanes	10,000	14,000	20,000	25,000	30,000
Collector (no center lane)	4 lanes	5,000	7,000	10,000	13,000	15,000
Collector (continuous left-turn lane)	2 lanes	5,000	7,000	10,000	13,000	15,000
Collector (no fronting property)	2 lanes	4,000	5,500	7,500	9,000	10,000
Collector (commercial- industrial fronting)	2 lanes	2,500	3,500	5,000	6,500	8,000
Collector (multi-family)	2 lanes	2,500	3,500	5,000	6,500	8,000
Collector (One-Way)	3 lanes	11,000	14,000	19,000	22,500	26,000
Collector (One-Way)	2 lanes	7,500	9,500	12,500	15,000	17,500
Collector (One-Way)	1 lane	2,500	3,500	5,000	6,500	7,500
Sub-Collector (single-family)	2 lanes	---	---	2,200	---	---

## NOTES:

1. The volumes and the average daily level of service listed above are only intended as a general planning guideline.
2. Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

## 8.0 TRANSIT

It is recommended that the geographic area examined in the LTA include the following for transit:

- All existing transit lines and transit stops within a ½ mile walking distance of the project
- Any planned transit lines or upgrades within a ½ mile walking distance of the project

In general, the region-wide goal for evaluating pedestrian, bicycle, and transit facilities is to identify opportunities to increase connectivity, frequency of service, and level of comfort. Individual jurisdictions may have different qualitative or quantitative ways of performing these evaluations.

## 9.0 BICYCLE

It is recommended that the geographic area examined in the LTA include the following for bicycle travel:

- All roadways adjacent to the project, extending in each direction to the nearest intersection with a classified roadway or with a Class I path
- Both directions of travel should be evaluated

In general, the region-wide goal for evaluating pedestrian, bicycle, and transit facilities is to identify opportunities to increase connectivity and level of comfort. Individual jurisdictions may have different qualitative or quantitative ways of performing these evaluations.

## 10.0 PEDESTRIAN

It is recommended that the geographic area examined in the LTA include the following for pedestrians:

- All pedestrian facilities directly connected to project access points or adjacent to the project development, extending in each direction to the nearest intersection with a classified roadway or connection with a Class I path
- Facilities connecting to transit stops within two blocks of the project
- Only facilities on the side of the project or along the walking route to transit stop
- Additional geographic areas may be included in certain cases to address special cases such as schools or retail centers

In general, the region-wide goal for evaluating pedestrian, bicycle, and transit facilities is to identify opportunities to increase connectivity and level of comfort. Individual jurisdictions may have different qualitative or quantitative ways of performing these evaluations.



APPENDICES

**GUIDELINES FOR TRANSPORTATION IMPACT  
STUDIES  
IN THE SAN DIEGO REGION**

## APPENDIX A

LOCAL TRANSPORTATION ANALYSIS  
SCREEN CHECK

Completed by Staff: \_\_\_\_\_  
Date Received \_\_\_\_\_  
Reviewer \_\_\_\_\_  
Date Screen Check \_\_\_\_\_

To be completed by consultant (including page #):

Name of Study \_\_\_\_\_  
Consultant \_\_\_\_\_  
Date Submitted \_\_\_\_\_

		Satisfactory		NOT REQUIRED
		YES	NO	
Indicate Page # in report:				
pg. ___	1. Table of contents, list of figures and list of tables.	<input type="checkbox"/>	<input type="checkbox"/>	
pg. ___	2. Executive summary.	<input type="checkbox"/>	<input type="checkbox"/>	
pg. ___	3. Map of the proposed project location.	<input type="checkbox"/>	<input type="checkbox"/>	
	4. General project description and background information:			
pg. ___	a. Proposed project description (acres, dwelling units....)	<input type="checkbox"/>	<input type="checkbox"/>	
pg. ___	b. Total trip generation of proposed project.	<input type="checkbox"/>	<input type="checkbox"/>	
pg. ___	c. Community plan assumption for the proposed site.	<input type="checkbox"/>	<input type="checkbox"/>	
pg. ___	5. Parking, transit and on-site circulation discussions are included.	<input type="checkbox"/>	<input type="checkbox"/>	
pg. ___	6. Map of the Study Area and specific intersections studied in the traffic report.	<input type="checkbox"/>	<input type="checkbox"/>	
pg. ___	7. Existing Transportation Conditions:			
	a. Figure identifying roadway conditions including raised medians, median openings, separate left and right turn lanes, roadway and intersection dimensions, bike lanes, parking, number of travel lanes, posted speed, intersection controls, turn restrictions and intersection lane configurations.	<input type="checkbox"/>	<input type="checkbox"/>	
	b. Figure indicating the daily (ADT) and peak-hour volumes.	<input type="checkbox"/>	<input type="checkbox"/>	
	c. Figure or table showing level of service (LOS) for intersections during peak hours and roadway sections within the study area (include analysis sheets in an appendix).	<input type="checkbox"/>	<input type="checkbox"/>	
	8. Project Trip Generation:			
pg. ___	Table showing the calculated project generated daily (ADT) and peak hour volumes.	<input type="checkbox"/>	<input type="checkbox"/>	
pg. ___	9. Project Trip Distribution using the current travel demand model (provide a computer plot) or manual assignment if previously approved. (Identify which method was used.)	<input type="checkbox"/>	<input type="checkbox"/>	
	10. Project Traffic Assignment:			
pg. ___	a. Figure indicating the daily (ADT) and peak-hour volumes.	<input type="checkbox"/>	<input type="checkbox"/>	
pg. ___	b. Figure showing pass-by-trip adjustments, and, if cumulative trip rates are used.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	11. Existing Near-term Cumulative Conditions:			
pg. ___	a. Figure indicating the daily (ADT) and peak-hour volumes.	<input type="checkbox"/>	<input type="checkbox"/>	
pg. ___	b. Figure or table showing the projected LOS for intersections during peak hours and roadway sections within the study area (analysis sheets included in the appendix).	<input type="checkbox"/>	<input type="checkbox"/>	
pg. ___	c. Traffic signal warrant analysis (Caltrans Traffic Manual) for	<input type="checkbox"/>	<input type="checkbox"/>	

Indicate Page # in report: appropriate locations.		Satisfactory		NOT REQUIRED
		YES	NO	
	12. Existing Near-term Cumulative Conditions + Proposed Project (each phase when applicable)			
pg. ___	a. Figure or table showing the projected LOS for intersections during peak hours and roadway sections with the project (analysis sheets included in the appendix).	<input type="checkbox"/>	<input type="checkbox"/>	
pg. ___	b. Figure showing other projects that were included in the study, and the assignment of their site traffic.	<input type="checkbox"/>	<input type="checkbox"/>	
pg. ___	c. Traffic signal warrant analysis for appropriate locations.	<input type="checkbox"/>	<input type="checkbox"/>	
	13. Horizon Year Transportation Conditions (if project conforms to the General/ Community Plan):			
pg. ___	a. Horizon Year ADT and street classification that reflect the Community Plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
pg. ___	b. Figure or table showing the horizon LOS for intersections during peak hours and roadway sections <u>with</u> and <u>without</u> the project (analysis sheets included in the appendix).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
pg. ___	c. Traffic signal warrant analysis at appropriate locations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	14. Horizon Year Transportation Conditions + Proposed Project (if project does not conform to the General/Community Plan):			
pg. ___	a. Horizon Year ADT and street classification as shown in the Community Plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
pg. ___	b. Horizon Year ADT and street classification for two scenarios: with the proposed project and with the land use assumed in the Community Plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
pg. ___	c. Figure or table showing the horizon LOS for intersections during peak hours and roadway sections for two scenarios: <u>with</u> and <u>without</u> the proposed project and with the land use assumed in the Community Plan (analysis sheets included in the appendix).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
pg. ___	d. Traffic signal warrant analysis at appropriate locations with the land use assumed in the General/Community Plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
pg. ___	15. A summary table showing the comparison of Existing, Existing + Near-term Cumulative, Existing + Near-term Cumulative + Proposed Project, Horizon Year, and Horizon Year + Proposed Project (if different from General/Community Plan), LOS on roadway sections and intersections during peak hours.	<input type="checkbox"/>	<input type="checkbox"/>	
pg. ___	16. A summary table showing the project's "significant traffic effects."	<input type="checkbox"/>	<input type="checkbox"/>	
	17. Transportation Improvements:			
pg. ___	a. Table identifying the improvements required that are the responsibility of the developer and others. A phasing plan is required if improvements are proposed in phases.	<input type="checkbox"/>	<input type="checkbox"/>	
pg. ___	b. Figure showing all proposed improvements that include: intersection lane configurations, lane widths, raised medians, median openings, roadway and intersection dimensions, right-of-way, offset, etc.	<input type="checkbox"/>	<input type="checkbox"/>	
pg. ___	18. The Highway Capacity Manual Operation Method or other approved method is used at appropriate locations within the study area.	<input type="checkbox"/>	<input type="checkbox"/>	
pg. ___	20. Appropriate freeway analysis is included.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Indicate Page # in report:

- pg. \_\_\_ 21. Appropriate freeway ramp metering analysis is included.
- pg. \_\_\_ 22. The traffic study is signed by a California Registered Traffic Engineer.

Satisfactory		NOT REQUIRED
YES	NO	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	

THE STUDY SCREEN CHECK FOR THE SUBJECT PROJECT IS:

\_\_\_\_\_ Approved

\_\_\_\_\_ Not approved because the following items are missing:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## APPENDIX B

ATTACHMENT B

RAMP METERING ANALYSIS

Ramp metering analysis should be performed for each horizon year scenario in which ramp metering is expected. The following table shows relevant information that should be included in the ramp meter analysis, "Summary of Freeway Ramp Metering Effects."

LOCATION	DEMAND (veh/hr) <sup>1</sup>	METER RATE (veh/hr) <sup>2</sup>	EXCESS DEMAND (veh/hr) <sup>3</sup>	DELAY (min) <sup>4</sup>	QUEUE (feet) <sup>5</sup>

NOTES:

- <sup>1</sup> DEMAND is the peak hour demand expected to use the on-ramp.
- <sup>2</sup> METER RATE is the peak hour capacity expected to be processed through the ramp meter. This value should be obtained from Caltrans.
- <sup>3</sup> EXCESS DEMAND = (DEMAND) – (METER RATE) or zero, whichever is greater.
- <sup>4</sup> DELAY =  $\frac{\text{EXCESS DEMAND}}{\text{METER RATE}} \times 60 \text{ MINUTES/HOUR}$
- <sup>5</sup> QUEUE = (EXCESS DEMAND) X 29 feet/vehicle

NOTE: Delay will be less at the beginning of metering. However, since peaks will almost always be more than one hour, delay will be greater after the first hour of metering. (See discussion on next page.)

SUMMARY OF FREEWAY RAMP METERING EFFECTS  
(Lengthen as necessary to include all affected meter locations)

LOCATION(S)	PEAK HOUR	PEAK HOUR DEMAND D	FLOW (METER RATE) F	EXCESS DEMAND E	DELAY (MINUTES)	QUEUE Q (feet)
	AM PM					
	AM PM					
	AM PM					

## DISCUSSION OF RAMP METER ANALYSIS

- A. CAUTION: The ramp metering analysis shown in Attachment B may lead to grossly understated results for delay and queue length, since important aspects of queue growth are ignored. Also, the draft guidelines method derives average values instead of maximum values for delay and queue length. Utilizing average values instead of maximum values can lead to obscuring important effects, particularly in regard to queue length.

Predicting ramp meter delays and queues requires a storage-discharge type of analysis, where a pattern of arriving traffic at the meter is estimated by the analyst, and the discharge, or meter rate, is a somewhat fixed value set by Caltrans for each individual metered ramp.

Since a ramp meter queue continues to grow longer during all times that the arrival rate exceeds the discharge rate, the maximum queue length (and hence, the maximum delay) usually occurs after the end of the peak (or highest) one hour. This leads to the need for an analysis for the entire time period during which the arrival rate exceeds the meter rate, not just the peak hour. For a similar reason, the analysis needs to consider that a substantial queue may have already formed by the beginning of the "peak hour." Traffic arriving during the peak hour is then stacked onto an existing queue, not just starting from zero as the draft analysis suggests.

Experience shows that the theoretical queue length derived by this analysis often does not materialize. Motorists, after a brief time of adjustment, seek alternate travel paths or alternate times of arrival at the meter. The effect is to approximately minimize total trip time by seeking out the best combinations of route and departure time at the beginning of the trip. This causes at least two important changes in the pattern of arriving traffic at ramp meters. First, the peak period is spread out, with some traffic arriving earlier and some traffic arriving later than predicted. Second, a significant proportion of the predicted arriving traffic will use another ramp, use another freeway, or stay on surface streets.

It is acceptable to make reasonable estimates of these temporal and spatial (time and occupying space) diversions as long as all assumptions are stated and that the unmodified, or theoretical values are shown for comparison.

- B. Additional areas for study include being able to define acceptable levels of service (LOS) and "significant" thresholds (e.g., a maximum ramp meter delay of 15 minutes) for metered freeway entrance ramps.

Currently there are no acceptable software programs for measuring project effects on metered freeway ramps nor does the Highway Capacity Manual (HCM) adequately address this issue. Hopefully in the near future a regionwide study will be initiated to determine what metering rate (at each metered ramp) would be required in order to guarantee that traffic will flow (even at LOS "E") on the entire freeway system during peak-hour conditions. From this, the ramp delays and resultant queue lengths might then be calculated. Overall, this is a very complex issue that needs considerable research and refinement in cooperation with Caltrans.

## APPENDIX C

LEVEL OF SERVICE (LOS) DEFINITIONS (generally used by Caltrans)

The concept of Level of Service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. A Level of Service<sup>s</sup> definition generally describes these conditions in terms of such factors as speed, travel time, freedom to maneuver, comfort and convenience, and safety. Levels of Service definitions can generally be categorized as follows:

LOS	D/C*	Congestion/Delay	Traffic Description
(Used for freeways, expressways and conventional highways <sup>A</sup> )			
"A"	<0.41	None	Free flow.
"B"	0.42-0.62	None	Free to stable flow, light to moderate volumes.
"C"	0.63-0.79	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
"D"	0.80-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
"E"	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
(Used for conventional highways)			
"F"	>1.00	Considerable	Forced or breakdown. Delay measured in average flow, travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.
(Used for freeways and expressways)			
"F0"	1.01-1.25	Considerable 0-1 hour delay	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.
"F1"	1.26-1.35	Severe 1-2 hour delay	Very heavy congestion, very long queues.
"F2"	1.36-1.45	Very severe 2-3 hour delay	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
"F3"	>1.46	Extremely severe 3+ hours of delay	Gridlock.

<sup>s</sup> Level of Service can generally be calculated using the latest Highway Capacity Manual. However, contact Caltrans for more specific information on determining existing "free-flow" freeway speeds.

\* Demand/Capacity ratio used for forecasts (V/C ratio used for operational analysis, where V = volume)

<sup>A</sup> Arterial LOS is based upon average "free-flow" travel speeds, and should refer to definitions in the HCM.

**ATTACHMENT B - INTERIM GUIDANCE ON LOCAL DEVELOPMENT-  
INTERGOVERNMENTAL REVIEW (LD-IGR) SAFETY ANALYSIS**

CALTRANS  
INTERIM LAND DEVELOPMENT AND INTERGOVERNMENTAL REVIEW  
(LDIGR) SAFETY REVIEW PRACTITIONERS GUIDANCE

July 2020

**PURPOSE**

The Caltrans “Vehicle Miles Traveled-Focused Transportation Impact Study Guide” (TISG), dated May 20, 2020 (see <https://dot.ca.gov/programs/transportation-planning/office-of-smart-mobility-climate-change/sb-743>), was prepared to provide guidance to Caltrans districts, lead agencies, tribal governments, developers, and consultants regarding Caltrans’ review of vehicle miles traveled (VMT) impact analysis for land use projects and land use plans. The updated TISG states, “Additional future guidance will include the basis for requesting transportation impact analysis that is not based on VMT. This guidance will include a simplified safety analysis approach that reduces risks to all road users and that focuses on multi-modal conflict analysis as well as access management issues.”

The purpose of this Interim LDIGR Safety Review Practitioners Guidance is to provide immediate direction about the safety review while final guidance is being developed.

**SCOPE**

This interim guidance is intended to apply to proposed land use projects and plans affecting the State Highway System. Specific effects may include but are not limited to adding new automobile, bicycle, or pedestrian trips to state roadways; modifying access to state roadways; or affecting the safety of connections to or travel on state roadways. Local agencies may also use this guidance as a model for review of local facilities. Caltrans traffic safety and planning staff are available to advise local agency staff, project developers, and consultants on the application of this guidance.

This interim guidance does not establish thresholds of significance for determining safety impacts under the California Environmental Quality Act (CEQA). The significance of impacts should be determined with careful judgment on the part of a public agency and based, to the greatest extent possible, on scientific and factual data consistent with Caltrans’ CEQA guidance contained in Caltrans’ *Standard Environmental Reference (SER)*,

Chapter 36, “Environmental Impact Report,” (see <https://dot.ca.gov/programs/environmental-analysis/standard-environmental-reference-ser/volume-1-guidance-for-compliance/ch-36-environmental-impact-report>) and CEQA guidelines found in the California Code of Regulations, title 14, division 6, chapter 3, article 5, section 15064, “Determining the Significance of the Environmental Effects Caused by a Project.”

## **CONDUCTING REVIEW**

### **Caltrans Review**

District traffic safety staff will use available data to determine if the proposed project may influence or contribute to locations identified by traffic safety Investigations generated by network screening or initiated by the district. District traffic safety staff are not expected to review local roadways unless requested to do so by the local lead agency.

The lead agency (or its consultant) will review safety-related local planning documents to determine if the proposed project may adversely affect locations identified for traffic safety improvements in these plans or would otherwise interfere with completion of remedial actions or projects identified in these plans. Examples of relevant plans are provided below. The lead agency or its consultant will also identify mitigation for significant, adverse impacts.

This interim guidance does not preclude, prevent, or exempt any other traffic safety review. This review should not include Level of Service (LOS), vehicular delay, or other traffic operations analyses unrelated to safety. If the review identifies potentially significant impacts to safety, evidence must be expressly identified to support and explain the specific safety concern.

In addition, mitigation strategies for these safety impacts should not be capacity-increasing. Other mitigation strategies should not degrade safety or mobility for vulnerable road users.

### **Highway Safety Improvement Program Guidelines for LDIGR Reviews**

District traffic safety staff should use Caltrans' latest “Highway Safety Improvement Program Guidelines” (see <https://dot.ca.gov/programs/local-assistance/fed-and-state-programs/highway-safety-improvement-program>) to identify safety impacts based on traffic safety Investigations generated by network screening, or initiated by the district, that may be affected by the

proposed project or plan and should assess safety improvements to mitigate potential conflicts or adverse impacts to potential or programmed remedial measures.

Instructions on conducting an intergovernmental (Type IR) traffic safety review are provided below. Traffic investigation reports (TIRs) for intergovernmental reviews will use Type IR to distinguish the unique requirements for these reviews and the content required for the associated TIR. Type IR investigations should be stand-alone reviews of an identified location or locations as part of an intergovernmental review.

If a prior traffic safety investigation has not been completed for the project site and surrounding area, then a new safety review should be conducted. Locations that have completed traffic safety Investigations generated by network screening or initiated by the district may be used to gain insight of needed safety improvements for Type IR investigations, but the documentation should remain separate. If a Type IR investigation has been completed and additional reviews change the proposed safety improvements, a new Type IR investigation should be initiated, and those changes documented. The intergovernmental safety review should be completed within two weeks of receiving the Environmental Impact Report Notice of Preparation. These reviews should largely focus on identifying locations where traffic safety improvements have already been identified or may be identified as part of an intergovernmental safety review of the project study area and should be based on the safety data outlined below.

Assessments should use traffic safety Investigations that include, but are not limited to, the following:

- TASAS Table C—"All" Collisions. The most recent report should be reviewed to determine locations in the study area with significantly high concentrations of collisions.
- TASAS Table C—"Wet" Collisions. The most recent report should be reviewed to determine locations in the study area with significantly high concentrations of wet collisions.

- Monitoring Program Reports. The most recent reports for each monitoring program should be reviewed to determine if any of the identified locations fall within the study area.
  - Type (MW): Wrong-Way Collision Monitoring Program
  - Type (MX): Cross-Over Collision Monitoring Program
  - Type (MR): Run-Off-Road Program
  - Type (MP): Pedestrian Monitoring Program
  - Type (B1 and B2): Bicycle Monitoring Program
- Systemic Review. Safety staff should review available systemic safety plans covering the study area that identify highway safety improvement projects based on both crash experience and crash potential to reduce fatal and serious injury crashes and consider their recommendations when developing comments.
- District-Initiated Traffic Safety Investigations. In addition to investigations initiated by network screening, traffic safety investigators can initiate other traffic safety investigations as needed.

District traffic safety staff should consider each location and the proposed project's or plan's potential influence on safety, including but not limited to the following factors:

- Increased presence of pedestrians and bicyclists.
- Degradation of the walking and bicycling environment and experience.
- New pedestrian and bicyclist connection desires.
- Multimodal conflict points, especially at intersections and project access locations.
- Change in traffic mix such as an increase in bicyclists or pedestrians where features such as shoulders or sidewalks may not exist or are inconsistent with facility design (sidewalks, bike and multi-user paths, multimodal roadways, etc.).
- Increased vehicular speeds.
- Transition between free flow and metered flow.
- Increased traffic volumes.

- Queuing at off-ramps resulting in slow or stopped traffic on the mainline or speed differentials between adjacent lanes.
- Queuing exceeding turn pocket length that impedes through-traffic.

District traffic safety staff should also review the site design for access management as it relates to current Caltrans standards and that might increase collisions on a state roadway. Staff should check that site access meets applicable design standards, referencing the Caltrans *Highway Design Manual* and the National Association of City Transportation Officials bicycle and pedestrian design guides, when applicable. Examples of access management issues include the following:

- Sight distance constraints caused by placement of a driveway.
- Driveway or intersection spacing.
- Queuing onto roadways caused by project access design features such as driveway placement near ramp intersections or missing left turn pockets.
- Multimodal conflict points caused by turning vehicles.
- Pedestrian and bicycle connections from the state roadway to the entrance(s) of the new land use that are incomplete.

In finalizing safety comments and safety improvement recommendations, district traffic safety staff should consider that collisions in vulnerable communities are underreported and have disproportionate collision rates.

District traffic safety staff recommendations will be submitted to the LDIGR contact for the project or plan review to be integrated with the other LDIGR comments. Safety-related comments should classify locations for safety improvements into two types:

1. General, which apply whether the proposed project or plan is implemented or not.
2. Project/plan specific, which will not apply unless the proposed project or plan is implemented.

District traffic safety staff should also identify and report any planned Caltrans improvements that would affect or otherwise modify these locations. Safety input will be integrated into the formal Caltrans LDIGR comments at each step in the CEQA process. The intergovernmental safety review is intended to be

prepared early in the project review process to provide comments to the lead agency on the Environmental Impact Report Notice of Preparation. District traffic safety staff will also be expected to review the published draft environmental document's safety impact review and provide comments about the adequacy of the safety impact review related to the State Highway System.

This guidance does not replace the Encroachment Permit process or requirements contained in the Caltrans *Encroachment Permit Manual* or required approval of an Encroachment Permit or Permit Engineering Evaluation Report (PEER) document.

District traffic safety Type IR reviews should be charged to 0000001062 along with the TIR number and 0000001063 along with the TIR number depending on whether the review is on or off the State Highway System.

### **Lead Agency Safety Impact Analysis**

The lead agency conducting the CEQA review has the discretion to determine its own methodology for safety impact review. Caltrans recommends that the local review be informed by safety-related plans and programs that may apply to the study area. Several types of local safety-related plans may be applicable, including but not limited to the following:

- Local roadway safety plans.
- Systemic safety review reports.
- Vision-zero plans.
- Active transportation, pedestrian, and bicycle plans.
- Collision monitoring programs.
- General plan or specific plan safety elements.

The lead agency conducting the safety review for the proposed project should address the following safety topics:

- Identify the plans and programs relevant to the proposed project area.
- Identify safety issues (such as a high injury network or presence of systemic crash or typologies in the project area), actions, or projects in the study area affecting the State Highway System as documented in the plans.
- Address any safety comments provided by Caltrans.

- Determine if the proposed land use project would adversely impact safety, safety actions, or safety projects.
- Prioritize vulnerable road users and communities wherever tradeoffs may be required.

### **Review Outcomes**

The lead agency conducting its own safety review for the proposed project should determine whether the project's contribution to the adverse impacts identified through the review outlined above constitutes a significant impact under CEQA. If mitigation is identified, it will necessarily require a nexus to the identified impact and be roughly proportional to that impact. Caltrans will review the proposed project mitigation to determine if the nexus between the project and proposed mitigation is acceptable or the proposed mitigation is proportional to the project impacts. If mitigation is identified, it should avoid increasing roadway vehicle capacity, which may induce VMT or affect conditions for vulnerable users.

**ATTACHMENT C - VMT-FOCUSED TRANSPORTATION IMPACT  
STUDY GUIDE (TISG)**

May 20, 2020

# Vehicle Miles Traveled-Focused Transportation Impact Study Guide



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## Use of this Guidance

The Transportation Impact Study Guide (TISG) was prepared by the State of California, Department of Transportation (Caltrans) to provide guidance to Caltrans Districts, lead agencies, tribal governments, developers and consultants regarding Caltrans review of a land use project or plan's transportation analysis using a vehicle miles traveled (VMT) metric. This guidance is not binding on public agencies and it is intended to be a reference and informational document. The guidance may be updated based upon need, or in response to updates of the Governor's Office of Planning and Research's *Technical Advisory on Evaluating Transportation Impacts in CEQA*.

The TISG replaces the *Guide for the Preparation of Traffic Impact Studies* (Caltrans, 2002) and is for use with local land use projects, not for transportation projects on the State Highway System.

# 1. Introduction

The Transportation Impact Study Guide (TISG) is used by the California Department of Transportation's (Caltrans) Local Development-Intergovernmental Review (LD-IGR) program during environmental review of land use projects and plans. As owner/operator of the State Highway System Caltrans may review projects and plans as a commenting agency or responsible agency under the California Environmental Quality Act (CEQA).

Caltrans LD-IGR program works with local jurisdictions early and throughout their land use planning and decision making processes, consistent with the requirements of CEQA and state planning law. Caltrans seeks to reduce single occupancy vehicle trips, provide a safe transportation system, reduce per capita VMT, increase accessibility to destinations via cycling, walking, carpooling, and transit, and reduce greenhouse gas (GHG) emissions. Those goals along with standard CEQA practice create the foundation of Caltrans review of proposed new land use projects.

## 1.1 Changes to CEQA

For 50 years CEQA has required that public agencies examine, disclose, and minimize the anticipated environmental impacts of public and private investments in the state. These investments include both land development projects and infrastructure investments such as freeway projects. Senate Bill 743, approved in 2013 and incorporated into the State's CEQA Guidelines in 2018, better aligned CEQA with the State's climate goals. It is changing CEQA analysis of transportation impacts associated with both land development and infrastructure projects.

For Caltrans, SB 743 means major changes in two activities:

1. Review of land use project or plan's potential impact to the State Highway System, which are generally addressed through the Caltrans LD-IGR program, and
2. CEQA analysis of capacity increasing transportation projects on the State Highway System

These changes follow both the CEQA Guidelines and the Governor's Office of Planning and Research's (OPR) [Technical Advisory on Evaluating Transportation Impacts in CEQA](#). Caltrans supports implementation of the guidance published by its State Agency partners.

A key change for the LD-IGR program is that CEQA documents will now consider different types of transportation impacts than previously examined. When analyzing the impact of VMT on the State Highway System resulting from local land use projects, the focus will no longer be on traffic at intersections and roadways immediately around project sites. Instead, the focus will

be on how projects are likely to influence the overall amount of automobile use. SB 743 specifies that “...automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment” (California Public Resources Code Section 21099).

Caltrans supports these changes, which aim to reduce automobile use while increasing use of more sustainable modes that are essential to supporting a growing population and economy while meeting climate goals.

## 1.2 Caltrans Updates Its Review of Land Use Decisions and Projects

For land use projects and plans, automobile delay is no longer considered a significant impact on the environment under CEQA (SB 743, 2013). Caltrans review of land use projects and plans is focused on a VMT metric, consistent with changes to the CEQA Guidelines (California Code of Regulations Section 15064.3(b)(1)). This VMT-focused TISG provides a foundation for review of how lead agencies apply the VMT metric to CEQA project analysis.

Beyond or in addition to the use of the VMT metric, determining how the State Highway System may otherwise be affected by a land use project may still be necessary at times, particularly as it relates to the safety of the traveling public. **Additional future guidance will include the basis for requesting transportation impact analysis that is not based on VMT. This guidance will include a simplified safety analysis approach that reduces risks to all road users and focuses on multi-modal conflict analysis as well as access management issues. With this guidance the Department will transition away from requesting LOS or other vehicle operations analyses of land use projects.**

This VMT-Focused Transportation Impact Study Guide is intended for use by the Caltrans LD-IGR program, lead agencies, tribal governments, developers, and consultants when reviewing or analyzing land use projects or plans that may impact or affect the State Highway System. It supports CEQA streamlining for qualifying projects as identified by CEQA Guidelines (California Code of Regulations Section 15064.3(b)(1)).

The objectives of this Guide are to provide:

- a. Guidance in determining when a lead agency for a land use project or plan should analyze possible impacts to the State Highway System, including its users.
- b. An update to the *Guide for the Preparation of Traffic Impact Studies* (Caltrans, 2002) that is consistent with SB 743 and the CEQA Guidelines adopted on December 28, 2018.
- c. Guidance for Caltrans land use review that supports state land use goals, state planning priorities, and GHG emission reduction goals.

- d. Statewide consistency in identifying land use projects' possible transportation impacts, to the State Highway System, and to identify potential non-capacity increasing mitigation measures.
- e. Recommendations for early coordination during the planning phase of a land use project to reduce the time, cost, and/or frequency of preparing a Transportation Impact Study or other indicated analysis.

The TISG replaces the *Guide for the Preparation of Traffic Impact Studies* (Caltrans, 2002). Caltrans continues to emphasize the importance of coordination early in the land use project approval/CEQA review process. Early coordination helps to ensure transportation impact analysis and/or site design elements that address the needs of all users are identified. Early coordination can also minimize costs and time associated with analysis of transportation impacts. The information herein may be used as part of a land use project's CEQA transportation analysis as well as for other elements of a project's review, analysis, or approval processes to determine impacts or potential and appropriate changes or mitigation necessitated by such projects.

## 2. Reducing Greenhouse Gas Emissions and Vehicle Miles Traveled

California law, including Assembly Bill 32 (Nunez, 2006) and SB 32 (Pavley, 2016), known as the California Global Warming Solutions Act of 2006, requires GHG reductions. California Air Resources Board (CARB) developed a Scoping Plan that describes the approach California will take to reduce greenhouse gas emissions. CARB finds per capita vehicle travel needs to be below what today's policies and plans would achieve. CARB's assessment is based on data in the 2017 Scoping Plan Update and 2016 Mobile Source Strategy. In those documents, CARB examined the relationship between VMT and the state's GHG emissions reduction targets. Most recently, CARB's 2018 Progress Report stated:

“With emissions from the transportation sector continuing to rise despite increases in fuel efficiency and decreases in the carbon content of fuel, California will not achieve the necessary greenhouse gas emissions reductions to meet mandates for 2030 and beyond without significant changes to how communities and transportation systems are planned, funded, and built.” ([https://ww2.arb.ca.gov/sites/default/files/2018-11/Final2018Report\\_SB150\\_112618\\_02\\_Report.pdf](https://ww2.arb.ca.gov/sites/default/files/2018-11/Final2018Report_SB150_112618_02_Report.pdf) Page 5)

SB 743, through a new CEQA metric for transportation impacts, sought to promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses (Public Resources Code Section 21099 (7)(b)(1)). That is, it sought to modernize CEQA transportation analysis in a way that supports these goals. A new metric, VMT, was selected for land use development based on the expectation that a vehicle miles traveled metric will better support greenhouse gas emission reductions and improve multimodal transportation options for land use development.

### 3. Caltrans Review of Local Development Projects

Caltrans LD-IGR program's focus is aligned with Caltrans Strategic Management Plan's goals and targets to reduce single occupancy vehicle trips, provide a safe transportation system, reduce per capita VMT, increase accessibility to destinations via cycling, walking, carpooling, and transit, and reduce GHG emissions.

CEQA Guidelines and OPR's Technical Advisory distinguish types of development projects that are presumed to have a less than significant impact on VMT and therefore, a less than significant adverse impact on transportation. Caltrans review of land use projects is attentive to the distinction and encourages development in low VMT areas while at the same time maintaining safety for the State Highway System and all its users.

#### 3.1 VMT Analysis is Caltrans' Focus

Many lead agencies are adopting VMT metrics in advance of it becoming the standard CEQA transportation metric on July 1, 2020. VMT analysis replaces level of service, the prior widely applied metric used for CEQA transportation analysis. Caltrans' primary review focus for a land use project's impacts is now VMT.

Caltrans references OPR's December 2018 SB 743 Technical Advisory as a basis for this guidance document. Caltrans recommend use of OPR's recommended thresholds for land use projects. As each lead agency develops and adopts its own VMT thresholds for land use projects, Caltrans will review them for consistency with OPR's recommendations, which are consistent with the state's GHG emissions reduction targets and CARB's Scoping Plan.

To assist in the determination of significance, many lead agencies rely on "thresholds of significance" based on substantial evidence. Caltrans will review VMT thresholds as a lead agency sets them by policy, resolution, ordinance, etc. After this one time review, there may be no need for Caltrans to comment on the thresholds as it reviews individual land use projects, unless the Agency updates its threshold.

If a lead agency sets a VMT threshold on a case by case basis, Caltrans will review it along with the individual land use project.

Caltrans supports CEQA streamlining for land use projects in defined transit priority areas and other areas identified with existing low VMT, as described in OPR's Technical Advisory. Caltrans recommends following the guidance on methods of VMT assessment found in OPR's Technical Advisory. **Caltrans comments on a CEQA document may note methodological deviations from those methods and may recommend that significance determinations and mitigation be**

**aligned with state GHG reduction goals as articulated in OPR's guidance, CARB's Scoping Plan, and related documentation.** OPR's Technical Advisory is available [online](#).

If work is required within the State Highway System Right of Way a local land use project will need a Caltrans Encroachment Permit. In such cases, follow procedures within Caltrans Encroachment Permit Manual.

### 3.2 VMT Calculation

A lead agency has discretion to choose the most appropriate methodology to evaluate a project's VMT (Public Resources Code 15064.3 (b)(4)). Caltrans will review an agency's VMT calculator or VMT calculation for consistency with technical considerations in OPR's Technical Advisory.

Because direct and indirect impacts due to VMT are regional in nature, Caltrans may review and comment on a proposed land use project's potential transportation impacts even if the project is not immediately adjacent to the State Highway System.

## 4. Projects Presumed to Have a Less than Significant Transportation Impact

Certain types of projects as identified in statute, the CEQA Guidelines, or in OPR's Technical Advisory are presumed to have a less than significant impact on VMT and therefore a less than significant impact on transportation. Generally, the identified projects contribute to efficient land use patterns enabling higher levels of walking, cycling, and transit as well as lower average trip length. This section addresses how Caltrans will determine which projects will be presumed to have a less than significant transportation impact. These projects include, for example, projects in transit priority areas, projects consisting of residential infill or those located in low VMT areas.

Caltrans references OPR's December 2018 *Technical Advisory on Evaluating Transportation Impacts in CEQA*, which identifies projects and areas presumed to have a less than significant transportation impact. Those include:

1. Residential, office, or retail projects within a Transit Priority Area, where a project is within a ½ mile of an existing or planned major transit stop or an existing stop along a high-quality transit corridor.
  - a. A major transit stop is defined as a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods (Pub. Resources Code, § 21064.3).
  - b. A high-quality transit corridor is defined as a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours (Pub. Resources Code, § 21155).
2. An area pre-screened by an agency as having low residential or office VMT:
  - a. An area where existing residential projects exhibit VMT per capita 15 percent or more below city or regional average.
  - b. An area where existing office projects exhibit VMT per capita 15 percent or more below regional average.
3. Residential projects composed of 100 percent or near-100 percent affordable housing located in any infill location. Additionally, per OPR's Technical Advisory, "Lead agencies may develop their own presumption of less than significant impact for residential projects (or residential portions of mixed use projects) containing a particular amount of affordable housing, based on local circumstances and evidence. Furthermore, a project which includes

any affordable residential units may factor the effect of the affordability on VMT into the assessment of VMT generated by those units.”

4. A locally-serving retail project (such a project typically reduces vehicle travel by providing a more proximate shopping destination, i.e., better accessibility).
5. Mixed-use projects composed entirely of the above low-VMT project types.
6. In any area of the state, absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than significant transportation impact.

Caltrans supports CEQA streamlining for these projects and acknowledges the importance of streamlining them in improving access to destinations, livability, and community vibrancy. Further, Caltrans encourages these projects because they will help achieve VMT reduction and mode shift goals.

Note, however, a land use project near transit may have a significant impact on VMT if it:

1. Has a floor area ratio less than 0.75.
2. Includes more parking than required by the local permitting agency.
3. Is inconsistent with the region’s Sustainable Communities Strategy (i.e., development is outside region’s development footprint, or in area specified as open space).
4. Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

In very limited situations, analysis or mitigation may be appropriate in low VMT areas to address specific multimodal access management issues directly caused by the project such as issues related to line of sight caused by the placement of a driveway. These situations are to be determined based on the details of specific development proposals and their setting and will be addressed in future guidance.

#### 4.1 Caltrans’ Review of Projects Presumed to Have A Less Than Significant Impact

Caltrans will review a proposed land use project in a low VMT area to determine consistency with the OPR SB 743 Technical Advisory’s recommendations and that the proposed project is presumed to have a less than significant transportation impact (using a VMT metric). Where projects will further California’s VMT goals consistent with CARB’s Scoping Plan and OPR’s Technical Advisory, Caltrans may provide comments to underscore that consistency and achievement. For example, Caltrans may send a comment letter to describe how the project

helps achieve state planning priorities contained in state law (i.e., AB 857, 2002 Wiggins) and meets state policy goals on transportation (improving access to destinations), VMT reduction, GHG emissions reduction, and/or betterment of the environment and human health.

## 5. Projects Without Presumption of Less Than Significant Impact

This section addresses how Caltrans will review projects that are not presumed to have a less than significant transportation impact (using a VMT metric).

For residential and office projects, OPR's Technical Advisory recommends VMT per capita or per employee thresholds 15% below existing city or regional VMT per capita. The recommended thresholds align with the reduction in per capita VMT required to achieve GHG reductions sufficient to achieve targets contained in State law. Caltrans suggests use of OPR's recommended thresholds of significance for land use projects and may request mitigation from projects and plans which do not meet those thresholds.

Caltrans' comments on the transportation impacts portion of a particular CEQA document may note methodological deviations from OPR's Technical Advisory and may strongly recommend significance determinations and project changes or mitigation aligned with state GHG and VMT reduction goals as articulated in that guidance and in the California Air Resources Board's Scoping Plan and related documentation.

### 5.1 Caltrans' Review of Projects Without Presumption of Less Than Significant Impact

Caltrans will review a land use project not presumed to be less than significant (as defined by Statute, CEQA Guidelines, or OPR's Technical Advisory) to determine consistency with OPR's Technical Advisory. Where projects would not support reduction of vehicle miles traveled and greenhouse gas emissions, or where VMT analysis deviates from recommendations for analysis thereby preventing a clear determination, Caltrans may provide comments on the analysis, project details or mitigation. Caltrans may comment in the following instances.

1. Where project VMT analysis and significance determination are undertaken in a manner consistent with OPR's Technical Advisory and state GHG emissions reduction goals, and where transportation impacts (using a VMT metric) are found to be less than significant:
  - a. Caltrans may send a comment letter to describe how the project helps achieve state planning priorities codified in state law (i.e., AB 857, 2002 Wiggins) and meet state policy goals on transportation (improving access to destinations), VMT reduction, GHG emissions reduction, and/or betterment of the environment and human health.
2. Where project VMT analysis and significance determination are undertaken in a manner consistent with OPR's Technical Advisory and state GHG emission reduction goals, and the

project is found to have a significant transportation impact (using a VMT metric), Caltrans may provide comments:

- a. Recommending changes in the proposed project or mitigation which would reduce the impact to less than significant
3. Where VMT analysis and significance determination are undertaken in a manner which is inconsistent with OPR's Technical Advisory or state GHG emissions reduction goals, Caltrans may provide comments:
- a. Noting methodological deviations from OPR's Technical Advisory in VMT assessment;
  - b. Recommending significance determinations, project changes or mitigation which is aligned with state GHG reduction goals as articulated in OPR's Technical Advisory and in the California Air Resources Board's Scoping Plan and related documentation;
  - c. Pointing out inconsistency with the region's Sustainable Communities Strategy (development is outside region's development footprint, or in area specified as open space); or
  - d. Suggesting project revisions or mitigation be undertaken to reduce project-generated VMT

## 6. Rural Areas Outside of Metropolitan Planning Organizations (MPOs)

OPR's Technical Advisory indicates significance thresholds for projects in rural areas of non-MPO counties may be best determined on a case-by-case basis. In these rural areas, programmatic VMT mitigation is sometimes the most effective. Caltrans may comment requesting VMT-reducing strategies for the rural area be included programmatically, including at the General Plan level, for example. Caltrans will also recommend establishment of programs or methods to reduce VMT and support appropriate bicycle, pedestrian, and transit infrastructure, services or incentives.

A future update of Caltrans' Transportation Impact Study Guide may add flexibility in the approach to rural areas within MPO counties.

## 7. Mitigating Transportation Impacts

For years, transportation impacts under CEQA often led to mitigation in the form of roadway widening or otherwise addressing traffic operations with the intention of improving automobile level of service. Based on SB 743, the historic approach to mitigating transportation impacts is being modified.

Caltrans reviews projects for consistency with the recommendations in the VMT Mitigation and Alternatives section of OPR's Technical Advisory with a focus on:

- 1) Whether the lead agency considered applicable measures to reduce VMT from the project, and
- 2) Whether the lead agency identified feasible alternatives that could avoid or substantially reduce a project's significant transportation impacts.

As noted above, reducing or mitigating VMT will serve many state goals, including providing more multimodal transportation options and supporting air quality, public health, and climate goals.<sup>1</sup> The TISG Appendix includes a partial list of resources to reference for supporting information on VMT reduction measures. Caltrans supports both on-site and off-site mitigation measures to reduce VMT.

On-site design features that reduce VMT may minimize or eliminate mitigation necessary to achieve a less than significant transportation impact. For example, a project may incorporate transportation demand management strategies (e.g., parking supply reduction, on-street bicycle facilities improvements, or pedestrian network improvements) into project design to reduce project VMT. Some local agencies provide online calculator tools to assess a project's VMT and estimate reduction achieved through project design features.

Where further on-site design features are infeasible or not proven to be effective, direct investments in off-site VMT mitigation may be appropriate and feasible to mitigate VMT associated with a project. Off-site mitigation measures may include programmatic methods that implement mitigation in advance of and in anticipation of transportation impacts generated by land use projects or plans. Programmatic methods may include, but are not necessarily limited to, VMT mitigation banks, VMT mitigation exchanges, or VMT impact fee programs:

1. Jurisdictions that document appropriate nexus and proportionality between a transportation impact fee and VMT reduction may rely on such fees to mitigate VMT

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<sup>1</sup> Documented benefits of VMT reduction are available at <http://opr.ca.gov/ceqa/updates/sb-743/>

transportation impacts from land use development projects. For example, a nexus study that contemplates a capital improvement program consisting of projects that would demonstrably reduce VMT within the jurisdiction's geographic scope and within the buildout time horizon of the proposed project could serve as adequate fair share VMT mitigation.

Similar support for this "fair share" approach comes from CEQA Guidelines and OPR's General Plan Guidelines which advise jurisdictions to collaborate proactively with their regional public and private sector partners to develop and adopt multi-party fair share impact fee programs needed to finance planned transportation infrastructure improvements. The guidelines suggest basing such impact fee programs on multi-modal system improvements with a demonstrated ability to reduce the VMT generated by new development.<sup>2</sup>

2. Jurisdictions can pool fees from individual development projects to facilitate feasible project-level mitigation at a programmatic level, known as a VMT mitigation bank.
3. Jurisdictions can also develop a VMT mitigation exchange which would allow a developer to fund off-site VMT mitigation projects from a pre-approved list of mitigation projects that are proportional in size to the transportation impact (using a VMT metric) from the development project.

Lead Agencies should consider the legal requirements and practical implications of programmatic mitigation strategies. For example, some additional considerations for VMT mitigation exchanges and banks are outlined in a University of California Berkeley research paper (link in Appendix). The considerations include "additionality" (generally meaning the improvements would not have occurred without funding from the VMT mitigation bank), equity (with respect to geographical distribution of beneficial mitigation projects), verifiability, and exhaustion of on-site mitigation strategies.

Caltrans supports efforts to identify and pilot reasonable, feasible, and enforceable programmatic mitigation mechanisms that equitably reduce transportation impacts to the greatest extent feasible.

Caltrans will coordinate with cities, counties, and regional transportation planning agencies to develop and pilot programmatic methods that fund off-site VMT mitigation projects. Such a framework could provide funding necessary for projects that reduce VMT, while providing more

---

<sup>2</sup> Governor's Office of Planning and Research. 2017. *General Plan Guidelines Update*. Chapter 9: Implementation. Available at: [http://opr.ca.gov/docs/OPR\\_C9\\_final.pdf](http://opr.ca.gov/docs/OPR_C9_final.pdf). (Page 251)

transportation options, safer connections between new development and the existing community, and a pathway to mitigating transportation impacts from land use projects to less-than-significant levels.

## 8. Appendix

### Links to key resources

1. Governor's Office of Planning and Research December 2018 [Technical Advisory](#) on Evaluating Transportation Impacts in CEQA
2. California Air Resources Board [Scoping Plan-Identified VMT Reductions and Relations to State Climate Goals](#)
3. California Air Resources Board [California's 2017 Climate Change Scoping Plan: the strategy for achieving California's 2030 greenhouse gas target](#)
4. California Air Resources Board [2018 Progress Report: California's Sustainable Communities and Climate Protection Act](#)
5. Public Resources Code, Chapter 2.7: Modernization of Transportation Analysis for Transit-Oriented Infill Projects, [Section 21099](#) (SB 743 in Public Resources Code)
6. California Code of Regulations, Title 14, Division 6, Chapter 3, [Section 15064.3](#) (SB 743-related CEQA Guidelines)
7. VMT Mitigation Resources.  
Strategies to mitigate VMT are available within the following resources. Additional mitigation resources will be added to [Caltrans SB 743 Implementation webpage](#).
  - a. Governor's Office of Planning and Research's CEQA Guidelines Update and Technical Advisory [website](#) has information on VMT reduction strategies, even for rural areas.
  - b. California Air Pollution Control Officers Association's (CAPCOA) [2010 Quantifying GHG Mitigation Measures](#) is a current source of VMT reduction by mitigation strategy.
  - c. A 2018 [research paper](#) from University of California Berkeley School of Law's Center for Law, Energy & the Environment focuses on two innovative models that could be used to implement programmatic VMT mitigation strategies for land use or transportation projects. VMT mitigation "banks" and "exchanges"

are compared, and examples provided of ways to mitigate VMT under CEQA or the mitigation fee act. These models are conceptually similar to existing mitigation frameworks such as regional impact fee programs or habitat conservation banks.

- d. A 2020 white paper prepared by Fehr & Peers [VMT Mitigation Through Banks and Exchanges: Understanding New Mitigation Approaches](#) highlights potential VMT mitigation programs including impact fee programs, mitigation exchange, and mitigation bank.
  - e. State Smart Transportation Initiative (SSTI) 2018 report [Modernizing Mitigation: A Demand-Centered Approach](#) outlines partnerships possible to reduce the demand for driving.
8. Additional Resources
- a. Governor's Office of Planning and Research [Key Resources on SB 743](#): Studies, Reports, Briefs, and Tools

Appendix N  
**Water Supply Assessment**

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## SWEETWATER AUTHORITY

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September 3, 2019

Anna Buzaitis  
San Diego Unified Port District  
3165 Pacific Highway  
San Diego, CA 92101

Subject: Water Supply Assessment – National City Bayfront Project Environmental Impact Report  
SWA File: (Gen) Water Resources – Water Supply Assessments

Dear Ms. Buzaitis:

On April 26, 2019, the San Diego Unified Port District (Port) requested a Water Supply Assessment (WSA) from Sweetwater Authority (Authority) for the National City Bayfront Project's Environmental Impact Report (EIR), in accordance with Senate Bill 610. Furthermore, on July 10, 2019, the Port granted the Authority a 30-day extension to complete the WSA, with the understanding that the Authority's Governing Board would approve the WSA by the end of August 2019. The Authority completed the WSA for the National City Bayfront Project's EIR within the 30-day extension granted by the Port and the Authority's Governing Board approved the WSA on August 28, 2019. Enclosed is a copy of the approved WSA for the National City Bayfront Project's EIR.

If you have any questions about the WSA, please contact Erick Del Bosque, Engineering Manager, at (619) 409-6752 or [edelbosque@sweetwater.org](mailto:edelbosque@sweetwater.org).

Sincerely,

SWEETWATER AUTHORITY

Ron R. Mosher  
Director of Engineering

RRM:ah

Enclosure: as cited

cc: Erick Del Bosque, Sweetwater Authority

I:\engr\Gen\Water Resources\Water Supply Assessments\Cor\Ltr - WSA for National City Bayfront Projects EIR - 09-03-19.docx

*A Public Water Agency  
Serving National City, Chula Vista and Surrounding Areas*

# **WATER SUPPLY ASSESSMENT**

## **National City Bayfront Projects**

**August 2019**



**Sweetwater Authority**

Prepared by  
Sweetwater Authority Staff

*National City Bayfront Projects  
Water Supply Assessment*



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## Section 1 – Introduction

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The City of National City and the San Diego Unified Port District (Port) are currently preparing an Environmental Impact Report (EIR) in accordance with the California Environmental Quality Act (CEQA), for the National City Bayfront Projects, with the Port serving as the CEQA Lead Agency for the EIR. The National City Bayfront Projects meets the definition of a “Project” as described in California Water Code Section 10912(a) and as such, a Water Supply Assessment (WSA) pursuant to Senate Bill (SB) 610 is required for the project. The National City Bayfront Projects includes the following developments:

1. A commercial and tourist development for
  - a. A 150-room hotel with an approximate size of 250,000 square feet (sf).
  - b. A restaurant with an approximate size of 15,500 sf.
  - c. Retail space with an approximate size of 12,000 sf.
2. A new connector rail track consisting of two 2,000 linear feet parallel sets of tracks for a total of 4,000 linear feet, plus maritime operations associated with Pasha Automotive Services.
3. Phase 1: Retaining the existing Pier 32 Marina and adding a Recreational Vehicle (RV) Park consisting of
  - a. 135 RV sites and 18,000 sf of supporting facilities such as administration building, restrooms, and a maintenance building.
  - b. 40,000 sf of dry boat open storage consisting of steel racks with no walls.
  - c. 60 modular cabins for overnight stays to be made from shipping containers. Each cabin will have 420 sf for a total of 25,200 sf.
  - d. Water features such as floating docks and gangways.

Phase 2: Remove 65 RV sites constructed in Phase 1, for a final configuration of 70 RV sites, and construct

- a. A 40-room hotel with a total of 50,000 sf.
  - b. A 60-room hotel and 16,500 sf of retail space for a total of 83,000 sf.
  - c. A 282-room hotel with a total of 500,000 sf.
  - d. An 81-room hotel with a total of 70,000 sf.
4. Expanding Pepper Park by 2.5 acres for a total size of 7.76 acres.
  5. Reconfigure maritime operations associated with the National City Marine Terminal.
  6. Closing 6.07 acres of Tideland Avenue and using the space for maritime operations associated with Pasha Automotive Services.

## **Section 2 – Identification of the Public Water Provider**

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In accordance with California Water Code (CWC) Section 10912(c), Sweetwater Authority is the “public water system” for the area in which the National City Bayfront Projects is proposed. As such, the Port, as the Lead Agency for CEQA, requested that Sweetwater Authority prepare a WSA. This request along with a 30-day extension from the Port to prepare the WSA are attached in Appendix A. The WSA is intended to be used by the City of National City and the Port in their evaluation of the Project under the CEQA process.

Sweetwater Authority was formed by the condemnation of a private water company that served the cities of Chula Vista and National City, and a portion of the County of San Diego. The condemnation suit was filed by the South Bay Irrigation District (SBID) and the City of National City on May 10, 1968, and was finalized on August 30, 1977. SBID and the City of National City formed Sweetwater Authority by the Joint Powers Agreement of February 1, 1972. The Agreement was amended and re-adopted on July 22, 1977. Sweetwater Authority was formed pursuant to the provisions of Article 1, Chapter 5, Division 7, Title 1, of the Government Code of the State of California. Sweetwater Authority is empowered by the Joint Powers Agreement to acquire, own, lease, operate, manage, maintain, and improve the water system.

SBID was formed in March 1951, under the Irrigation Law of California (Division 11, Section 20500 of the CWC), and includes the western area of the City of Chula Vista and the unincorporated area of Bonita within and adjacent to the Sweetwater River Valley. It also overlaps small segments of the cities of National City and San Diego. On May 1, 1990, SBID transferred ownership of the water system, including all of the property deeds and easements to Sweetwater Authority. The City of National City is part of the urbanized South Bay region of the San Diego metropolitan area located on the San Diego Bay. Incorporated in 1887, National City is the second oldest city in the County of San Diego. SBID and the City of National City are member agencies of the San Diego County Water Authority (CWA).

## **Section 3 – Previous Water Supply Assessments**

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Sweetwater Authority has prepared previous WSAs for other projects in National City, in consultation with CWA and the City of National City pursuant to Public Resources Code Section 21151.9, and CWC Sections 10631, 10657, 10910, 10911, 10912, and 10915 referred to as SB 610, and Business and Professions Code Section 11010. SB 610 amended State law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. The previous WSAs prepared for projects in the near vicinity of the National City Bayfront Projects and reviewed by Sweetwater Authority in preparation of this WSA are:

1. WSA for City of National City General Plan Update (January 26, 2011)
2. WSA for Westside Specific Plan (April 8, 2009)

## **Section 4 – Urban Water Management Plan**

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Sweetwater Authority prepares an Urban Water Management Plan (UWMP) every five years, in accordance with CWC Sections 10610 through 10656 of the Urban Water Management Planning Act (Act), which were added by Statute 1983, Chapter 1009, and became effective on January 1, 1984. The Act, which was Assembly Bill (AB) 797, requires that every urban water supplier providing water for municipal purposes to more than 3,000 customers, or supplying more than 3,000 acre-feet of water annually, shall prepare and adopt an UWMP in accordance with the pre-described requirements.

The Act requires urban water suppliers to file plans with the California Department of Water Resources (DWR) describing and evaluating reasonable and practical efficient water uses, reclamation, and conservation activities. As required by law, Sweetwater Authority's UWMP includes projected water supplies required to meet future demands. Sweetwater Authority prepared UWMPs in 1985, 1990, 1995, 2000, 2005, 2010, and 2015 and filed those UWMPs with DWR.

The Water Conservation Act of 2009, enacted on November 10, 2009, requires all water suppliers to further increase water use efficiency. The legislation, known as SBx7-7, sets an overall goal of reducing per capita urban water use by 20% by 2020. SBx7-7 requires that every urban water supplier shall include in its UWMP a status update regarding ability to meet the 2020 target. Sweetwater Authority's 2015 UWMP contains the SBx7-7 required elements.

On May 31, 2016, California Governor Jerry Brown signed into law two new bills that require urban water providers throughout California to set new permanent water use targets for their service areas by 2022. SB 606 and AB 1668 provide a framework for setting water use targets, as well as implementing and enforcing the new water use requirements. While many details for implementing the new water use requirements will be determined over the next several years, the overall framework includes:

- A standard for indoor residential water use of 55 gallons per person per day, dropping incrementally to 50 gallons beginning in 2030.
- A standard for outdoor residential water use (to be determined) based upon a community's climate and the amount of landscaped area.
- A standard for water loss due to leaks in water system pipes (to be determined).

There are no immediate impacts to Sweetwater Authority customers from SB 606 and AB 1668. Therefore, these future requirements do not impact the National City Bayfront Projects at this time.

The adopted 2015 UWMP did not account for the water demands associated with the National City Bayfront Projects. Therefore, in accordance with CWC section 10910(c)(3), and Government Code section 66473.7(a)(2), this WSA includes a discussion of whether Sweetwater Authority's total projected water supplies, available during normal, single dry, and multiple dry water years during a 20-year projection, would meet the projected water demand associated with the proposed project, in addition to Sweetwater Authority's existing and planned future uses, including agricultural and manufacturing uses. Applicable information from Sweetwater Authority's 2015 UWMP has been used in the preparation of this WSA.

## **Section 5 – Water Demands**

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### **5.1 Project Demand Analysis**

Sweetwater Authority's water system provides water service to approximately 191,000 consumers within the City of National City, a portion of the City of San Diego, and the SBID, which consists of a portion of the City of Chula Vista and the unincorporated portion of the County of San Diego known as Bonita. Sweetwater Authority's service area covers 32 square miles and contains approximately 33,224 service connections. In addition, the water system has emergency interconnections to three water agencies: Otay Water District, the City of San Diego, and the California American Water Company. At the present time, there are no plans for expansion of Sweetwater Authority's service area.

Projected demands for years 2020 through 2040 were calculated using the SANDAG 2050 Regional Growth Forecast for population and multiplying the population by 105 gallons per capita per day (GPCD). The GPCD represents the average demand in Sweetwater Authority's service area over fiscal years 2005 – 2015. This ten-year period included both wet and dry years, and also incorporates water savings that took place in recent years as a result of the drought. Therefore, the 105 GPCD rate is considered to be a realistic anticipation of future water demands under a variety of hydrologic conditions and taking into consideration long-term water savings.

#### **5.1.1 Climate**

Climate conditions within the service area are characteristically Mediterranean along the coast, with mild temperatures year-round. The majority of the service area is within two miles of the San Diego Bay. However, the Bonita area and the reservoirs are located farther inland, and experience slightly hotter summers and colder winters. More than 80 percent of the region's rainfall occurs in the period from December through March. Average annual rainfall is approximately 11.3 inches per year at the Sweetwater Reservoir based on records dating back to 1888. Climate data is included in Table 1, and consists of the 131-year Sweetwater Reservoir average monthly rainfall, and

Sweetwater Reservoir's average monthly high temperature based on records dating back to 1961. Average monthly evapotranspiration (ETo) data was obtained from the California Irrigation Management Information System (CIMIS) website for the Otay Lakes Station.

**Table 1  
 Climate Data**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Ave precip (in.)	2.14	2.16	1.91	0.83	0.36	0.07	0.05	0.06	0.19	0.60	1.05	1.89
Ave temp (°F)	69.8	69.6	70.3	72.8	73.8	77.1	82.7	85.3	83.7	80.0	74.6	69.1
ETo	2.24	2.72	4.11	4.91	5.37	5.99	6.32	6.05	4.86	3.84	2.74	2.00

### 5.1.2 Population

Population and housing growth data for Sweetwater Authority's service area was obtained from the SANDAG 2050 Regional Growth Forecast Series 13 Model for years 2020 through 2040. The projections predict that Sweetwater Authority's service area will increase in population by approximately 17% from 2019 to 2040, which represents an annual growth rate of less than 1% per year. These estimates do not include potential increases in population due to the National City Bayfront Projects as this is a development that is not proposing housing, but do include other redevelopment projects identified in Chula Vista's Vision 2020 General Plan, the Port's Chula Vista Bayfront Master Plan, and National City's Downtown Specific Plan and Westside Specific Plan.

Population projections are shown in Table 2 and are the same as those calculated for Sweetwater Authority's 2015 UWMP.

**Table 2  
 SANDAG Population**

	2019	2020	2025	2030	2035	2040
SANDAG 2050 Population Projection	190,654	191,244	194,318*	200,286	213,907	222,966

\* SANDAG's Series 13 projections show a population decrease in the South Bay Irrigation District's (SBID) service area between 2020 and 2025; however, this population decrease could not be justified. Therefore, Sweetwater Authority has adjusted the 2025 population for its service area by interpolating between SANDAG estimates for SBID from 2020 to 2030. This interpolation modifies the 2025 population from 191,664 per the SANDAG Series 13 model to 194,318 as shown in Table 2.

### 5.1.3 Demand Assessment

Table 3 shows the historical and projected water demands by use sector through 2040. The projected water demands below were calculated using the population estimates in Table 2 and multiplying them by 105 GPCD. These total water demands through 2040 are identical to those presented in Sweetwater Authority's 2015 UWMP; however, estimated water demands per sector might differ slightly from those presented in

Sweetwater Authority's 2015 UWMP because the UWMP did not include water estimates for non-revenue water. Non-revenue water is the amount of water that is not accounted for in Sweetwater Authority's water usage, such as water used for firefighting purposes, water lost through water leaks, and water not accounted for due to discrepancies in water meter accuracy.

**Table 3**  
**Historical and Projected Potable Water Demands**  
**(Not including the National City Bayfront Projects)**  
**(acre-feet)**

Water Use Sectors	Fiscal Year Ending <sup>1</sup>								
	2000	2005	2010	2015	2020	2025	2030	2035	2040
Residential <sup>2</sup>	16,884	16,094	14,151	13,163	15,391	15,645	16,120	17,215	17,944
Commercial <sup>3,4</sup>	4,320	4,407	3,721	3,750	4,385	4,457	4,592	4,905	5,113
Industrial	411	405	291	131	153	155	160	171	178
Public (Landscape)	1,742	1,897	1,781	1,391	1,626	1,652	1,703	1,819	1,896
Irrigation/Agricultural	44	31	21	0	0	0	0	0	0
Other <sup>5</sup>	18	42	16	28	33	33	34	37	38
Non-Revenue Water	2,422	694	814	770	900	914	942	1,006	1,049
<b>Total</b>	<b>25,841</b>	<b>23,570</b>	<b>20,795</b>	<b>19,233</b>	<b>22,488</b>	<b>22,856</b>	<b>23,551</b>	<b>25,153</b>	<b>26,218</b>

Notes:

1. Fiscal Year July 1 through June 30
2. Residential includes domestic and irrigation for single-family, multi-family, and mobile homes.
3. Commercial includes domestic and irrigation for businesses and golf courses.
4. Prior to Fiscal Year 1991-92, commercial included mobile homes and apartments. Beginning in Fiscal Year 1991-92, mobile homes and apartments have been included in residential.
5. "Other" included construction meters and golf courses through Fiscal Year 1989-90. Subsequent to Fiscal Year 1989-90, "Other" only includes construction meters.

The National City Bayfront Projects consist of six different projects and the estimated demands for each project are shown in Table 4. Per email communication with the Port dated July 18, 2019, Project Nos. 1, 2, 3 (Phase 1), 4, 5, and 6 are expected to be completed by 2022, while Project No. 3 (Phase 2) is expected to be completed by 2025.

The demands in Table 4 for year 2025 were developed by Sweetwater Authority based on project areas and number of hotel rooms provided by the Port; water usage per equivalent dwelling unit established in Sweetwater Authority's 2016 Water Capacity Fee

Report; actual audited water use data for commercial, industrial, and public (landscape) land use types within Sweetwater Authority’s service area for Fiscal Year (FY) 2018; and total acreage within Sweetwater Authority’s service area for the aforementioned land use types. Since the National City Bayfront Projects is expected to be built out by 2025, calculated demands for 2025 were carried over to years 2030, 2035, and 2040 since no new demands will be anticipated after the year 2025.

**Table 4  
 National City Bayfront Projects Projected Water Demands**

Project No. <sup>1</sup>	Land Use <sup>1</sup>	Acres <sup>1</sup>	Water Use <sup>2</sup> (gal/ac/day)	Projected Water Demand (acre-feet/year)				
				2020	2025	2030	2035	2040
1	Commercial (Hotels, Restaurants and Retail)	6.2	3,052	0	20.4	20.4	20.4	20.4
2	Industrial (Marine-Related Industrial)	6.8	54	0	0.4	0.4	0.4	0.4
3	Commercial (Hotels, RV Park, Boat Storage, etc.)	21.2 (land) 25.7 (water)	3,052	0	75 <sup>3</sup>	75 <sup>3</sup>	75 <sup>3</sup>	75 <sup>3</sup>
4	Landscape (Park/Plaza)	7.76	483	0	4.2	4.2	4.2	4.2
5	Industrial (Marine Terminal)	6.76	54	0	0.4	0.4	0.4	0.4
6	Industrial ( Marine-Related Industrial)	6.07	54	0	0.4	0.4	0.4	0.4
<b>Total</b>				<b>0</b>	<b>100.8</b>	<b>100.8</b>	<b>100.8</b>	<b>100.8</b>

Notes:

1. Based on the Port’s transmittal to Sweetwater Authority dated April 26, 2019.
2. Based on actual FY 2018 audited consumption within Sweetwater Authority’s service area for each land use type, while using total acreage for commercial, industrial, and parks/recreation land use types identified in Sweetwater Authority’s 2015 Water Distribution System Master Plan.
3. Demands for project no. 3 are based on the 21.2 acres for land and exclude the 25.7 acres of water.

Revised water demands for Sweetwater Authority’s service area including the National City Bayfront Projects are shown in Table 5. The total water demands associated with the National City Bayfront Projects were not included in any of Sweetwater Authority’s previous UWMPs. In addition, the total water demands have not been specifically included in CWA’s 2015 UWMP. However, the water demands from the National City Bayfront Projects can be met by purchasing additional water from CWA.

**Table 5  
 Historical and Projected Potable Water Demands  
 (Including the National City Bayfront Projects)  
 (acre-feet)**

Water Use Sectors	Fiscal Year Ending <sup>1</sup>								
	2000	2005	2010	2015	2020	2025	2030	2035	2040
Residential <sup>2</sup>	16,884	16,094	14,151	13,163	15,391	15,645	16,120	17,215	17,944
Commercial <sup>3,4</sup>	4,320	4,407	3,721	3,750	4,385	4,553	4,688	5,001	5,209
Industrial	411	405	291	131	153	156	161	172	179
Public (Landscape)	1,742	1,897	1,781	1,391	1,626	1,656	1,707	1,823	1,900
Irrigation/ Agricultural	44	31	21	0	0	0	0	0	0
Other <sup>5</sup>	18	42	16	28	33	33	34	37	38
Non-revenue Water	2,422	694	814	770	900	914	942	1,006	1,049
<b>Total</b>	<b>25,841</b>	<b>23,570</b>	<b>20,795</b>	<b>19,233</b>	<b>22,488</b>	<b>22,957</b>	<b>23,652</b>	<b>25,254</b>	<b>26,319</b>

**Notes:**

1. Fiscal Year July 1 through June 30
2. Residential includes domestic and irrigation for single-family, multi-family, and mobile homes.
3. Commercial includes domestic and irrigation for businesses and golf courses.
4. Prior to Fiscal Year 1991-92, commercial included mobile homes and apartments. Beginning in Fiscal Year 1991-92, mobile homes and apartments have been included in residential.
5. "Other" included construction meters and golf courses through Fiscal Year 1989-90. Subsequent to Fiscal Year 1989-90, "Other" only includes construction meters.

## **Section 6 – Demand Management Measures**

Sweetwater Authority recognizes water conservation as a priority in its water use planning to manage water demand. The long-term goal of Sweetwater Authority's water use efficiency program is to achieve and maintain water conservation goals for various use categories that are reasonable for that category. Specific objectives of Sweetwater Authority's water use efficiency program are:

- Eliminate wasteful practices in water use
- Continue to develop information on both current and potential water conservation practices
- Ongoing, timely implementation of conservation practices
- Public information and education activities to spread knowledge of efficient water use techniques and devices

Sweetwater Authority started a water conservation program in 1990. Initial efforts included a long-term public information program and cooperation with the conservation efforts of CWA. The water conservation program expanded significantly during the 1987-1992 drought, and the backbone of a long-term efficiency program was formed. Since that time and including the 2014-2017 drought, Sweetwater Authority has continued to revamp the conservation program by developing a variety of innovative and effective approaches to demand management.

Water use efficiency programs are developed and implemented on the premise that water conservation increases water supply by reducing the demand on available supply, which is vital to the optimal use of the region's supply resources. Sweetwater Authority actively participates in countywide and regional demand management programs through CWA and Metropolitan Water District of Southern California (Metropolitan). As a member of CWA, Sweetwater Authority benefits from regional programs performed on behalf of its member agencies. Sweetwater Authority also participates in water use efficiency programs operated on a shared-cost basis among CWA, Metropolitan, and their member agencies.

The vast majority of water savings results from the installation of residential and commercial Ultra Low Flow Toilets (ULFT), High Efficiency Toilets (HET), and High Efficiency Washers (HEW). In 2008, Sweetwater Authority shifted emphasis towards more water efficient landscaping and commercial appliances. These programs continue to evolve. The resulting savings in supply from these programs and State mandated water conservation measures directly relates to additional available water in the San Diego region for beneficial use within CWA's service area, including Sweetwater Authority. In partnership with CWA, and local land use agencies, Sweetwater Authority's water use efficiency efforts are expected to grow and expand.

Sweetwater Authority's fiscal year 2019-20 adopted budget includes just over \$159,000 for water use efficiency education and customer incentive programs which complement the regional conservation programs available to Sweetwater Authority customers. These programs also reduce local and imported water demand.

Demonstrating its commitment to conservation, Sweetwater Authority officials became an original signatory to the *Memorandum of Understanding (MOU) Regarding Urban Water Conservation in California*, which created the California Urban Water Conservation Council (CUWCC) in 1991 in an effort to reduce California's long-term water demands. As defined in the MOU, one of several water conservation Best Management Practices (BMP) was "a policy, program, practice, rule, regulation or ordinance or the use of devices, equipment or facilities which meets either of the following criteria: (a) An established and generally accepted practice among water suppliers that results in more efficient use or conservation of water; (b) A practice for which sufficient data are available from existing water conservation projects to indicate that significant conservation or conservation related benefits can be achieved; that the practice is technically and economically reasonable and not environmentally or socially

unacceptable; and that the practice is not otherwise unreasonable for most water suppliers to carry out.”

From the time Sweetwater Authority became a signatory in 1991 until the BMPs were terminated in 2014, Sweetwater Authority made implementation of the CUWCC BMPs for water conservation a foundational element of its demand management programs, and a key component in its water resource management strategy. In 2014, sections of the California Water Code were significantly modified to address new demand management measures, technologies, and approaches to water use efficiency. These revisions have been incorporated into Sweetwater Authority’s water use efficiency programs and resulting demand management measures. The current demand management measures implemented by Sweetwater Authority are described below.

## **6.1 Water Waste Prevention**

The following water waste prohibitions are designed to encourage efficient water use within the region, and provide a method for meeting demand reduction goals, should an extended water shortage occur.

Regional - The County of San Diego enforces several state and local ordinances requiring water conservation, to assure available water resources are put to beneficial use for all citizens of the county. California Plumbing Code, Section 402, requires the installation of water conserving fixtures in new construction. Section 67.101 of the County’s Code of Regulatory Ordinances simply prohibits water waste: “No person shall waste or cause or permit to be wasted any water furnished or delivered by any agency distributing for public benefit any water dedicated to or provided for public use within the unincorporated territory of the county of San Diego.”

In addition, the State Legislature determined in the Water Conservation in Landscaping Act (Government Code sections 65591 et seq.) that the State’s water resources are in limited supply. The Legislature also recognized that while landscaping is essential to the quality of life in California, landscape design, installation, maintenance, and management must be water efficient. Land use agencies including the cities and counties are required by the Act to enforce California’s Model Water Efficient Landscape Ordinance, or a similar ordinance which is at least as effective. For property within the County of San Diego, Section 6717(c)(1) of the County’s Zoning Ordinance meets this requirement as it applies to new and rehabilitated public and private landscapes that require a permit on developer installed residential landscapes. The County’s Water Conservation and Landscape Design Manual implements Zoning Ordinance Section 6712(d), which requires efficient irrigation uses (including rain sensors), transitional zones, use of native plantings, restriction on turf, use of mulch, the preservation of existing vegetation and natural features, and the use of reclaimed water when available.

Within the City of Chula Vista, landscape water efficiency is regulated through the City of Chula Vista Landscape Water Conservation Ordinance (Chapter 20.12). The general purpose of this chapter is to establish water use standards for landscapes in Chula Vista that implement the landscape design requirements established by the Water Conservation in Landscaping Act. Similarly, the City Council of the City of National City passed Ordinance 2010-2331 amending Title 18 of the Municipal Code by amending Chapter 18.54 establishing water efficient landscape regulations. The City of National City's landscape regulations were subsequently amended in 2015 and reaffirmed in Chapter 18.44.190.

Agency - Resolution 14-18, passed on September 24, 2014, adopted Sweetwater Authority's drought response plan. For use during emergency conditions such as drought or catastrophic interruption in service where additional water use restrictions are necessary, Sweetwater Authority's drought response plan established a four-level drought response plan allowing for water use cutbacks up to 40% or more, and established an allocation method of rationing water during drought levels. The plan sets customer guidelines for water conservation.

Resolution 15-18, passed June 24, 2015, amended Sweetwater Authority's drought response plan to align with state-wide emergency regulations imposed by the State Water Resources Control Board in response to statewide water supply conditions. In September 2014, a Level 2 Drought Watch was declared, which implemented mandatory water use restrictions. The activation of a Level 2 Drought Alert from Level 1, which had essentially been in effect since 2008, came after the implementation of statewide mandatory water use restrictions and mandatory water reduction of 25%.

Sweetwater Authority's drought response plan was subsequently revised multiple times from 2014 through 2016 in response to state activities and mandates. The current drought response plan adopted with Resolution 16-10, attached in Appendix B, passed on June 22, 2016. Also on June 22, 2016, Sweetwater Authority's Governing Board voted to rescind the Level 2 Drought Alert and resume a Level 1 Drought Watch status, following action taken by the State Water Resources Control Board to adopt a statewide water conservation approach that replaced the prior percentage-based water conservation standard. This new approach to water conservation is due to improved water supply conditions across the entire state, investments in drought-resistant local water supplies, and strong conservation efforts by all Californians. The new standard requires water agencies to self-certify the level of available water supplies assuming three additional dry years. Agencies that face a supply shortage after the third dry year will have a conservation standard equal to the shortage.

On April 7, 2017, Governor Jerry Brown officially declared a five-year long drought over in most of California, lifting the state-wide drought emergency that had been in effect since January 2014. The declaration left in place the requirement that agencies report on their urban water usage, and continued the prohibition on eight wasteful water practices. On May 31, 2018, Governor Jerry Brown signed into law two new bills that

will require urban water providers throughout California to set new permanent water use targets for their service areas by 2022. SB 606 and AB 1668 provide the framework; however, there are no immediate effects on Sweetwater Authority customers from these new laws.

## **6.2 Metering**

All service connections located within Sweetwater Authority's service area are metered. Sweetwater Authority requires the installation of water meters on all new services throughout its distribution system and bills by volume of water metered.

## **6.3 Conservation Pricing**

Sweetwater Authority's water rate structure is set up as an increasing block rate, which increases the cost of water in four tiers for single-family residential use. This encourages single-family residential users to limit their water use by charging more for units above a base amount. New rates became effective on January 1, 2019 with the adoption of Resolution 18-22, following the Water Rate Study produced in 2018.

The Tier 1 rate applies to all single-family residential customers for their first 10 hundred cubic feet (HCF) of bi-monthly water use. Rates increase with increased water use up to Tier 4, which applies to customers with a bi-monthly water use greater than 27 HCF. All other water users such as multi-family, commercial, industrial, public, and construction are billed at a single uniform rate, which is between the third and fourth tier rate of the residential customer for multi-family, commercial, and industrial users, and above the fourth tier for public agencies and construction use. Resolution 18-22 allowed charges from CWA and Metropolitan to Sweetwater Authority to be passed-through to customers, which can range from \$1.05/HCF to \$2.07/HCF depending on the Tier for single-family residential or the customer classification if not single-family residential.

## **6.4 Public Education and Outreach**

Wholesale Agency Assistance Program – This demand management measure applies only to wholesale agencies. CWA provides conservation-related technical support and information to its member agencies, and manages regional programs on behalf of its member agencies. Sweetwater Authority, CWA, and Metropolitan share funding for some conservation incentives.

Public Information Programs – Sweetwater Authority promotes water conservation in coordination with the Water Conservation Garden, local land use agencies, neighboring water agencies, CWA, and Metropolitan. Regional activities include: public service announcements, demonstration gardens, conservation strategy meetings, water awareness month activities, water efficiency workshops, and landscape water use classes and contests. Sweetwater Authority independently distributes public information through its website, social media accounts, bill inserts, on-hold telephone messages,

annual Consumer Confidence Report/Calendar, newsletters, news releases, brochures, keynote speakers, classroom presentations, facility tours, video library, and participation in year-round special events and community festivals. Sweetwater Authority participates in regional drought, conservation, and environmental stewardship public outreach programs including the WaterSmart programs, the WaterSense Program from the Environmental Protection Agency, Climate Change Workgroups, and city Clean-Green programs.

- *Literature-Brochures.* Sweetwater Authority provides brochures and literature on a variety of water conservation topics including gray water, lawn watering, Xeriscape planting, WaterSmart, California Friendly and Naturescape gardening, drip irrigation, swimming pool maintenance, leak detection, and general household conservation tips. These are made available to residents through a literature rack at Sweetwater Authority's Administration Office and website, through individual and group mailings, through distribution to residential complex managers, through online and electronic media, and through distribution at public appearances by Sweetwater Authority Board members and staff.
- *Newsletters/Brochures.* Sweetwater Authority publishes a consumer newsletter, "On Tap" quarterly, incorporating conservation tips and programs. Brochures are developed and distributed to deal with specific conservation issues and to provide detailed information on drought response measures. Drought Information is provided in English and Spanish and bulk mailed to all physical addresses in Sweetwater Authority's service area.
- *Personal Letters and Emails.* Sweetwater Authority sends a personalized letter or email to notify consumers of reported or observed water waste on their property. These documents are sent to elicit cooperation in Sweetwater Authority's efforts to use water efficiently, and are sent with appropriate conservation materials, such as a lawn-watering guide, leak detection information, or general conservation tips.
- *Seminars.* Sweetwater Authority works with local agencies to cooperatively host periodic conservation seminars for groups of water users, targeted toward high water use consumers, or toward specific types of use. These seminars include information on current water saving methods and devices, and contacts for additional assistance and information, as well as a summary of local agency information and contact persons for cooperative efforts between Sweetwater Authority and its consumers.
- *Speakers Bureau.* Sweetwater Authority staff are available to address civic and community groups, clubs, associations, and other organizations on a wide variety of water issues. Speakers provide conservation handouts to interested audience members at these appearances. The Sweetwater Authority speakers' bureau is promoted through involvement in civic groups, through the customer newsletter,

through letters to local libraries and schools, and through periodic newspaper announcements of availability.

- *Committees.* Sweetwater Authority maintains a permanent Communications Committee to provide assistance and suggestions to staff regarding water awareness issues. This committee can be convened as needed to provide assistance and suggestions to staff regarding conservation issues and address consumer concerns resulting from water reduction allocations.
- *Exhibits and Related Materials.* Sweetwater Authority is an agency member of the Water Conservation Garden at Cuyamaca College. This garden promotes water conservation, has over 5 acres of displays, and offers a variety of water conservation educational programs. Sweetwater Authority also participates in local business and community fairs to distribute water-saving devices, conservation literature, and to answer consumer questions face-to-face. Materials are provided to local merchants and libraries for their distribution and displays on general water conservation issues. Sweetwater Authority also partners with neighboring water agencies to put on water conservation public awareness events, including water-efficiency technology expos and landscape contests.

Sweetwater Authority partners with the Living Coast Discovery Center to provide displays featuring relationship of good water stewardship to environmental sustainability. Sweetwater Authority also promotes sustainable water practices and water conservation through partnerships with the City of Chula Vista's Green programs, Climate Change Initiatives, and Naturescape Program.

- *News Relations.* Sweetwater Authority provides formal press releases and feature story information to local print, radio and television reporters, as well as to trade and special interest publications.
- *Advertising.* Sweetwater Authority has purchased advertising or content space in local newspapers, and chamber publications to promote water conservation and understanding of water issues. Sweetwater Authority monitors Facebook and social media posts and strategically purchases boosts, retweets etc. to increase message exposure.

School Education Programs – Since 1991, Sweetwater Authority has had an active school education program, which includes water conservation messages. Sweetwater Authority currently has two partnerships to educate students in its service area. The Hydro Station is a partnership with the Chula Vista Elementary School District and Otay Water District. In this experience, more than 4,000 fifth grade students will visit Sweetwater Authority's Richard A. Reynolds Groundwater Desalination Facility and learn about careers in the water industry.

In 2018, Sweetwater Authority established a partnership with Olivewood Gardens located in National City. This program sees 2,500 students per year and curriculum includes information on water efficiency and the safety of drinking tap water.

Sweetwater Authority provides funding for the Water Conservation Garden's Ms. Smarty Plants school programs and assemblies. These activities are fact-filled and engage students in water conservation, their relationship with ecosystems and inspire critical thinking skills related to the efficient use of water. Programs meet or exceed CA State Standards and Next Generation Science Standards. E-STEAM and Common Core are incorporated.

Sweetwater Authority also participates in CWA's countywide education programs. CWA offers students from kindergarten through high school, a wide array of educational opportunities including water testing kits, and computer programs.

- *Junior and Senior High School Education Programs.* Sweetwater Authority hosts an annual High School Photo Contest with schools in its service area. The winning photos are selected and used in the annual Water Quality Report which also serves as a calendar. Cash prizes are awarded to the students.
- *Mini-Grant Program for Local Schools.* Sweetwater Authority provides mini-grants to teachers for the development and presentation of water-based lessons, to assist with providing conservation demonstration gardens at local school sites, and to host use of San Diego County's Splash Science Lab and Green Machine at local schools.

## 6.5 System Loss Programs

System Water Audits, Leak Detection, and Repair – Sweetwater Authority's system water audits, leak detection, and repair programs contribute to better water management and reduction in real and apparent water loss.

- *Water Audits.* Sweetwater Authority conducts annual water audits of its water distribution system, which comply with the requirements of SB 555, to identify real (physical) and apparent (non-physical) system water losses. Sweetwater Authority also conducts a monthly assessment of its distribution system for unbilled and non-revenue water loss. Using these comparisons, Sweetwater Authority can evaluate the need for implementation of a formal water loss reduction program. System loss is determined by comparing total water use with total water production. Sweetwater Authority's 12-month average water loss was 2.6% as calculated in a recent water audit.
- *Leak Detection.* A Supervisory Control and Data Acquisition (SCADA) system was installed in the distribution system in 2001, and is used to monitor water flow throughout the system. Rapid changes in water quantity and/or pressure at any

of the monitoring points within the system are immediately evaluated. Leaks are rare, and with this system, they are quickly detected and corrected. A leak detection survey was performed on 19.49 miles of the distribution system in September 2002. There was no total annual water loss for surveyed portions of the system.

- *Water System Improvements.* Routine and preventative maintenance is performed on the distribution system. In addition, Sweetwater Authority implements a capital improvement program to maintain and renew transmission, distribution, and storage facilities.
- *Facility Inspection.* Critical facilities, including pump stations and valve vaults, are inspected bi-weekly. Other distribution facilities are inspected weekly. As part of Sweetwater Authority's preventative maintenance program, each system valve is exercised at least every three years, and each fire hydrant is visually inspected and maintained every one to two years.
- *Meter Maintenance and Replacement Program.* A 15-year repair/replacement program covers every service meter within Sweetwater Authority system. Meters sized below  $\frac{5}{8}$ -inch are volumetrically tested and replaced as needed. Meters sized 1- $\frac{1}{2}$  to 2-inches are calibrated and rebuilt as necessary. Consumer meters sized at 3-inches and larger are calibrated and maintained annually.
- *Water Theft.* Sweetwater Authority monitors incidents of water theft, and has the ability to charge up to three times the water service rate when it is determined that water theft has occurred.

## 6.6 Water Conservation Coordinator

Sweetwater Authority first designated a Conservation Coordinator in 1991. During this same year, Sweetwater Authority used three temporary staff positions to handle the increased volume of conservation-related activities caused by the drought. In June 1992, a Water Conservation – Information Specialist staff position was created. Sweetwater Authority currently has a Program Manager, Program Specialist, and Program Analyst, who manage and administer the water use efficiency program.

## 6.7 Other Demand Management Measures

Residential Programs – The following programs are available to Sweetwater Authority's residential customers to reduce residential water use and improve water use efficiency.

- *Water Survey Programs for Single-Family and Multi-Family Residential Consumers.* The Residential Survey Program is free to both single-family and multi-family residential consumers and has been available since 1995. The program helps consumers learn how to save water in their own homes, which in

turn saves the consumers money. The survey is customized to the property and may include a review of landscaping, outdoor irrigation system, indoor use, identification of indoor leaks, a complete educational packet, information about other water conservation programs, and free faucet aerators and low-flow showerheads. An irrigation surveyor may perform a meter leak detection test, check the irrigation system, suggest seasonal adjustments for a consumer's individual water schedule, check the soil to ensure that watering coincides with moisture absorption, discuss proper lawn maintenance, and offer low water use landscape information.

- *High-Efficiency Washing Machine Rebate Program.* Since 2000, Sweetwater Authority has participated in CWA's rebate program. New technology in washing machine design provides for more efficient water use and savings. Residential and commercial consumers have taken advantage of the up to \$185 rebates to replace their standard top-loading washers with low-water use, energy-efficient models. The current rebate is \$135. Prior to March 10, 2004, high-efficiency washers had water efficiency factor values of 9.5 or less. With greater availability of ultra-high efficiency washers, rebates are now limited to machines with an integrated water factor of 3.7 or less. The integrated water efficiency factor is determined by the amount of water it takes to wash a cubic foot of laundry. The lower the efficiency factor, the greater the water efficiency of the clothes washer.
- *Residential Toilet Replacement Program.* Since 1991, Sweetwater Authority has participated in regional Ultra Low Flow and High Efficiency Toilet voucher and/or rebate programs offered by CWA and Metropolitan. The current program offers rebates to multi-family residential consumers who have purchased water efficient devices to replace older, less efficient units. Since 1992, toilets manufactured in the United States must comply with a 1.06 gallons per flush (gpf) maximum flow. Toilets with consistently lower water use continue to be developed. Beginning in 2008, rebates are only available for high efficiency and dual flush toilets to encourage customers to install toilets that have met more rigorous water efficiency standards.
- *Single-Source Gray Water Retrofit Rebates.* Since 2013, Sweetwater Authority has offered residential customers a \$75 towards the purchase and installation of laundry-to-landscape gray water systems.
- *Carwash Rebates.* Sweetwater Authority customers are eligible to receive a reimbursement of up to \$10 in the form of a bill credit for up to 4 washes per year. Carwashes must be located within Sweetwater Authority's service area and the carwash provider must reclaim and recycle their water.

Large Landscape Conservation Programs and Incentives – From 1991 to 2004, large landscape (defined as landscape with one acre or more) irrigation surveys were available to consumers at no charge through the *Professional Assistance for Landscape*

*Management (PALM)* program, sponsored by CWA. Using methodology developed by the Irrigation Training and Research Center at California Polytechnic State University at San Luis Obispo, the surveyor performs catch can tests, makes numerous soil and plant observations, and calculates ETo based irrigation schedule.

Beginning in 2005, residential and commercial consumers with large landscapes (initially defined as over 2,000 square feet) are eligible to receive the following services at no charge through the programs sponsored by Sweetwater Authority, CWA, Metropolitan, and DWR. These programs are available for limited durations and routinely adjusted in response to participation levels and overall verifiable water savings achieved:

- *Landscape Transformation Program.* Customers can receive a rebate for replacing turf with sustainable landscaping features through this program sponsored by CWA and Metropolitan.
- *Landscape Irrigation Audits.* Audits are available at no charge to residential and commercial consumers with a minimum of 1 acre of irrigated landscaping. Site audits include a review of irrigation conditions, watering schedule, and sprinkler distribution uniformity by a trained technician. Landscape area measurement and water use recommendations are provided.
- *Weather-Based and Soil Moisture Sensor Irrigation Controllers.* Rebates are available to residential and commercial consumers with irrigated landscaping for weather-based irrigation controllers to retrofit old timers, and/or to add soil moisture sensors to an existing compatible irrigation controller.
- *Rotating Irrigation Nozzles.* Rebates are available for rotating irrigation nozzles. Rebates are only available for devices listed on the Qualified Product List, maintained by Metropolitan. No site size minimum applies to this incentive program; however the current rotating nozzle rebate is only available in quantities of 30 or greater per eligible customer.
- *Cisterns.* Customers can receive a rebate for installing a cistern to collect rainwater from their roofs, which can be used for irrigation. The rebate amount depends on the size of the cistern installed.

Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts – Sweetwater Authority participates in the Metropolitan's *Save Water, Save a Buck* program which offers rebates to consumers for water-efficient devices. A limited number of rebates are available for commercial plumbing fixtures (high efficiency toilets, high efficiency ultra-low-flow and waterless urinals), cleaning equipment (single and multi-load commercial clothes washers and water brooms) water efficient medical equipment (X-ray processors, dry vacuum pumps, and steam sterilizer retrofits), food service equipment (connectionless food steamers, air cooled ice machines, and spray

valves used for pre-rinsing dishes in commercial kitchens), and cooling tower conductivity controllers. New rebates are added to the program, and rebate values are adjusted as water savings potentials are validated. The rebates reduce the costs for businesses, and the equipment produces long-term savings in water, sewer, and energy costs.

- *Water Savings Performance Program.* The Water Savings Incentive Program (WSIP) is designed for non-residential customers improving their water efficiency through upgraded equipment or services that do not qualify for standard rebates. WSIP is unique because it provides an incentive based on the measured amount of water saved. This “pay-for-performance” design lets customers implement custom projects for their sites. Any project that saves at least 10,000,000 gallons of water could qualify. Metropolitan provides this incentive which is pays up to \$0.60/1,000 gallons of water saved.
- *Grants.* Sweetwater Authority offers grants of up to \$5,000 each for water efficiency projects in the Authority’s service area. Current grant programs are the Savings Through Efficiency Program (STEP) and the Water Efficiency Education Program (WEEP). STEP provides grant funding for commercial, industrial, and institutional customers for equipment retrofits or innovative projects or devices which maximize water use efficiency. WEEP provides grant funds for publicly accessible educational displays, programs, projects, or instructional media that teaches the importance of using water efficiently.

As more and better data are collected over time, the demand management measures are refined and revised based upon the most objective criteria available. Agency-specific implementation schedules and coverage goals are based on industry best practices, standardized criteria, and state requirements.

## **6.8 Effect of Demand Management Measures on Projected Water Demands**

Water conservation as a result of the demand management measures described in this WSA are not accounted for in the projected water demands for the National City Bayfront Projects and Sweetwater Authority’s service area; therefore, the projected demands are conservative and support the conclusion found in Section 9 of this WSA.

## **Section 7 – Water Supply**

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Water used in Sweetwater Authority's service area comes from various sources. These sources include local fresh groundwater, brackish groundwater, surface water, and imported water from the Colorado River and the State Water Project. The imported water is delivered by CWA, either purchased from or wheeled by Metropolitan, and is then purchased by Sweetwater Authority. Imported water can either be purchased as

treated water or as untreated water, with treatment at Sweetwater Authority's Robert A. Perdue Water Treatment Plant. Since 1955, local sources have met approximately 45 percent of the water needs within Sweetwater Authority's service area, while the 55 percent balance has been met with imported water. The percentage of local to imported water can vary greatly year to year due to local rainfall amounts.

## **7.1 Local Supply**

### **7.1.1 Surface Water Sources**

Sweetwater Authority has a variety of senior water rights on the Sweetwater River which allow it to divert water from the Sweetwater River. These rights include pre-1914 appropriative rights perfected under common law and early California statutes, modern appropriative rights under the auspices of the State Water Resources Control Board, and rights to enforce restrictive covenants on parcels of land in the Middle Sweetwater River. All of Sweetwater Authority's water rights in the Sweetwater River, including pre-1914 water rights, were previously owned by the South Bay Irrigation District (SBID), which acquired them in 1977 by eminent domain from California American Water and through license on Loveland Reservoir in March 1985. These water rights transferred to Sweetwater Authority in 1990 when SBID transferred all of its assets to Sweetwater Authority.

Sweetwater Authority owns and operates two storage reservoirs known as Sweetwater Reservoir and Loveland Reservoir, which were constructed in 1888 and 1945, respectively, and are used to divert and retain water from the Sweetwater River. Sweetwater Reservoir has an approximate capacity of 28,079 acre-feet, and Loveland Reservoir has an approximate capacity of 25,387 acre-feet, for a combined capacity of 53,466 acre-feet. The watershed for the Sweetwater River is approximately 230 square miles and both reservoirs are located in this watershed. Sweetwater Reservoir is downstream of Loveland Reservoir and has an adjacent treatment plant capable of producing 30 million gallons of water per day (MGD). Local supply from Sweetwater Reservoir varies from zero to 100 percent depending on local runoff conditions. To make use of the local supply from Loveland Reservoir, Sweetwater Authority releases water through the dam's Bunger valve so water can travel downstream through the Sweetwater River and make its way to Sweetwater Reservoir; however, Sweetwater Authority can only transfer water from Loveland Reservoir to Sweetwater Reservoir when river and environmental conditions are optimal. Sweetwater Authority last completed a water transfer from Loveland Reservoir to Sweetwater Reservoir in February to March 2019.

During wet years when Sweetwater and Loveland Reservoirs are at or near full capacity, they are capable of providing up to a two-year supply to Sweetwater Authority customers. Surface water production for the past sixteen fiscal years is shown below in Table 6.

**Table 6**  
**Surface Water Production from 2004 through 2019**

<b>Fiscal Year Ending</b>	<b>Total Surface Water Produced (acre-feet)</b>
2004	1,595
2005	7,011
2006	10,276
2007	590
2008	3,647
2009	4,427
2010	898
2011	8,165
2012	10,253
2013	12,927
2014	3,961
2015	0
2016	0
2017	1,675
2018	6,621
2019	3,351

Note: Local supply from Sweetwater Reservoir for fiscal years ending in 2015 and 2016 was zero due to regional drought conditions.

### **7.1.2 Groundwater Sources**

Sweetwater Authority produces groundwater from the Coastal Plain of San Diego Groundwater Basin (CPSD Basin) identified in the State of California Department of Water Resources (DWR) Bulletin 118 as Basin Number 9-033. Sweetwater Authority adopted an interim groundwater management plan in November 2001 that governs groundwater management until a groundwater management plan could be prepared in accordance with Water Code Section 10750 (AB 3030). The interim groundwater management plan is included as Appendix C. However, in 2014, the State of California passed the Sustainable Groundwater Management Act (SGMA), so instead of preparing an AB 3030 groundwater management plan, which are no longer permitted, Sweetwater Authority is currently in the process of preparing a Groundwater Sustainability Plan (GSP) in accordance with SGMA. DWR has designated the CPSD Basin a low priority basin, per section 10722.4 of the CWC. DWR has not identified the CPSD Basin as being subject to critical conditions of overdraft nor has it been identified as overdrafted nor has DWR projected that the CPSD Basin will become overdrafted if present management conditions continue. Accordingly, a GSP is not required for the CPSD

Basin, but Sweetwater Authority is nevertheless utilizing SGMA, including the preparation of a GSP to sustainably manage its groundwater resources.

The principal aquifer units of the CPSD Basin include recent alluvium with offshore marine sediment, Quaternary marine and non-marine deposits, and the San Diego Formation (SDF). Although groundwater occurs in the overlying sedimentary deposits, the SDF is the principal aquifer within the basin. The SDF consists of fine-grained to medium-grained sandstone, cobble conglomerate, and mudstone (often described as very fine sandy silt). The formation was deposited during a major late Pliocene marine transgression. The CPSD Basin is bounded to the east by the La Nacion Fault, to the south by the U.S./Mexico International Border, to the west by San Diego Bay, and to the north by the Mission Valley Basin. Basin recharge is derived from seasonal runoff from precipitation, discharge from the Sweetwater and Loveland Reservoirs, and underflow from the reservoirs.

Within the CPSD Basin, Sweetwater Authority operates the National City Wells, which produce potable groundwater (Total Dissolved Solids [TDS] approximately 600 mg/l) and the Richard A. Reynolds Groundwater Desalination Facility (Desalination Facility) that produces drinking water from brackish groundwater (TDS between 1,600 and 2,500 mg/l). Both well fields pump from the SDF.

The National City Wells consist of three wells: Nos. 2, 3, and 4. Well Nos. 3 and 4 operate daily, while the oldest well, No. 2, serves as a backup. Sweetwater Authority has produced an average of 1,860 acre-feet per year from the National City Wells from 1954 to 2019.

The Desalination Facility commenced operation in 1999. The facility was designed to take groundwater from four alluvial wells and five deep SDF wells, located on the north side of the Sweetwater River. A sixth SDF well was later constructed and added to the Desalination Facility. The facility removes the TDS from the brackish groundwater using reverse osmosis technology (R/O). Currently, the alluvial wells are not operated for the following reasons: 1) summertime vegetative distress in the Sweetwater River; 2) surface water influence on the relatively shallow alluvial formation, and 3) the R/O membranes not being approved for surface water treatment by the California Department of Public Health.

Phase I of the Desalination Facility was designed to produce four MGD of drinking water, but the facility was constructed with space to accommodate a Phase 2 expansion. Sweetwater Authority completed a Phase 2 expansion of the Desalination Facility in 2017 and added five additional SDF wells for a total of eleven SDF wells. The Desalination Facility currently has the ability to produce a maximum of 10 MGD and on average produces 8 MGD. Additionally, Sweetwater Authority is currently participating in studies with the United States Geological Survey (USGS) to evaluate the SDF Aquifer, and to make safe use of the available yield from the aquifer. Groundwater production for the past sixteen fiscal years is shown below in Table 7.

**Table 7**  
**Groundwater Production from 2004 through 2019**

Fiscal Year Ending	Total GW Produced (acre-feet)	Source (acre-feet)	
		NC Wells	Desalination Facility
2004	3,637	1,595	2,042
2005	3,779	1,793	1,986
2006	3,941	1,670	2,271
2007	5,398	2,161	3,237
2008	5,887	2,188	3,699
2009	5,399	1,945	3,454
2010	5,351	2,175	3,176
2011	5,627	2,113	3,514
2012	4,705	1,798	2,907
2013	5,466	2,103	3,363
2014	5,019	1,996	3,023
2015	5,278	2,031	3,247
2016	4,751	1,854	2,897
2017	2,349	1,781	568
2018	8,802	1,733	7,069
2019	9,685	1,961	7,724

Note: The Desalination Facility was offline for most of the fiscal year ending in 2017 for construction of Phase 2 of the facility, hence, the small production from the Desalination Facility that year.

Table 8 shows historic and projected water supplies from local sources only, in 5-year increments since 1980. Historic and projected water supplies from imported sources are shown in Section 7.2 of this WSA.

**Table 8**  
**Historic and Normal Water Year Projected Local Supplies**

Fiscal Year Ending	Local Supply (acre-feet)			Total Local Supply (acre-feet)
	Sweetwater Reservoir	National City Wells	Reynolds Desal. Facility	
1980	17,392	1,308	0 <sup>2</sup>	18,700
1985	20,052	1,219	0 <sup>2</sup>	21,271
1990	0 <sup>1</sup>	1,853	0 <sup>2</sup>	1,853
1995	15,855	1,392	0 <sup>2</sup>	17,247
2000	16,302	1,899	2,118	20,319
2005	8,449	1,793	1,986	12,228
2010	898	2,175	3,176	6,249
2015	0 <sup>1</sup>	2,031	3,247	5,278

Fiscal Year Ending	Local Supply (acre-feet)			Total Local Supply (acre-feet)
	Sweetwater Reservoir	National City Wells	Reynolds Desal. Facility	
2020	7,400 <sup>3</sup>	2,100 <sup>3</sup>	6,200 <sup>3</sup>	15,700 <sup>3</sup>
2025	7,400 <sup>3</sup>	2,100 <sup>3</sup>	6,200 <sup>3</sup>	15,700 <sup>3</sup>
2030	7,400 <sup>3</sup>	2,100 <sup>3</sup>	6,200 <sup>3</sup>	15,700 <sup>3</sup>
2035	7,400 <sup>3</sup>	2,100 <sup>3</sup>	6,200 <sup>3</sup>	15,700 <sup>3</sup>
2040	7,400 <sup>3</sup>	2,100 <sup>3</sup>	6,200 <sup>3</sup>	15,700 <sup>3</sup>

**Notes:**

1. Local supply from Sweetwater Reservoir for fiscal year ending in 1990 and 2015 was zero due to regional drought conditions.
2. The Reynolds Desalination Facility became operational in 1999; therefore, production for fiscal years ending in 1980 through 1995 was zero.
3. Projected local supplies for fiscal years ending in 2020 through 2040 are consistent with Sweetwater Authority's 2015 UWMP.

### 7.1.3 Water Recycling

Sweetwater Authority does not produce or distribute recycled water. Several potential changes in the service area could have significant impacts on the future potable water demands. These include:

- The previously planned construction of a new LSP Southbay, LLC Energy Power Plant with up to 5 MGD of recycled water demand. However, it does not appear that this project will move forward.
- The development of the Chula Vista Bayfront. This planned project will cover approximately 550 acres along San Diego Bay. The land uses being considered include parks and open space. This development will increase the demand for potable water.

Due to these developments, Sweetwater Authority completed a master plan for the distribution of recycled water within its service area. Additionally, Sweetwater Authority has participated in studies with CWA, Otay Water District (Otay) and the City of Chula Vista to analyze potential water recycling plant locations within Sweetwater Authority's service area, but implementation of recycled water within Sweetwater Authority's service area was found to be cost prohibitive; therefore, the use of recycled water has not been considered in the preparation of this WSA. However, this section provides a summary of the results of the master planning effort and the plant siting study.

#### 7.1.3.1 Sweetwater Authority's Recycled Water Master Plan

Sweetwater Authority's Recycled Water Master Plan evaluated 8 recycled water system alternatives with demands ranging from 4,300 acre-feet per year to 5,470 acre-feet per year. Recycled water sources included both a new recycled water plant that would be constructed by Sweetwater Authority and the City of Chula Vista, and a supply from the City of San Diego's South Bay Water Reclamation Facility. A preferred alternative was

identified that included demands of 4,300 acre-feet per year and a supply from the South Bay Water Reclamation Facility. However, approximately 2,700 acre-feet per year is related to the development of a new water-cooled power plant that is unlikely to be constructed. At this time, it is unclear if the power plant will be developed, and if it is developed, whether it will be air or water-cooled. Without the development of the water-cooled plant, it is likely that development of a recycled water system within Sweetwater Authority's service area would be cost prohibitive.

### **7.1.3.2 Membrane Bioreactor Studies**

Sweetwater Authority participated in CWA's Membrane Bioreactor Study. Recent technology advancements have made satellite treatment plants utilizing membrane bioreactor (MBR) technology a feasible cost effective alternative to traditional centralized wastewater treatment plants. MBR technology has the ability to comply with strict effluent requirements, operate reliably with minimal operator attendance, and occupy far less space than traditional systems, which allows it to be easily sited close to the recycled water consumers. The study includes evaluation of "scalping" plants taking raw sewage from the City of Chula Vista by intercepting existing regional sewer lines, treating it locally through a miniature version of a wastewater treatment plant and putting the residuals back in the sewer downstream of the withdrawal point.

A second MBR Study was a collaborative project involving Otay and the City of Chula Vista, with Sweetwater Authority as the Lead Agency. The intent was to determine if an MBR Recycled Water Treatment Plant (MBR Plant) is feasible in order to provide recycled water to both, or either, Sweetwater Authority and Otay, as well as to determine if the City of Chula Vista can find an alternative to acquiring needed wastewater capacity from the City of San Diego's Metropolitan Wastewater System (Metro System).

The results of the study showed the cost of installing a recycled water distribution system in Sweetwater Authority's service area is prohibitively expensive. Therefore, Sweetwater Authority has determined that it will not participate in any near-term studies regarding an MBR Plant to serve recycled water in its service area. However, it may appear to be feasible for Otay and the City of Chula Vista.

## **7.2 Imported Supply**

Sweetwater Authority represents two (City of National City and South Bay Irrigation District) of the 24 member agencies of CWA. Member agency status entitles Sweetwater Authority to directly purchase water from CWA on a wholesale basis. One hundred percent of Sweetwater Authority's imported water is purchased from CWA, a member agency of Metropolitan. The statutory relationships between CWA and its member agencies, and Metropolitan and its member agencies, respectively, establish the scope of Sweetwater Authority's entitlements to water from these two agencies.

CWA was organized on June 9, 1944 under the County Water Authority Act for the sole purpose of importing Colorado River water into San Diego County. The imported water, now a combination of Colorado River water, State Water Project water, and conserved water by the Imperial Irrigation District through the Quantification Settlement Agreement of 2003, is sold wholesale to the 24 member agencies of CWA. The member agencies are autonomous and their City Councils or Boards of Directors set local policies and pricing structures.

Imported water delivered by CWA is either purchased from or wheeled by Metropolitan from Metropolitan facilities, located just south of the San Diego/Riverside county line. Metropolitan is a public agency organized in 1928 by a vote of the electorates of 13 Southern California cities. Since its formation, Metropolitan has grown to include 27 member agencies of which CWA is the largest. Metropolitan was formed for the purpose of developing, storing, and distributing water to the residents of Southern California. The historical quantities of water purchased from CWA since 1985 by Sweetwater Authority are shown in Table 9. Projected purchased water supplies are shown in Table 10 and include the water demands for the National City Bayfront Projects.

**Table 9  
 Historic Imported Supplies**

Fiscal Year Ending	Total Imported Water (acre-feet)	Source (acre-feet)	
		Untreated	Treated
1985	4,634	---	4,634
1986	20,842	---	20,842
1987	16,384	---	16,384
1988	20,514	---	20,514
1989	19,519	---	19,519
1990	24,019	---	24,019
1991	20,508	---	20,508
1992	14,722	---	14,722
1993	6,188	---	6,188
1994	1,387	---	1,387
1995	5,045	---	5,045
1996	1,589	---	1,589
1997	14,230	---	14,230
1998	8,452	---	8,452
1999	---	---	---
2000	5,520	5,429	91
2001	14,381	14,381	---
2002	18,858	18,858	---
2003	19,752	19,752	---
2004	19,648	19,648	---
2005	11,342	11,234	108
2006	10,685	10,685	---
2007	11,492	11,371	121

Fiscal Year Ending	Total Imported Water (acre-feet)	Source (acre-feet)	
		Untreated	Treated
2008	10,473	10,284	189
2009	12,864	11,229	1,635
2010	14,546	11,373	3,173
2011	7,029	847	6,182
2012	5,506	4,671	835
2013	2,699	2,699	0
2014	12,297	10,859	1,438
2015	13,529	13,529	425
2016	12,249	11,237	1,012
2017	13,689	12,988	701
2018	1,955	1,954	1
2019	4,013	3,772	241

**Table 10**  
**Normal Water Year Projected Imported Supplies**

Fiscal Year Ending	Total Imported Water (acre-feet)
2020	6,788
2025	7,257
2030	7,952
2035	9,554
2040	10,619

*Note:* Projected imported supply values were calculated by adding the projected water demands for the National City Bayfront Projects shown in Table 4 to the projected imported water supplies from Sweetwater Authority's 2015 UWMP.

### 7.2.1 Metropolitan's 2015 Regional UWMP

Metropolitan's 2015 Regional UWMP was adopted by the Metropolitan Board of Directors on May 10, 2016. The 2015 Regional UWMP provides member agencies, retail water utilities, cities, and counties within its service area with water supply information for purposes of developing local UWMPs, water supply assessments, and written verifications. As part of this process, Metropolitan also used SANDAG's 2050 Regional Growth Forecast in calculating regional water demands for the CWA's service area, in addition to using the Southern California Association of Governments (SCAG) 2012 Regional Transportation Plan/Sustainable Community Strategy (2012 Regional Transportation Plan). Metropolitan incorporated SANDAG's 2050 Regional Growth Forecast and the SCAG 2012 Regional Transportation Plan into the 2015 Regional UWMP. Since the 2005 Regional UWMP update, conditions in the Sacramento/San Joaquin Delta (Delta) have changed significantly, reducing exports from Northern California. Metropolitan's 2015 UWMP references the California WaterFix and

EcoRestore, formerly referred to as the Bay Delta Conservation Plan (BDCP), proposed by state, federal, and local water agencies to make State Water Project system operation improvements, including some related to restoration and protection of the Delta ecosystem and contributing watersheds. The California WaterFix program would construct and operate new water distribution facilities that are designed to be more environmentally friendly than the current system configuration. The program would include water delivery upgrades, river flow improvement, and habitat restoration and protection. It is anticipated that California EcoRestore would lead to the restoration of at least 30,000 acres of the Delta (or upstream). Both programs are being evaluated and implemented through DWR consistent with CEQA, NEPA, Endangered Species Act, and other environmental laws. As directed by Governor Newsom in 2019 and building on work already conducted, DWR rescinded the twin tunnel WaterFix program and is pursuing a new environmental review and planning process for a single tunnel solution to modernize Delta conveyance. This approach is consistent with the Governor's April 2019 Executive Order N-10-19 directing state agencies to develop a portfolio of statewide water actions and investments. Modernizing Delta conveyance paired with complementary projects that improve water recycling, recharge depleted groundwater reserves, strengthen existing levee protections and improve Delta water quality will help ensure a resilient water supply for Metropolitan, CWA, and Sweetwater Authority. CWA's Board of Directors supports this new approach, and Governor Newsom has made water supply reliability a major priority for his administration.

Copies of Metropolitan's 2015 Regional UWMP are available at Metropolitan's Administration Office or online at: [www.mwdh2o.com](http://www.mwdh2o.com).

### **7.2.2 San Diego County Water Authority's 2015 UWMP**

CWA's Board of Directors adopted the CWA's 2015 UWMP on June 23, 2016. The purpose of the report is to provide a statement regarding CWA's supplies and implementation of CWA plans and programs to meet the future water supply requirements of its member agencies. CWA's 2015 UWMP contains documentation on CWA/Imperial Irrigation District Water Conservation and Transfer Agreement, All American Canal and Coachella Canal Lining Projects, and a potential expansion of the Carlsbad Desalination Plant to provide an additional 5,600 acre-feet of desalinated water supply by 2025. The Carlsbad Desalination Plant currently supplies 56,000 acre-feet of desalinated water per year to the region. The documentation included in CWA's 2015 UWMP was prepared for use by CWA's member agencies in preparation of local UWMPs, water supply assessments, and written verifications required under state law. Written verifications required under state law such as this WSA strengthen Sweetwater Authority's verification of water supply reliability.

## Section 8 – Supply and Demand Assessment

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### 8.1 Normal Year Assessment

Table 11 shows the forecasted normal water year projections for Sweetwater Authority’s service area, including the National City Bayfront Projects. The projections show that Sweetwater Authority anticipates having adequate water supplies to meet projected demands through 2040. Demand totals shown in Table 11 are the same quantities as the demands shown in Table 5.

**Table 11**  
**Normal Year Supply and Demand Assessment**

	2020	2025	2030	2035	2040
Imported Water	6,788	7,257	7,952	9,554	10,619
Surface Water	7,400	7,400	7,400	7,400	7,400
Groundwater	2,100	2,100	2,100	2,100	2,100
Desalinated Groundwater	6,200	6,200	6,200	6,200	6,200
<b>Supply Totals</b>	<b>22,488</b>	<b>22,957</b>	<b>23,652</b>	<b>25,254</b>	<b>26,319</b>
<b>Demand Totals</b>	<b>22,488</b>	<b>22,957</b>	<b>23,652</b>	<b>25,254</b>	<b>26,319</b>
<b>Difference</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

### 8.2 Single Dry Year Assessment

For the single dry year assessment, supplies were calculated by evaluating the availability of each supply. For groundwater from the National City Wells and desalinated water from the Desalination Facility, it is assumed that supplies would be reliable and available at normal levels in a single dry year because groundwater supplies from these facilities are considered drought-proof due to the CPSD Basin not being in an overdraft condition nor being expected to be in an overdraft condition through 2040 due to Sweetwater Authority’s sustainable groundwater management practices. For surface water supplies from Sweetwater Reservoir, it is anticipated that 56% of supplies would be available, which is consistent with Sweetwater Authority’s 2015 UWMP. Per information from CWA’s 2015 UWMP, it is anticipated that imported water would be available to meet demands in a single dry year, which is further verified with information contained in Metropolitan’s 2015 UWMP

Based upon modeling performed by CWA, which was confirmed by reviewing local trends in Sweetwater Authority’s service area, demands would increase by 7% in a single dry year; therefore, Sweetwater Authority would purchase additional water supplies from CWA to meet the increased demands. Table 12 shows forecasted single dry year projections for Sweetwater Authority’s service area, including the National City Bayfront Projects. The projections show that Sweetwater Authority anticipates having adequate water supplies to meet projected demands through 2040.

**Table 12  
 Single Dry Year Supply and Demand Assessment**

	2020	2025	2030	2035	2040
Imported Water	11,618	12,120	12,864	14,578	15,717
Surface Water	4,144	4,144	4,144	4,144	4,144
Groundwater	2,100	2,100	2,100	2,100	2,100
Desalinated Groundwater	6,200	6,200	6,200	6,200	6,200
<b>Supply Totals</b>	<b>24,062</b>	<b>24,564</b>	<b>25,308</b>	<b>27,022</b>	<b>28,161</b>
<b>Demand Totals</b>	<b>24,062</b>	<b>24,564</b>	<b>25,308</b>	<b>27,022</b>	<b>28,161</b>
<b>Difference</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**8.3 Multiple Dry Year Assessment**

For the multiple dry year assessment, supplies were also calculated by evaluating the availability of each supply. For groundwater from the National City Wells and desalinated water from the Desalination Facility, it is assumed that supplies would be reliable and available at normal levels in multiple dry years because groundwater supplies from these facilities are considered drought-proof due to the CPSD Basin not being in an overdraft condition nor being expected to be in an overdraft condition through 2040 due to Sweetwater Authority’s sustainable groundwater management practices. For surface water supplies from Sweetwater Reservoir, it is anticipated that 80% of supplies would be available in the first two years of a multiple dry year period, which is consistent with Sweetwater Authority’s 2015 UWMP. For the third year of a multiple dry year period, it is anticipated that surface water supplies from Sweetwater Reservoir would drop down to 56% of normal, which is also consistent with Sweetwater Authority’s 2015 UWMP. The CWA’s 2015 UWMP indicates that there would be imported supply reliability in the first two years of a multiple dry year period, but that in the third year, there is a possibility of a small shortage in imported water availability. The potential deficit would result in a shortage of approximately 9% from the previous year, per the CWA’s 2015 UWMP.

Based upon modeling performed by CWA, which was confirmed by reviewing local trends in Sweetwater Authority’s service area, demands would increase by 7% of normal in the first year, 11% of normal in the second year, and 7% of normal in the third year of a multiple dry year period.

Because the CWA’s 2015 UWMP demonstrates that there would be supply reliability for the first two years of a multiple dry year period, in the first two years, it is anticipated that Sweetwater Authority would purchase additional imported water supplies from CWA to meet demands. However, because there would be a small potential reliability shortfall in the third year of a multiple dry year period, it is anticipated that Sweetwater Authority would increase conservation efforts to reduce demands. This scenario is consistent with how Sweetwater Authority addressed the most recent drought. Therefore, the projections show that Sweetwater Authority anticipates having adequate water supplies to meet projected demands, as shown in Table 13.

**Table 13**  
**Multiple Dry Year Supply and Demand Assessment**

		2020	2025	2030	2035	2040
First Year	Imported Water	9,842	10,344	11,088	12,802	13,941
	Surface Water	5,920	5,920	5,920	5,920	5,920
	Groundwater	2,100	2,100	2,100	2,100	2,100
	Desalinated Groundwater	6,200	6,200	6,200	6,200	6,200
	<b>Supply Totals</b>	<b>24,062</b>	<b>24,564</b>	<b>25,308</b>	<b>27,022</b>	<b>28,161</b>
	<b>Demand Totals</b>	<b>24,062</b>	<b>24,564</b>	<b>25,308</b>	<b>27,022</b>	<b>28,161</b>
	<b>Difference</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Second Year	Imported Water	10,742	11,262	12,034	13,812	14,994
	Surface Water	5,920	5,920	5,920	5,920	5,920
	Groundwater	2,100	2,100	2,100	2,100	2,100
	Desalinated Groundwater	6,200	6,200	6,200	6,200	6,200
	<b>Supply Totals</b>	<b>24,962</b>	<b>25,482</b>	<b>26,254</b>	<b>28,032</b>	<b>29,214</b>
	<b>Demand Totals</b>	<b>24,962</b>	<b>25,482</b>	<b>26,254</b>	<b>28,032</b>	<b>29,214</b>
	<b>Difference</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Third Year	Imported Water	9,775	10,248	10,951	12,569	13,645
	Surface Water	4,144	4,144	4,144	4,144	4,144
	Groundwater	2,100	2,100	2,100	2,100	2,100
	Desalinated Groundwater	6,200	6,200	6,200	6,200	6,200
	<b>Supply Totals</b>	<b>22,219</b>	<b>22,692</b>	<b>23,395</b>	<b>25,013</b>	<b>26,089</b>
	Additional Conservation	1,843	1,872	1,913	2,009	12,072
	<b>Demand Totals</b>	<b>24,062</b>	<b>24,564</b>	<b>25,308</b>	<b>27,022</b>	<b>28,161</b>
	<b>Difference</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

#### 8.4 Fire Flow Assessment

Even though the projections show that Sweetwater Authority would have sufficient water supplies to meet the demands of the National City Bayfront Projects, fire flow analyses conducted by Sweetwater Authority show that Sweetwater Authority's water distribution system has limitations in meeting some of the fire flow demands indicated on the Port's request to prepare a WSA plus the maximum day demands for the gravity pressure zone of Sweetwater Authority's service area, where the proposed National City Bayfront Projects would be located. The fire flow demands provided of 6,250 gallons per minute (gpm) for Project No. 1 and 7,250 gpm for the 81 room hotel on Project No. 3 Phase 2, both at 20 pounds per square inch for 4 hours, plus including maximum day demands for Sweetwater Authority's distribution system, would not be met through the existing 12-inch polyvinylchloride (PVC) pipelines in the vicinity of Project Nos 1 and 3. In order to meet the fire flow demands plus maximum day demands, existing Sweetwater Authority 12-PVC pipelines would need to be upgraded to 16-inch PVC pipelines, as shown in Appendix D. Alternatively, Projects No. 1 and No. 3 Phase 2 could be

downscaled to meet the fire flow demands plus maximum day demands without the need for water infrastructure improvements.

## **Section 9 – Conclusion: Availability of Sufficient Supplies**

---

Sweetwater Authority is committed to developing local resources within and outside its service area to offset the region's need for imported water from Metropolitan and CWA. Within its service area, Sweetwater Authority expanded its Desalination Facility in 2017, which reclaims brackish groundwater from the underlying San Diego Formation. Sweetwater Authority has studied the development of recycled water in its service area and concluded that it is prohibitively expensive at this time. However, Sweetwater Authority continues to support other agencies that are developing this very important local resource.

Sweetwater Authority, as with other water agencies in the region, continues to rely on imported water from Metropolitan and CWA to bridge the gap between its available local supply and current and future demands within its service area. The CWA's 2015 UWMP identifies projects and programs to help ensure that the existing and planned water users within Sweetwater Authority's service area have an adequate supply. Metropolitan has also prepared and adopted an updated 2015 Integrated Water Resources Plan (IWRP) that outlines strategies for water reliability. Implementation of these strategies by Metropolitan, CWA, and local water agencies will assure adequate supply to support growth and redevelopment within the region. However, it should be noted that programs in the updated Metropolitan planning documents require future discretionary decisions by Metropolitan's Board of Directors. Until these programs are fully implemented by Metropolitan to manage current changed conditions and other uncertainties, the San Diego region will remain susceptible to potential shortages. Metropolitan, CWA, and Sweetwater Authority do have shortage response plans in place to manage any potential shortages. The plans include shortage response actions, such as dry-year storage withdrawals, voluntary and mandatory water use restrictions, and public outreach. Sweetwater Authority is currently on Level 1 – Drought Watch status of its Drought Response Plan. Sweetwater Authority's Drought Response Plan is included in Appendix B.

This WSA demonstrates that there will be sufficient water supplies, over a 20-year planning horizon, to meet the projected demands of the proposed National City Bayfront Projects, in addition to existing and planned future users, including agricultural and manufacturing uses, under normal, single dry-year, and multiple dry-year scenarios. However, in March 2019, the United States Bureau of Reclamation (Reclamation) and the states dependent on Colorado River water transmitted to the United States Congress plans to alleviate stress on water supplies from the Colorado River. These plans known as the Drought Contingency Plans (DCPs) for the Upper and Lower Basins of the Colorado River were authorized by Congress in April 2019 in the Colorado River Drought Contingency Plan Authorization Act. The DCPs obligate Lower Basin states, of

which California is a part of, to water supply cutbacks at specified storage levels in Lake Mead retained by Hoover Dam, commit Reclamation to additional water conservation efforts, and coordinate Upper Basin operations to protect Lake Powell storage levels and hydropower generation. Under the Lower Basin DCP, California committed to Colorado River water delivery cutbacks for the first time in history, but the Imperial Irrigation District (IID) in Southern California, one of the biggest water rights holders of Colorado River water, did not approve the Lower Basin DCP. IID has filed a suit in state court alleging that state approval of the DCPs violated the California Environmental Quality Act.

Due to uncertainty with the pending suit filed by IID and the possibility that Metropolitan would need to cut back Colorado River water deliveries in accordance with the Lower Basin DCP; in addition to uncertainty with legal and regulatory issues involving utilization of the Delta to convey State Water Project water; and the potential for prolonged droughts due to climate change that could last more than the multiple three dry-year scenario required to be analyzed for this WSA, Sweetwater Authority cannot guarantee that at some point in the future, supply of imported water could be diminished from those projected in this WSA, which would impact water availability for the National City Bayfront Projects.

This WSA does not create a right or any entitlement to water service (CWC § 10914). The WSA is not a commitment to serve the project, but it is a review of Sweetwater Authority's total projected water demands and supplies. Based on presently available information, the WSA and its analyses and conclusions are conditioned in part on the ability of Metropolitan and CWA to continue to supply imported water to meet Sweetwater Authority's needs.

In addition, as indicated in Section 8.4, Sweetwater Authority's water distribution system has limitations in meeting some of the fire flow demands for the National City Bayfront Projects plus meeting the maximum day demands for the gravity pressure zone of Sweetwater Authority's service area, where the proposed projects would be located. Sweetwater Authority recommends that the Port and the City of National City upgrade existing pipelines in the vicinity of Project Nos. 1 and 3, from 12-inch PVC to 16-inch PVC, in order to accommodate the required fire flow demands plus maximum day demands. Alternatively, the Port and the City of National City could choose to downscale Projects No. 1 and No. 3 Phase 2 to meet the fire flow demands plus maximum day demands without the need for water infrastructure improvements.

## Appendix A

Request from the San Diego Unified Port District to  
Prepare a Water Supply Assessment



July 10, 2019

Erick Del Bosque, PE  
Sweetwater Authority  
505 Garrett Avenue  
Chula Vista, CA 91910

**Subject: 30-Day Extension for Water Supply Assessment for National City Bayfront Projects Environmental Impact Report**

Dear Erick,

Per your request, the San Diego Unified Port District ("District") hereby agrees to grant a 30-day extension to Sweetwater Authority for completion of the Water Supply Assessment (WSA) for the National City Bayfront Projects Environmental Impact Report. The District agrees to this waiver based on the understanding that Sweetwater Authority staff will work to have the WSA docketed for adoption by Sweetwater Authority's Governing Board in August 2019.

If you have any questions regarding this letter, please contact me at (619) 686-7263 or via email at [abuzaiti@portofsandiego.org](mailto:abuzaiti@portofsandiego.org).

Sincerely,

A handwritten signature in blue ink that reads "Anna Buzaitis".

Anna Buzaitis  
Program Manager, Planning

cc: Ray Pe, Principal Planner, City of National City



April 26, 2019

Jason Mettler  
Sweetwater Authority  
505 Garrett Avenue  
PO Box 2328  
Chula Vista, CA 91912-2328

**SUBJECT: Request for Water Supply Assessment for National City Bayfront Projects EIR**

Dear Mr. Mettler:

Per your request in a letter dated January 31, 2019 (see attached), and in accordance with Senate Bill 610 (California Water Code Section 10910 et al), this letter serves as the San Diego Unified Port District's request for Sweetwater Authority to prepare a Water Supply Assessment for the National City Bayfront Projects Environmental Impact Report (EIR). The Project is a joint effort with the City of National City, with the Port serving as the CEQA Lead Agency for the EIR.

Enclosed with this letter is a table that identifies the following for each of the six (6) main Sites of the project being evaluated in the EIR:

- Site size
- Existing land use/zoning
- Proposed land use/zoning
- Existing use of Site
- Proposed use of Site
- Address of Site (if applicable)
- APN of Site (if applicable)
- Anticipated Building Construction Type
- Square footage of buildings
- Preliminary fire flow estimates

A map that corresponds to the Site # shown on the table is also enclosed.

If you have any questions, please contact me at (619) 686-7263 or email me at [abuzaiti@portofsandiego.org](mailto:abuzaiti@portofsandiego.org). Thank you in advance for your help.

Sincerely,

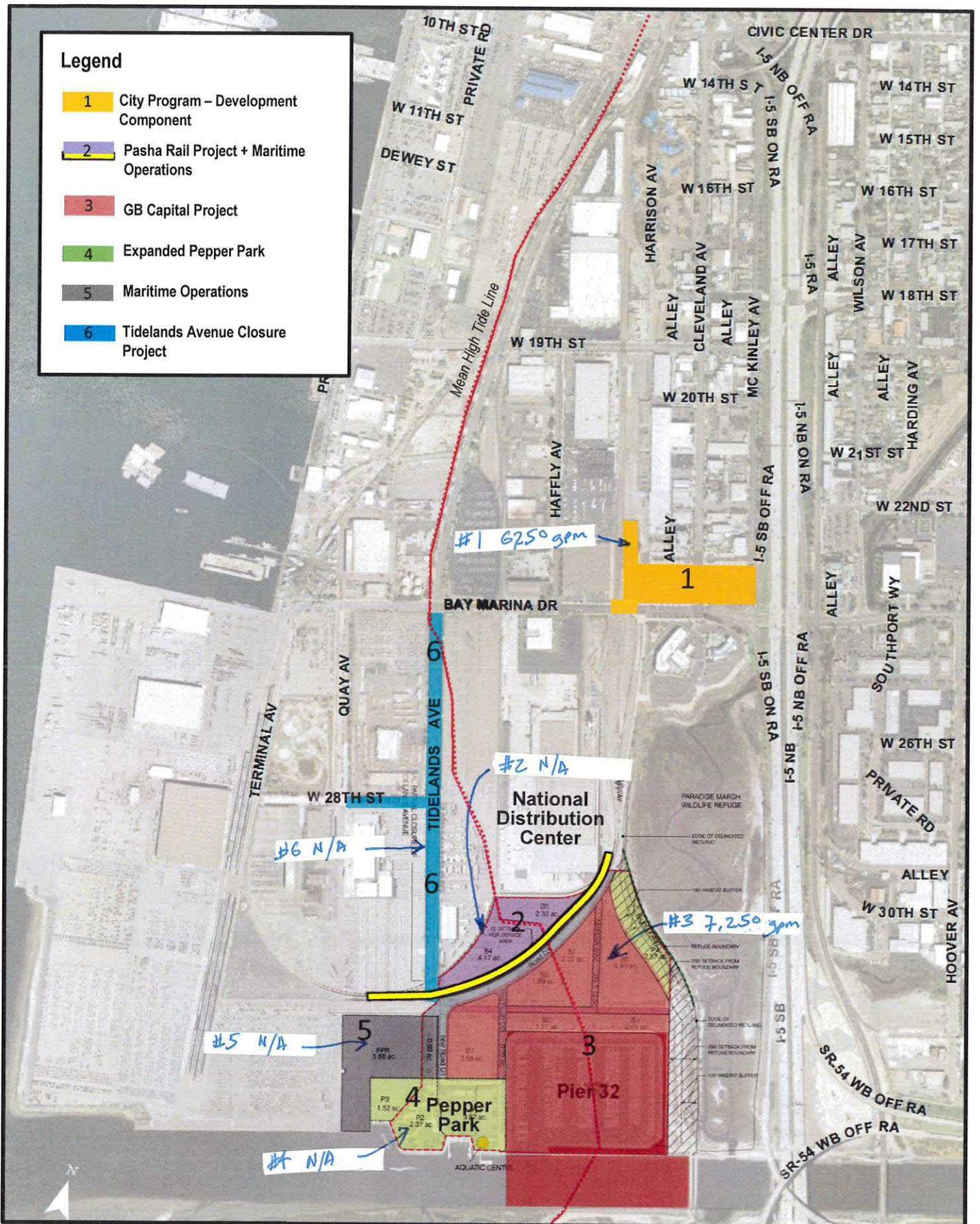
A handwritten signature in black ink, appearing to read "Anna Buzaitis".

Anna Buzaitis  
Program Manager, Planning

cc: Ray Pe, Principal Planner, City of National City

encl: Letter dated 1/31/19; Table of Project information; Map of Site

Site (see attached map)	Site Size	Existing Land Use/Zoning	Proposed Land Use/Zoning	Existing Use	Proposed Use	Address of Site	APN Number(s)	Building Construction Type	Total Square Footage	Fire Flow (preliminary estimates, provided by National City Fire Department, 4/25/19)
1	6.2 acres	Commercial Tourist; Medium Manufacturing	Commercial Tourist	Vacant; NC Rail Depot	NC Rail Depot; future use for vacant parcels is unknown and is based on allowed uses in zone. For vacant parcels, EIR is analyzing the following "example" development: 150-room hotel + 15,500sf restaurant + 12,000sf retail	No address; is generally Tidelands Avenue, between Bay Marina Drive and West 32nd Street	APN/Street Address: 5591170400/801 Bay Marina Drive; 5591170500/0 Cleveland Avenue; 5591170600/2300 Cleveland Avenue; 5591170700/720 W. 23rd Street; 5591171200/830 W. 23rd	* Hotel: <b>TYPE V-B</b> * Restaurant: <b>TYPE V-A</b> * Retail: <b>TYPE V-A</b>	*150-room hotel with approximately 250,000sf * restaurant of approximately 15,500sf * retail of approximately 12,000sf	6,250 GPM; 4 hours @ 20 PSI
2	6.8 acres	Marine-Related Industrial; Commercial Tourist	Marine-Related Industrial	Maritime operations associated with Pasha Automotive Services	New connector rail track + maritime operations associated with Pasha Automotive Services	No address; is generally north of West 32nd Street, west of Marina Way, east of Tidelands Avenue, and south of the National Distribution Center (1000 Bay Marina Drive, National City, CA 91950)	No APN, is Port parcel	<b>BUILDING CONSTRUCTION TYPE IS N/A</b>	Up to 4,000 linear feet of new railroad tracks, which consists of two parallel sets of tracks, 2,000 linear feet each	N/A
3	21.2 acres land; 25.7 acres water	Commercial Recreation; Commercial Tourist	Commercial Recreation	Vacant; Pier 32 Marina; maritime operations associated with Pasha Automotive Services	<b>Phase 1:</b> Retain existing Pier 32 Marina, and add RV park with up to 135 RV sites and supporting facilities (e.g., admin building) + 40,000 sf of dry boat storage + 60 modular cabins for overnight stays + additional in-water features (e.g., floating docks, gangways) <b>Phase 2:</b> Same as Phase 1, except remove up to 65 RV sites to accommodate the following: 40-room hotel, 60-room hotel + 16,500 sf retail, 282-room hotel, 81-room hotel	3201 Marina Way, National City, CA 91950	No APN, is Port parcel	<b>Phase 1:</b> - RV park with up to 135 RV sites and 13,000sf of supporting facilities (e.g., admin building, restrooms, maintenance building) - <b>SUPPORTING FACILITIES ARE TYPE V-B;</b> - 40,000 sf of dry boat storage will be open storage consisting of steel racks with no walls - <b>BUILDING CONSTRUCTION TYPE IS N/A;</b> - 60 modular cabins for overnight stays - each cabin is approximately 420sf, for a total of 25,200sf - <b>THESE ARE PROPOSED TO BE MADE FROM SHIPPING CONTAINERS. PERHAPS BUILDING CONSTRUCTION TYPE IS TYPE V-B;</b> - additional in-water features (e.g., floating docks, gangways) - <b>BUILDING CONSTRUCTION TYPE IS N/A</b>  <b>Phase 2:</b> Same as Phase 1, except remove up to 65 RV sites to accommodate the following new uses: - 40-room hotel with a total of 50,000sf - <b>TYPE V-B;</b> - 60-room hotel + 16,500 sf retail, for a total of 83,000sf <b>TYPE V-B</b> - 282-room hotel with a total of 500,000sf - <b>TYPE I-A</b> - 81-room hotel with a total of 70,000sf - <b>TYPE V-B</b>	<b>Phase 1:</b> - RV park with up to 135 RV sites and 13,000sf of supporting facilities (e.g., admin building, restrooms, maintenance building); - 40,000 sf of dry boat storage; - 60 modular cabins for overnight stays - each cabin is approximately 420sf, for a total of 25,200sf; - additional in-water features (e.g., floating docks, gangways)  <b>Phase 2:</b> Same as Phase 1, except remove up to 65 RV sites to accommodate the following new uses: - 40-room hotel with a total of 50,000sf - 60-room hotel + 16,500 sf retail, for a total of 83,000sf - 282-room hotel with a total of 500,000sf - 81-room hotel with a total of 70,000sf	<b>Phase 1</b> - RV park: 3,000 GPM; 3 hours @ 20 PSI - Modular cabins: 4,250 GPM; 4 hours @ 20 PSI  <b>Phase 2</b> - 40-room hotel: 6,000 GPM; 4 hours @ 20 PSI - 60-room hotel + retail: 5,000 GPM; 4 hours @ 20 PSI - 282-room hotel: 6,000 GPM; 4 hours @ 20 PSI - 81-room hotel: 7,250 GPM; 4 hours @ 20 PSI
4	7.76 acres	Park/Plaza; Marine Terminal	Park/Plaza	Pepper Park; Maritime operations associated with Pasha Automotive Services	Expanded Pepper Park; Size of expansion is 2.5 acres	3299 Tidelands Ave, National City, CA 91950	No APN, is Port parcel	<b>BUILDING CONSTRUCTION TYPE IS N/A</b>	Add 2.5 acres to the existing Pepper Park, for a total size of 7.76 acres	N/A
5	6.76 acres	Marine Terminal; Commercial Recreation	Marine Terminal	Maritime operations associated with National City Marine Terminal	Maritime operations associated with National City Marine Terminal	No address; is generally south of West 32nd Street, west of Pepper Park, and north of Sweetwater Channel.	No APN, is Port parcel	<b>BUILDING CONSTRUCTION TYPE IS N/A</b>	N/A	N/A
6	6.07 acres	Street	Marine-Related Industrial	Roadway with parking	Close road; use space for maritime operations associated with Pasha Automotive Services	No address; is generally Tidelands Avenue, between Bay Marina Drive and West 32nd Street	No APN, is Port parcel	<b>BUILDING CONSTRUCTION TYPE IS N/A</b>	N/A	N/A



National City Bayfront Projects EIR  
 Project Components for Water Supply Assessment

## Del Bosque, Erick

---

**From:** Anna Buzaitis <abuzaiti@portofsandiego.org>  
**Sent:** Wednesday, August 14, 2019 12:29 PM  
**To:** Del Bosque, Erick  
**Cc:** Ray Pe (rpe@nationalcityca.gov)  
**Subject:** RE: Request to Prepare Water Supply Assessment

Hi Erick,

Per our conversation, the purpose of this email is to document the minor correction of the square footage of supporting facilities in Phase 1 of Project 3 in the Water Supply Assessment (WSA) for the National City Bayfront Projects. More specifically, my original request to prepare the WSA incorrectly noted that the supporting facilities (e.g., administration building, restrooms, and a maintenance building) as proposed to be 13,000sf, instead of the correct square footage of 18,000sf. The following is the correction to the draft WSA shown in track changes:

1. Phase 1: Retaining the existing Pier 32 Marina and adding a Recreational Vehicle (RV) Park consisting of
  - a. 135 RV sites and ~~13,000~~ 18,000 sf of supporting facilities such as administration building, restrooms, and a maintenance building.

In addition, on 8/13/19, the City of National City Fire Marshal indicated that the change from 13,000sf to 18,000sf increases the fire flow from "3,000 GPM; 3 hours @ 20 PSI" to "3,500 GPM; 3 HRS @ 20 PSI."

Please let me know if you have any questions on this.

Thank you,  
Anna

---

**From:** Anna Buzaitis  
**Sent:** Friday, April 26, 2019 12:59 PM  
**To:** Mettler, Jason <[jmettler@sweetwater.org](mailto:jmettler@sweetwater.org)>  
**Cc:** Ray Pe ([rpe@nationalcityca.gov](mailto:rpe@nationalcityca.gov)) <[rpe@nationalcityca.gov](mailto:rpe@nationalcityca.gov)>  
**Subject:** Request to Prepare Water Supply Assessment

Hi Jason,

Attached please find attached the Port's request to Sweetwater Authority to prepare a Water Supply Assessment.

Please call or email me if you have any questions.

Thank you,  
Anna

### Anna Buzaitis

Program Manager, Planning & Green Port

3165 Pacific Highway, San Diego, CA 92101  
(o) (619) 686.7263 • (c) 619.458.5519



connect:      

Port administration offices are open Monday-Thursday and [every other Friday](#) from 8am-5pm.

This email may contain public information and may be viewed by third parties pursuant to the California Public Records Act.



## SWEETWATER AUTHORITY

505 GARRETT AVENUE  
POST OFFICE BOX 2328  
CHULA VISTA, CALIFORNIA 91912-2328  
(619) 420-1413  
FAX (619) 425-7469  
<http://www.sweetwater.org>

GOVERNING BOARD  
STEVE CASTANEDA, CHAIR  
JOSE PRECIADO, VICE CHAIR  
JOSIE CALDERON-SCOTT  
JERRY CANO  
JOSÉ F. CERDA  
HECTOR MARTINEZ  
ALEJANDRA SOTELO-SOLIS

TISH BERGE  
GENERAL MANAGER

JENNIFER H. SABINE  
ASSISTANT GENERAL MANAGER

January 31, 2019

Ms. Anna Buzaitis  
Program Manager, Planning and Green Port  
San Diego Unified Port District  
3165 Pacific Highway  
San Diego, CA 92101

Subject: National City Bayfront Projects & Plan Amendments, Notice of Preparation  
SWA File: (Dev) NC Bayfront

Dear Ms. Buzaitis:

Thank you for providing Sweetwater Authority (Authority) with a copy of the Notice of Preparation and Initial Study for the preparation of an Environmental Impact Report (EIR) for the National City Bayfront Projects and Plan Amendments (Project) prepared by the San Diego Unified Port District (SDUPD). Based on the Authority's review, the following comments are provided.

### **Water Supply Assessment**

As described in the Notice of Preparation, the Project includes the construction of up to five hotels with 463 rooms, RV park areas, modular cabins, an expanded marina, and tourist/visitor-serving commercial development including commercial and retail uses. Please note that this project may be subject to the preparation of a Water Supply Assessment pursuant to California Water Code Section 10912 (Section 10912) and California Senate Bill 610 (SB610). SB 610 requires that once the SDUPD, as lead agency, determines that a "project" as defined by Section 10912 is subject to CEQA, and determines the type of CEQA document required, a request be made to the water provider to prepare a Water Supply Assessment (WSA) to be included in the Project's Draft EIR. Upon determination by the SDUPD that a WSA is required for the project, a request for its preparation shall be made to the Authority. The Authority is available to consult with the SDUPD to assist with information to help make a determination for the WSA requirement.

### **Water Utilities**

There are multiple distribution water mains (mains), service laterals, and water appurtenances located within the Project site. To minimize the potential for conflicts between water facilities and designated public spaces within the Project, the Authority requests that water facilities located within Project areas be relocated to

*A Public Water Agency  
Serving National City, Chula Vista and Surrounding Areas*

Ms. Anna Buzaitis

Re: National City Bayfront Projects & Plan Amendments, Notice of Preparation

January 31, 2019

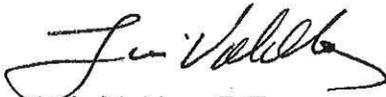
Page 2 of 2

roads, such as within the realigned Marina Way, and away from planned development areas and environmental buffers. Please note that the relocation of existing Authority facilities and new facilities to serve the project would be subject to the Authority's Rates and Rules, Design Standards, and Standard Specifications for the Construction of Water Facilities, all of which can be found on the Authority's website. The Authority recommends early coordination regarding relocation of facilities in order to avoid Project impacts and/or delays.

Please continue to include the Authority on the Project's distribution list. If you have any questions, please contact Jason Mettler at (619) 409-6755, or [jmettler@sweetwater.org](mailto:jmettler@sweetwater.org).

Sincerely,

SWEETWATER AUTHORITY



Luis Valdez, P.E.  
Engineering Manager

LV:IM:vn

cc: Mr. Ron Mosher, Sweetwater Authority  
Mr. Jason Mettler, Sweetwater Authority  
Mr. Israel Marquez, Sweetwater Authority

## Appendix B

### Sweetwater Authority's Drought Resolution 16-10 and Drought Response Plan

## **RESOLUTION 16-10**

### **RESOLUTION OF THE GOVERNING BOARD OF SWEETWATER AUTHORITY DEACTIVATING LEVEL 2 – DROUGHT ALERT OF THE DROUGHT RESPONSE PLAN**

**WHEREAS**, by Resolution 09-12 Sweetwater Authority (Authority) adopted its Drought Response Plan based upon the need to conserve water supplies for the greatest public benefit, increase the efficient uses of water, discourage waste of water, and avoid or minimize the effects of any future shortage; and

**WHEREAS**, since initial adoption of the Authority's Drought Response Plan, Governor Brown has issued a series of executive orders to strengthen the state's ability to manage water and habitat effectively in drought conditions, and called on all Californians to take action to conserve water; and

**WHEREAS**, in response to each of the Governor's Executive Orders and continuing drought conditions, the State Water Resource Control Board (SWRCB) subsequently amended and readopted a series of emergency statewide regulations to reduce outdoor water use, require urban water suppliers to implement mandatory outdoor irrigation restrictions, and allow local suppliers to impose fines or conduct other progressive enforcement actions for those who violate emergency regulations; and

**WHEREAS**, in response to SWRCB Emergency Drought regulatory requirements, the Sweetwater Authority Governing Board has amended the Authority's Drought Response Plan multiple times to update water conservation measures and water waste prohibitions; and

**WHEREAS**, on September 24, 2014, the Authority's Governing Board amended the Authority's Drought Response Plan to include the mandatory water restrictions and activated Level 2 of the Authority's Drought Response Plan; and

**WHEREAS**, the Authority's customers have responded to ongoing drought conditions by regularly exceeding mandatory water use reduction goals and along with much of the state, conserving water at unprecedented levels; and

**WHEREAS**, on May 9, 2016, in light of water supply conditions and positive statewide water conservation achievements, Governor Brown issued Executive Order B-37-16, that directed the SWRCB and Department of Water Resources (DWR) to update temporary emergency water restrictions and transition to permanent, long-term improvements in water use which include a new framework for determining urban water agency water use reduction targets, and permanently prohibits specific water waste practices; and

**WHEREAS**, it is no longer necessary to enforce the full range of mandatory water use restrictions required in Level 2 – Drought Alert in order to meet the new emergency short term and permanent longer term water conservation water reduction targets.

## RESOLUTION 16-10

**NOW THEREFORE BE IT RESOLVED** by the Governing Board of the Authority, as follows:

SECTION 1. All of the above recitals are true.

SECTION 2. The Governing Board called a public hearing for June 22, 2016, at 3:30 p.m. for the purposes of receiving public comments and protests concerning this Resolution. Notice of the public hearing was given by publication in a newspaper of general circulation within the Authority, once, seven (7) days in advance of the public hearing, in accordance with Government Code section 6061. At the Regular Board Meeting, the Governing Board of Sweetwater Authority reviewed the amendments to the Authority's Drought Response Plan, which are proposed to be adopted to implement the mandatory conservation measures. At the time and place set for the public hearing, this Resolution was considered and the Governing Board heard and considered the comments of all persons appearing at the hearing and all written comments and protests submitted prior to the close of the hearing.

SECTION 3. The Governing Board of the Authority directs deactivation of Level 2- Drought Alert, and a return to Level 1 – Drought Watch as defined and provided for within the Authority's Drought Response Plan.

SECTION 4. The Governing Board directs that all documents and other materials constituting the record of proceedings be maintained by the General Manager, or his designee, on file at Sweetwater Authority, located at 505 Garrett Avenue, Chula Vista, California 91910.

SECTION 5. This Resolution shall become effective as of the date of adoption and shall be published within ten (10) days of adoption, pursuant to California Water Code Section 376.

**PASSED, APPROVED, AND ADOPTED** by the Governing Board of Sweetwater Authority at a regular meeting duly held on the 22nd day of June 2016 by the following vote:

AYES: Directors Castaneda, Cerda, Morrison, Preciado, Thomas, and Van Deventer  
NOES: None  
ABSENT: Director Zamudio  
ABSTAIN: None

  
Teresa Thomas, Vice Chair

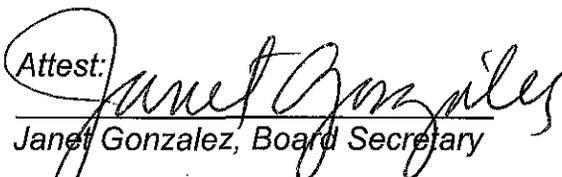
Attest:   
Janet Gonzalez, Board Secretary

Exhibit "A" – Drought Response Plan, dated June 22, 2016

**SWEETWATER AUTHORITY**  
**AMENDED DROUGHT RESPONSE PLAN**  
**June 22, 2016**

**SECTION 1. Declaration of Policy.**

*California Water Code Sections 350 et seq. permits distributors of a public water supply to declare a water shortage emergency condition and adopt regulations and restrictions of the delivery of water to conserve the water supply for the greatest public benefit with particular regard to domestic use, sanitation, and fire protection.*

*California Water Code Section 370 et seq. permits the use of allocation-based conservation water pricing to encourage water users to conserve water, increase efficient uses of water, and further discourage waste of water.*

*California Water Code Sections 375 et seq. permits public entities which supply water at retail for the benefit of persons within the service area of the public entity to adopt and enforce water conservation programs to reduce the quantity of water used by water customers for the purpose of conserving the water supplies of such public entity.*

*The Governing Board hereby establishes this Drought Response Plan based upon the need to conserve water supplies for the greatest public benefit, increase the efficient uses of water, discourage waste of water, and avoid or minimize the effects of any future shortage. This Drought Response Plan is in addition to any other regulatory requirements and mandated water use prohibitions enacted by the State of California.*

**SECTION 2. Findings.**

*The Governing Board finds and determines that a water shortage could exist based upon the occurrence of one (1) or more of the following conditions:*

- A) A general extended water supply shortage due to increased demand or limited supplies.*
- B) The supply and/or distribution of water by the San Diego County Water Authority (CWA) or certain other agencies become inadequate.*
- C) A major failure of the supply, storage, and distribution facilities of the Metropolitan Water District of Southern California (MWD), the CWA, or Sweetwater Authority (Authority) occurs.*
- D) The Governor proclaims a State of Emergency to exist throughout the State of California due to severe drought conditions.*

*The Governing Board also finds and determines that the conditions prevailing in the San Diego region require that the water resources available be put to maximum beneficial use; the waste or unreasonable use, or unreasonable method of use of water be discouraged; and that the conservation of such water be achieved to the maximum extent reasonable and beneficial use thereof in the interest of the customers of the Authority and for the public welfare.*

**SWEETWATER AUTHORITY**  
**AMENDED DROUGHT RESPONSE PLAN**  
**June 22, 2016**  
**(continued)**

**SECTION 3. Application.**

*This Drought Response Plan shall apply to all persons who use any water provided by the Authority.*

- A) This Drought Response Plan is only intended to further the conservation of water. It is not intended to implement any provision of federal, state, or local statutes, ordinances, or regulations relating to the protection of water quality or control of drainage or runoff.*
- B) Nothing in this Drought Response Plan is intended to limit the ability of the Authority to declare and respond to an emergency, including an emergency that affects the ability of the Authority to supply water.*
- C) The provisions of this Drought Response Plan do not apply to use of water from private wells or other approved alternate water sources including, but not limited to grey water and rain water catchment systems.*

**SECTION 4. Authorization.**

*Unless otherwise specified herein, The Authority's General Manager or a designated representative, is hereby authorized and directed to implement the provisions of this Drought Response Plan.*

**SECTION 5. Revenue Neutral Water Conservation Pricing Structure.**

*The Authority may establish a revenue neutral water conservation pricing structure, enabling the Authority to retain current revenue projections while encouraging customer conservation by adopting changes to its inclining block rate structure. The revenue neutral conservation pricing structure would involve changes in water commodity rates and charges in current block rate tiers or the addition of new block rate tiers to encourage conservation by water users. Adoption of any such water conservation pricing structure shall be subject to the requirements of all applicable laws including, but not limited to, Proposition 218.*

**SECTION 6. Reduction Levels.**

*The identified water conservation levels specified in this Drought Response Plan enable the Authority to control water use demands, assure reasonable and beneficial use of water, prevent unreasonable use of water within the Authority's service area, and plan and implement water management measures necessary to conserve water in a fair and orderly manner for the benefit of the public.*

*Water use reduction goals are percentage water reductions from a base (Base). The Base is the annual average of potable water used by all Authority customers during either the immediately preceding period in which no mandatory water use or supply restrictions were implemented, or a specified period aligned with state agency and/or wholesale water supplier's reference period. The Base period will be set by Board declaration and continue until changed by subsequent declaration.*

**SWEETWATER AUTHORITY**  
**AMENDED DROUGHT RESPONSE PLAN**  
**June 22, 2016**  
**(continued)**

*Customer target water allocations (Target Water Allocations) will be established for each property based upon each property's average historic water use during the Base period, less the percentage water use reduction goal to be achieved. When the Governing Board declares a water shortage emergency during a Level 2 – Drought Alert condition, a Level 3 – Drought Critical condition, or a Level 4 – Drought Emergency condition, no customer account shall use more than the Target Water Allocation for that parcel each billing cycle.*

*Most customers receive their water bills on a bi-monthly basis, or six (6) times a year, therefore a Target Water Allocation will be calculated for each billing cycle. The Target Water Allocation will be printed on each bill for both the current and next billing period. This will allow all customers to see their Target Water Allocation for the next billing cycle. The Target Water Allocation shall be the Base less the percentage of the particular drought level. For example, if a customer has a Base for September bills of 20 HCF and the Drought Level is 3, or 40 percent, then the customer's Target Water Allocation is 12 HCF.*

*Notwithstanding the below-noted general occurrences that trigger each level of drought response, the Governing Board may consider hydrologic conditions and social, political, and economic indicators and in its reasonable discretion determine the appropriate level of drought response. The Governing Board may consider short term (one year or less) and/or long term (multiple dry year) projected water supply shortfalls to determine appropriate percentage reduction goals. The Governing Board may increase the level of drought response for reasons including but not limited to notification of regional supply reductions, localized emergency events causing a local supply shortage, and/or a State agency or wholesale water supplier imposing mandatory water use restrictions or prohibitions on the Authority or end users.*

*The four levels of drought are defined as:*

- A) **Level 1 - Drought Watch.** A Level 1 – Drought Watch condition may occur when a program is initiated by the CWA and/or MWD, and/or the State Water Resources Control Board (SWRCB) to reach up to a ten percent (10%) water use reduction goal. Under a Level 1 – Drought Watch condition, Authority customers are requested to reduce consumption up to ten percent (10%) from the Base, and are required to comply with the water waste prohibitions as set forth in section 7. At a Level 1 – Drought Watch condition, the current water pricing structure would remain in effect with no imposition of a revenue neutral water conservation pricing structure. The General Manager shall declare a Level 1 – Drought Watch condition.*
- B) **Level 2 - Drought Alert.** A Level 2 – Drought Alert condition may occur when a program is initiated by CWA, MWD, and/or the SWRCB to reach up to a twenty percent (20%) water use reduction goal. Under a Level 2 – Drought Alert condition, Authority customers are requested to reduce consumption up to twenty percent (20%) from the Base, and are required to comply with the water waste prohibitions and water conservation measures as set forth in section 7. The Governing Board has sole authority to declare a Level 2 – Drought Alert*

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condition, and may also implement a revenue-neutral water conservation pricing structure.

*If during a Level 2 – Drought Alert condition the Governing Board implements a revenue-neutral water conservation pricing structure, then the Authority’s policy titled “Adjustment to Customer’s Water Bill” shall be suspended. The Governing Board may additionally declare a water shortage emergency, in the manner and on the criteria provided in California Water Code Section 350 et seq. and adopt appropriate regulations and restrictions under such authority.*

- C) **Level 3 - Drought Critical.** A Level 3 – Drought Critical condition may occur when a program is initiated by CWA, MWD and/or the SWRCB to reach up to a forty percent (40%) water use reduction goal. Under a Level 3 – Drought Critical condition, Authority customers are requested to reduce consumption up to forty percent (40%) from the Base, and are required to comply with the water waste prohibitions and water conservation measures as set forth in section 7. The Governing Board has sole authority to declare a Level 3 – Drought Critical condition, and may also implement a revenue-neutral water conservation pricing structure.

*If during a Level 3 – Drought Critical condition the Governing Board implements revenue-neutral water conservation pricing, then the Authority’s policy titled “Adjustment to Customer’s Water Bill” shall be suspended. The Governing Board may additionally declare a water shortage emergency, in the manner and on the criteria provided in California Water Code Section 350 et seq. and adopt appropriate regulations and restrictions under such authority.*

- D) **Level 4 - Drought Emergency.** A Level 4 – Drought Emergency condition may occur when a program is initiated by CWA, MWD and/or the SWRCB to reach in excess of a forty percent (40%) water use reduction goal. During a Level 4 – Drought Emergency condition, Authority customers are requested to reduce consumption by more than forty percent (40%) from the Base, and are required to comply with the water waste prohibitions and water conservation measures as set forth in section 7. The Governing Board has sole authority to declare a Level 4 – Drought Emergency condition, and may also implement a revenue-neutral water conservation pricing structure.

*If during a Level 4 – Drought Emergency condition the Governing Board implements revenue-neutral water conservation pricing, then the Authority’s policy titled “Adjustment to Customer’s Water Bill” shall be suspended. The Governing Board may additionally declare a water shortage emergency, in the manner and on the criteria provided in California Water Code Section 350 et seq. and adopt appropriate regulations and restrictions under such authority.*

**SECTION 7. Water Waste Prohibitions and Water Conservation Measures.**

*These measures are established to encourage all Authority customers to use available water wisely and take all reasonable steps to reduce their water use, are aligned with*

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*state imposed end user water waste prohibitions, and are designed to increase the efficiency of water use throughout the service area. Authority customers are to carefully manage indoor and outdoor water use and eliminate water waste. "Use Water Wisely" is the underlying theme designed to achieve a water conservation ethic for all customers, which is especially important during the drought.*

**A) State Wide Water Waste Prohibitions** –*The following practices have been determined by the state to waste water, and are therefore prohibited by end users at all times, including during a Level 1 – Drought Watch condition, Level 2 – Drought Alert, Level 3 – Drought Critical, and Level 4 – Drought Emergency:*

- 1. Customers are prohibited from hosing off sidewalks, driveways, or other hardscapes except where necessary to address an immediate health and safety need or to comply with a term or condition in a permit issued by a State or federal agency.*
- 2. Customers are prohibited from washing automobiles with hoses not equipped with a shut-off nozzle.*
- 3. Customers are prohibited from using non-re-circulated water in a fountain or other decorative water feature.*
- 4. Customers are prohibited from watering lawns in a manner that causes runoff.*
- 5. Customers are prohibited from watering lawns within forty-eight (48) hours after measurable precipitation.*
- 6. Customers are prohibited from irrigating ornamental turf on public street medians with potable water.*

**B) Water Conservation Measures** – *The following end user water conservation measures are designed to be more restrictive with each drought level, to conserve available supplies for future use.*

*In addition to the above noted state water waste prohibitions, the following measures shall apply at all times, including during a Level 1 – Drought Watch condition:*

- 1. Water should be used reasonably and productively at all times.*
- 2. Customers are to repair major water leaks immediately and minor water leaks within twenty-four (24) hours of discovery.*
- 3. Customers are encouraged to restrict hose washing of parking areas, tennis courts, patios, or other paved areas to periods of immediate safety or sanitary hazards.*
- 4. Customers are encouraged to use an automatic shut-off nozzle when using a hand-held hose for spraying, landscape watering, trailer/vessel washing, or structure washing.*
- 5. Customers are encouraged to minimize the application of water to outdoor landscapes in a manner that causes runoff; such that no water flows onto*

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*adjacent properties, non-irrigated areas, private and public walkways, roadways, parking lots or structures.*

6. *Customers are encouraged to limit the application of potable water to outdoor landscapes during and within forty-eight (48) hours after measurable rainfall.*
7. *Customers are encouraged to use drip methods or hand irrigation whenever possible and prudent to water landscaped areas, including trees and shrubs that are not irrigated by a landscape irrigation system; limit sprinkler operation to the hours of 6:00 p.m. to 9:00 a.m. the following morning, except for the first thirty (30) days necessary to establish a new lawn; and to irrigate no more than three (3) days per week.*
8. *Customers are encouraged to use re-circulating systems for recreational water features.*
9. *Serve and refill water in restaurants and other food service establishments only upon requests.*
10. *Offer guests in hotels, motels, and other commercial lodging establishments the option of not laundering towels and linens daily.*

*The above noted state water waste prohibitions and these additional measures apply during a Drought Alert – Level 2. To the extent any of the following measures conflict with measures in Level 1, the following language will replace the conflicting language in the measures in Level 1.*

1. *Customers shall repair major water leaks immediately and minor water leaks within twenty-four (24) hours of discovery.*
2. *Customers are to restrict hose washing of, parking areas, tennis courts, patios, or other paved areas to periods of immediate safety or sanitary hazards.*
3. *Customers must use an automatic shut-off nozzle when using a hand-held hose for spraying, trailer/vessel washing, or structure washing.*
4. *Customers are to use a hand-held hose equipped with a positive shut-off nozzle or bucket to water landscaped areas, including trees and shrubs that are not irrigated by a landscape irrigation system.*
5. *Customers are restricted from watering outdoor landscapes in a manner that causes runoff such that water flows onto adjacent properties, non-irrigated areas, private and public walkways, roadways, parking lots or structures.*
6. *Customers are restricted from applying potable water to outdoor landscapes during and within forty-eight (48) hours after measurable rainfall.*
7. *Customers are to restrict outdoor landscape sprinkler operation to the hours of 6:00 p.m. to 9:00 a.m. the following morning; and to irrigate no more than two (2) days per week, or as otherwise determined by the Governing Board in its reasonable discretion, which may include limitations to specific days of the week.*

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8. *Customers are encouraged to limit lawn watering and landscape irrigation using sprinklers to no more than ten (10) minutes per watering station per day. This recommendation does not apply to landscape irrigation systems using water efficient devices, including but not limited to weather-based controllers, drip/micro-irrigation systems and stream rotor sprinklers.*
9. *Stop operating ornamental fountains, decorative water features, and recreational water features unless the water is part of a recirculating system.*
10. *Customers are encouraged to stop filling or re-filling pools, ornamental lakes and/or ponds, except to the extent needed to sustain aquatic life.*
11. *Eating and drinking establishments, or other public places where food or drink are served and/or purchased, are limited to serving drinking water only upon request.*
12. *Operators of hotels and motels other commercial lodging establishments shall offer guests the option of not laundering towels and linens daily, and shall prominently display notice of this option in each guest room using clear and easily understood language.*
13. *Customers are prohibited from irrigating with potable water landscapes outside newly constructed homes and buildings in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development.*

*The above-noted state water waste prohibitions, measures in Levels 1 and 2, and the following additional measures apply during a Drought Critical – Level 3. To the extent any of the following measures conflict with measures in Levels 1 and 2, the following language will replace the conflicting language in the lower level requirements.*

1. *Customers shall stop washing sidewalks, driveways, parking areas, tennis courts, patios, or other paved areas except to address immediate health and safety or to comply with a term or condition in a permit issued by a state or federal agency.*
2. *Customers shall stop hand-washing vehicles. Customers are encouraged to stop washing vehicles except at commercial carwashes that re-circulate (reclaim) water onsite, or by high pressure/low volume wash systems.*
3. *Customers are prohibited from watering outdoor landscapes in a manner that causes runoff such that water flows onto adjacent properties, non-irrigated areas, private and public walkways, roadways, parking lots or structures.*
4. *Customers shall only operate landscape sprinklers between the hours of 6:00 p.m. to 9:00 a.m. the following morning.*
5. *Customers are to restrict residential and commercial landscape irrigation to no more than two (2) days per week, or as otherwise determined by the Governing*

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*Board in its reasonable discretion, which may include limitations to specific days of the week.*

- 6. Customers are to limit lawn watering and landscape irrigation using sprinklers to no more than ten (10) minutes per watering station per day. This does not apply to landscape irrigation systems using water efficient devices, including but not limited to weather-based controllers, drip/micro-irrigation systems and stream rotor sprinklers.*
- 7. Customers shall stop operating ornamental fountains or similar decorative water features with potable water. This prohibition does not apply to decorative fountains and landscape water features which are connected to alternative water sources.*
- 8. Customers are encouraged to stop filling or re-filling pools, ornamental lakes and/or ponds, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to declaration of a drought response level under this ordinance.*
- 9. No new potable water service shall be provided, no new temporary meters or permanent meters shall be provided, and no statements of immediate ability to serve or provide potable water service (such as will serve letters, certificates, or letters of availability) shall be issued, except under the following circumstances:
  - a. A valid, unexpired building permit has been issued for a project; or*
  - b. A project is necessary to protect the public's health, safety, and welfare; or*
  - c. The applicant provides substantial evidence of an enforceable commitment that water demands for a project will be offset prior to the provision of a new water meter(s) to the satisfaction of the Authority.**

*This provision shall not be construed to preclude the resetting or turn-on of meters to provide continuation of water service or to restore service that has been interrupted for a period of one (1) year or less.*

*The above-noted state water waste prohibitions, measures in Levels 1, 2, and 3, and the following additional measures apply during a Drought Emergency – Level 4. To the extent any of the following measures conflict with measures in Levels 1, 2 and 3, the following language will replace the conflicting language in the lower level requirements.*

- 1. Stop all landscape irrigation except:
  - a. Crops and landscape products of commercial growers and nurseries*
  - b. Maintenance of existing landscaping necessary for fire protection as specified by the fire marshal of the local fire protection agency having jurisdiction over the property to be irrigated*
  - c. Maintenance of existing landscaping for erosion control**

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- d. *Maintenance of plant materials identified to be rare or essential to the well-being of rare animals*
- e. *Maintenance of landscaping within active public parks and playing fields, day care centers, school grounds, cemeteries, and golf course greens, provided that such irrigation does not exceed two (2) days per week*
- f. *Watering of livestock*
- g. *Public works projects and actively irrigated environmental mitigation projects*

**SECTION 8. Mandatory Restrictions.**

*When customers of the Authority can no longer meet water use reduction goals as defined for any drought level through requested efforts, or when the amount of water supply available to the Authority for service to customers is determined to be inadequate to the extent that there would be insufficient water for human consumption, sanitation and fire protection, the Governing Board may activate by resolution mandatory water use reductions, and/or additional prohibitions or measures in accordance with California Water Code 350 et seq.*

**SECTION 9. Violations and Penalties.**

*Any customer who violates a state water waste prohibition at any time, and/or uses, causes to be used, or permits the use of water in violation of this Drought Response Plan during a Level 2 – Drought Alert condition, or Level 3 – Drought Critical condition, or Level 4 – Drought Emergency condition is guilty of an offense punishable as provided:*

- A) *Each day that a violation of a prohibited water conservation measure occurs is a separate offense.*
- B) *Progressive administrative fines may be levied for each violation as follows:*
  - 1. *First violation of any prohibition - written warning.*
  - 2. *Second violation of any prohibition within one (1) year - \$50.*
  - 3. *Third violation of any prohibition within one (1) year - \$100.*
  - 4. *Fourth violation of any prohibition within one (1) year - \$200.*
  - 5. *Each violation thereafter of any prohibition within one (1) year - \$500.*
  - 6. *Any violation occurring more than one (1) year from the previous will be treated as a first violation.*

*Customers using more than the Target Water Allocation will be notified of their overage and given one (1) full billing cycle to bring their usage below the Target Water Allocation. Failure to do so may result in the implementation of the following administrative fines levied as follows, and/or other measures the Authority may determine at a later date:*

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1. *First and second allocation overage violation - written warning.*
2. *Third violation of any allocation overage within one (1) year - \$100.*
3. *Fourth violation of any allocation overage within one (1) year - \$200.*
4. *Each violation thereafter of allocation overage within one (1) year - \$500.*
5. *Any allocation overage violation occurring more than one (1) year from the previous will be treated as a first violation.*

*Should mandatory water use reductions and/or conditions be activated by resolution, any person who willfully uses, causes to be used, or permits the use of water in violation of this Drought Response Plan, adopted by Resolution 16-09 is guilty of an offense punishable as provided herein.*

- A) *Each violation of this Drought Response Plan may be prosecuted as a misdemeanor punishable by imprisonment in the county jail for not more than thirty (30) days or by a fine not exceeding one thousand dollars (\$1,000 -U.S.A. currency), or by both, as provided in California Water Code Section 377.*
- B) *Willful violations of mandatory conservation measures which may be put into place during any drought level may be enforced by discontinuing service to the property at which the violation occurs, as provided by California Water Code Section 356 et seq.*
- C) *All remedies provided herein, both civil and criminal, shall be cumulative, and not exclusive.*

**SECTION 10. Exemptions and Appeals.**

*In order to encourage the efficient use of water for sanitary, health care, and conservation benefit purposes, specific customer classes are exempted from the water use reduction penalties.*

- A) *An exemption gives specified accounts the allowance not to meet their target conservation goals without monetary penalty.*
- B) *Exemptions are under the discretion of the Authority and can be removed at any time. The Authority has identified and provided an exemption from penalties to water accounts for:*
  1. *Residential water use that is:*
    - a. *Less than or equal to 28 HCF in the bi-monthly billing periods for bills received in July, August, September and October, and 22 HCF for bi-monthly billing periods for bills received all other months during Drought Level 2.*
    - b. *Less than or equal to 17 HCF in the bi-monthly billing period during Drought Level 3.*
    - c. *Less than or equal to 11 HCF in the bi-monthly billing period during Drought Level 4.*

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2. *Related to a medical nature, in order to ensure the health and safety of the general public.*
3. *Commercial establishments that provide an opportunity for conservation by offering services that allow individuals alternative means for completing water dependent tasks.*

*Any customer desiring to initiate a Target Water Allocation Appeal may do so at any time. Any customer desiring to appeal a penalty may do so within two (2) weeks of receipt of the bi-monthly or monthly bill. Any such request must be in writing utilizing the appeal form and filed with the General Manager or his/her designee. Customers shall have the right to appeal the decision of the General Manager or his/her designee to the Governing Board by filing a written appeal within seven (7) days of receipt of the written decision of the General Manager, or his/her designee. The Governing Board may delegate to a committee of its members the authority to consider and rule upon the written appeal.*

**SECTION 11. Activation and Deactivation.**

*The Governing Board of Sweetwater Authority hereby directs the General Manager to implement this Drought Response Plan by making appropriate declarations, determinations, and findings necessary and establish a Level 1 – Drought Watch condition. The declaration of any change in a Level 1- Drought Watch condition shall be reported to the Governing Board at its next Regular Meeting. The declaration of a Level 2 – Drought Alert condition, Level 3 – Drought Critical condition and Level 4 – Drought emergency condition shall be made by the Governing Board, in accordance with the provisions hereof.*

*Following the declaration of any drought level, the General Manager shall implement the applicable provisions of this Drought Response Plan and make appropriate public announcements and notices. The designated drought response level shall become effective immediately upon announcement, unless otherwise stated at the time of resolution by the Governing Board.*

*Except for deactivation of a Level 1 – Drought Watch condition, which can be implemented by the General Manager and reported to the Governing Board at its next Regular Meeting, the deactivation of a drought response level shall be by resolution of the Governing Board.*

## Appendix C

### Sweetwater Authority's Resolution 01-19 and Interim Groundwater Management Plan

**RESOLUTION 01-19**

**RESOLUTION OF THE GOVERNING BOARD  
OF SWEETWATER AUTHORITY  
ADOPTING AN INTERIM  
GROUNDWATER MANAGEMENT PLAN**

**WHEREAS**, Sweetwater Authority and its predecessors have been engaged in groundwater management activities associated with the Authority's groundwater projects in the Sweetwater Valley (Department of Water Resources Basin Number 9-17) and the San Diego Formation for over one hundred and thirty-two years, and

**WHEREAS**, the Governing Board of Sweetwater Authority, by approval of Budget Project Number 99-21A approved funding of the preparation of a Groundwater Management Plan, and

**WHEREAS**, Sweetwater has plans to contract with an engineering consultant to work with staff to prepare a formal Groundwater Management Plan pursuant to Water Code Section 10750 et seq. (AB 3030), and

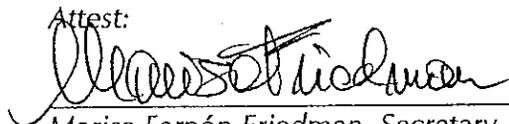
**WHEREAS**, the Governing Board wishes to memorialize it's existing groundwater management activities as an interim Groundwater Management Plan,

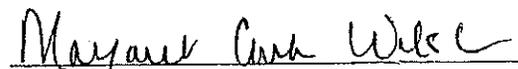
**NOW, THEREFORE, BE IT RESOLVED** by the Governing Board of Sweetwater Authority that, the attached Interim Groundwater Management Plan is adopted to guide the groundwater management activities of Sweetwater Authority until such time as it is replaced by a subsequent Groundwater Management Plan under Water Code Section 10750 et Seq. (AB3030) or other statutes.

**PASSED AND ADOPTED** at a regular meeting of the Governing Board of Sweetwater Authority held on this 9<sup>th</sup> day of November, 2001 by the following vote, to wit:

AYES:	Directors Doud, Jarrett, Pocklington, Waters, Welsh, Wolniewicz, and Wright
NOES:	None
ABSENT:	None
ABSTAIN:	None

Attest:

  
\_\_\_\_\_  
Marisa Farpón-Friedman, Secretary

  
\_\_\_\_\_  
Margaret Cook Welsh, Chair

# **Sweetwater Authority Draft Interim Groundwater Management Plan**

## **A. Interim Plan**

This interim groundwater management plan shall govern the groundwater management activities of the Sweetwater Authority until a subsequent Groundwater Management Plan is adopted by the Sweetwater Authority Governing Board.

## **B. Groundwater Management Area Boundaries**

Sweetwater Authority shall engage in groundwater management in the area of the Sweetwater Valley basin. This basin is as described in the State of California Department of Water Resources Bulletin Number 118 as the Sweetwater Valley Basin Number 9-17. Also included in the groundwater management activities are the watershed of the Sweetwater River and the underlying San Diego Formation within the Service area of the Sweetwater Authority.

## **C. Groundwater Management Strategies**

### **1. Maintain static groundwater levels**

It shall be the policy and goal of Sweetwater Authority groundwater management to extract from the San Diego Formation so as to not cause a decline in the long-term static water levels. In the Sweetwater Valley basin alluvial areas, the policy and goal of Sweetwater Authority groundwater management shall be to extract groundwater to not increase seawater intrusion or cause environmental impacts or damage other producers in the alluvial portion of the basin through the operations of Sweetwater Authority's groundwater projects.

### **2. Protect groundwater from pollution by manmade activities**

Sweetwater Authority shall work with the San Diego Regional Water Quality Control Board (Region 9) to ensure that the groundwater quality within the Sweetwater Valley Basin and the San Diego Formation is protected from contamination.

### **3. Monitor seawater intrusion**

Sweetwater Authority shall monitor groundwater levels, quality and seawater intrusion to ensure that activities of Sweetwater Authority are not causing seawater intrusion.

#### **4. Monitor groundwater quality and quantity**

Sweetwater Authority shall periodically monitor the levels and quality of groundwater in the monitoring wells shown in Appendix A. The Authority shall maintain a database of this periodic information for display on the Sweetwater Authority web page located at [www.sweetwater.org](http://www.sweetwater.org).

#### **5. Sweetwater Authority Groundwater Projects**

Current Sweetwater Authority groundwater projects include the following:

- a. Existing National City Wells.
- b. Existing Richard A. Reynolds Brackish Groundwater Demineralization Facility and its nine groundwater extraction wells
- c. Monitoring of existing groundwater monitoring wells and maintenance of a groundwater level and groundwater quality database.
- d. Proposed National City Aquifer Storage and Recovery (ASR) Project.

#### **6. Develop New or Expanded Groundwater Supplies**

Staff shall perform activities to develop new groundwater supplies and expand existing groundwater supplies and provide Budget Requests for the Governing Board's approval for these activities, as follows:

- a. Investigate the development of new wells to extract potable or brackish groundwater to facilitate expansion of existing groundwater projects as in paragraph C.5. above.
- b. Investigate new technologies and their application to existing groundwater sources.
- c. Explore conjunctive use activities to augment or expand existing groundwater supplies.

#### **D. Implementation**

Sweetwater Authority shall work within the watershed of the Sweetwater River, the Sweetwater Valley Basin (Number 9-17) and the San Diego Formation within the service area of the Sweetwater Authority to manage groundwater levels and

protect groundwater quality. By adoption of this document, the Sweetwater Authority Governing Board hereby authorizes staff to maintain databases and perform groundwater management activities as described in this interim groundwater management plan.

#### **E. Data Collection and Management**

Sweetwater Authority shall maintain a database of groundwater levels and water quality for the existing monitoring wells shown in Appendix A. Staff shall, to the best of its abilities, carry out groundwater management activities using the strategies in Section C of this interim groundwater management plan.

#### **F. Education**

The Sweetwater Authority Stakeholder Survey identifies issues important to stakeholders in the watershed of the Sweetwater River, the Sweetwater Valley basin and the San Diego Formation within the Sweetwater Authority service area. As a part of the groundwater management activities to be carried out under the auspices of this interim groundwater management plan, Sweetwater Authority staff is directed to meet with other public entities and the public interested in the groundwater activities of the Sweetwater Authority. The purpose of these meetings shall be to coordinate information about Sweetwater Authority groundwater management activities and projects, receive input and responses from the public and public entities. Also these meetings shall strive to develop a base of support and a forum for constructive criticism and input to Sweetwater Authority for the groundwater management activities of the Authority.

#### **G. Resolutions of the Governing board, Sweetwater Authority Policy and Legal Authority**

##### **1. Resolutions of the Governing Board**

Adoption of the attached Resolution 01-19 establishes governing board adoption of this interim groundwater management plan and provides authorization for Sweetwater Authority staff to proceed with the activities described within.

##### **2. Sweetwater Authority Policy concerning groundwater management**

Sweetwater Authority's policies regarding groundwater management activities are described within this plan and any subsequent amendments to this interim groundwater management plan authorized by the Governing Board.

### **3. Legal Authority**

Sweetwater Authority operates under the legal authority contained in Irrigation District Law as included in water code section 20500 et seq. Under this authorization the Sweetwater Authority may control, distribute, store, spread, sink, treat, purify, recapture and salvage any water for the beneficial use of the district. Further Sweetwater Authority according to water code 22078 may do any act to put to any beneficial use any water under its control.

Also under water code section 22076 Sweetwater Authority has, though its groundwater management practices have not been previously memorialized in an AB 3030 plan (water code section 10750 et seq.) programs that relate to the following:

- a. the control of saline water intrusion
- b. identification of and management of wellhead protection areas and recharge areas
- c. replenishment of groundwater
- d. monitoring of groundwater levels and storage
- e. construction and operation of a brackish groundwater demineralization facility
- f. development of state and federal partnerships in the funding of groundwater management activities
- g. review and coordination of land use permitting with the County of San Diego to access development activities and their impact on groundwater
- h. management of its groundwater resources by Sweetwater Authority as a local agency thereby making state-controlled groundwater management unnecessary

### **H. Program Coordination**

The General Manager and the Operations Manager of Sweetwater Authority shall be responsible to the Governing Board for the performance of the groundwater management activities described in this interim groundwater management plan.

## Appendix D

### Fire Flow Assessment



## National City Bayfront Development (Site 1) - Hydraulic Analysis

There is insufficient capacity to meet the required demands for development of site 1. In order to adequately serve the proposed site, it would be required resize approximately 400 LF of existing 12" main to 16".



## National City Bayfront Development (Site 3) - Hydraulic Analysis

There is insufficient capacity to meet the required demands for development of site 3. In order to adequately serve the proposed site, it would be required to install approximately 1,500 LF of 16" main along the proposed road realignment and resizing approximately 1,700 LF of existing 12" main to 16".