TABLE OF CONTENTS

Section 5 Environmental Information 5.11-1

5.11 Traffic/Transportation 5.11-1
5.11.1 Affected Environment 5.11-1
5.11.1.1 Existing Circulation System 5.11-2
5.11.1.2 Study Roadways and Intersections 5.11-3
5.11.1.3 Roadway Segment Level of Service 5.11-4
5.11.1.4 Peak Hour Intersection Level of Service 5.11-5
5.11.1.5 Existing Level-of-Service Analysis 5.11-6
5.11.2 Environmental Consequences 5.11-8
5.11.2.1 Significance Thresholds 5.11-8
5.11.2.2 Construction-Related Effects (2011, Peak Project Construction) 5.11-8
5.11.2.3 Operation-Related Effects (2012, Project Operation) 5.11-8
5.11.2.4 Project Construction Workforce Distribution 5.11-9
5.11.2.5 Project Trip Generation 5.11-9
5.11.2.6 Effect Analysis for 2011 Conditions 5.11-10
5.11.2.7 Effects Analysis for 2012 Conditions 5.11-14
5.11.3 Cumulative Effects 5.11-15
5.11.4 Mitigation Measures (Project Construction) 5.11-15
5.11.5 Mitigation Measures (Project Operation) 5.11-16
5.11.6 Applicable Laws, Ordinances, Regulations, and Standards 5.11-16
5.11.6.1 Federal Authorities and Administering Agencies 5.11-18
5.11.6.2 State Authorities and Administering Agencies 5.11-19
5.11.6.3 Local Authorities and Administering Agencies 5.11-22
5.11.6.4 Permits Required and Permitting Schedule 5.11-23
5.11.7 References 5.11-23

Tables

Table 5.11-1 Existing Roadway System

Table 5.11-2 Study Intersections

Table 5.11-3 Hourly Capacity by Roadway Type

Table 5.11-4 LOS Descriptions

Table 5.11-5 Roadway Segment LOS – Existing Conditions

Table 5.11-6 Peak-Hour Intersection LOS – Existing Conditions

Table 5.11-7 Peak Project Construction Trip Generation

Table 5.11-8 Roadway Segment LOS – No-Project Conditions (2011)

Table 5.11-9 Peak-Hour Intersection LOS – No-Project Conditions (2011)

Table 5.11-10 Roadway Segment LOS – Peak Project Construction Conditions (2011)
Table 5.11-11 Peak-Hour Intersection LOS – Peak Project Construction Conditions (2011)
Table 5.11-12 Summary of LORS – Traffic/Transportation
Table 5.11-13 Agency Contact List for LORS
Table 5.11-14 Applicable Permits

Figures

Figure 5.11-1 Regional Vicinity - Transportation
Figure 5.11-2 Transportation Setting of the Local Project Area and Affected Roadways
Figure 5.11-3 2008 Existing Lane Geometry
Figure 5.11-4 2008 Existing Traffic Volumes
Figure 5.11-5 2011 Lane Geometry
Figure 5.11-6 2011 No-Project Traffic Volumes
Figure 5.11-7 2011 No-Project Plus Project Construction Traffic Volumes

5.11 TRAFFIC/TRANSPORTATION

This section provides a summary of the transportation infrastructure and traffic conditions in the vicinity of the Watson Cogeneration Steam and Electric Reliability Project (Project) and analyzes the direct construction and operating effects of the Project on the surrounding transportation system. This section also analyzes the potential effects on traffic and transportation systems in the Project Area that may result from Project construction and operation. The analysis considers the regional and local roadways, current and Project-related traffic conditions, access to the Project Site, and transportation of hazardous materials related to Project construction and operation.

The Project study area for the traffic and transportation analysis includes the immediate vicinity of the Project Site and the surrounding local and regional circulation system (Figure 5.11-1, Regional Vicinity - Transportation).

5.11.1 Affected Environment

The Project Site is a 2.5-acre brown field site located within the boundary of the existing Watson Cogeneration Facility, which is a 21.7-acre area within the a 428-acre parcel further described as Assessors Parcel Number (APN) 7315-006-003, 1801 Sepulveda Boulevard, Carson, California, 90745 and is integral to BP's existing Carson Refinery (BP Refinery). The street address of the Project Site is located within the boundary of the existing Watson Cogeneration Facility at 22850 South Wilmington Avenue, Carson, California. Figure 3-1, Regional Map, depicts the Project Site and surrounding area. An existing warehouse/maintenance shop on a portion of the site will be removed as part of the Project. The Project Site is located approximately 0.7 mile south of the 405 Freeway, roughly bounded by Wilmington Avenue to the west, East Sepulveda Boulevard to the south, and South Alameda Street to the east.

The Project Site elevation is approximately 32 feet above mean sea level. Because the site is located within the existing refinery property boundary, the Project Site and surrounding areas are highly developed, and have been subject to disturbance for many years.

The Project's primary objective is to provide additional process steam in response to the refinery's process steam demand. The Project complements the existing cogeneration facility located within the confines of the refinery. The existing facility has four GE 7EA combustion turbine generators (CTGs), four heat recovery steam generators (HRSGs), and two steam turbine generators. The Project consists of adding a fifth CTG/HRSG to the existing configuration and is referred to as the "fifth train."

The Construction Laydown and Parking Area is a paved 25-acre parcel located approximately 1 mile southeast of the Project Site, at the northeast corner of East Sepulveda Boulevard and South Alameda Street. The area is owned by BP and is currently used as a truck parking and staging area.

No off-site improvements associated with the Project, such as water supply, natural gas or wastewater pipelines, are currently planned for the Project. The Project will connect to the existing supply pipelines currently located at the facility.

This section describes the existing conditions of the roadway circulation system within the Project study area. This section also presents the traffic volume and existing operating conditions of the study area roadway segments and intersections.

5.11.1.1 Existing Circulation System

The transportation network within the Project study area consists primarily of city arterials, collectors, local roadways, and state-maintained freeways. Los Angeles County's highway system, including the City of Carson's circulation system, plays a major role in the movement of goods originating from both interstate and international sources (from the Ports of Los Angeles and Long Beach).

As illustrated in Figure 5.11-2, Transportation Setting of the Local Project Area and Affected Roadways, the Project study area is primarily served by the 405 Freeway to the north, Wilmington Avenue to the west, East Sepulveda Boulevard to the south, and South Alameda Street to the east. Information regarding existing traffic volumes, truck traffic, capacity, and level of service (LOS) on these highways within the Project study area is discussed in detail in Section 5.11.2, Environmental Consequences.

During the traffic study field review there were no roadway features such as vertical and horizontal curves observed that may pose as a public safety concern.

Highways

405 Freeway. The 405 Freeway is a major north-south interstate freeway that runs through Los Angeles and Orange Counties that extends from northern Los Angeles County toward south Orange County where it merges with I-5. The 405 Freeway provides for four general purpose and one high-occupancy vehicle mainline lanes in each direction with wide shoulders and a center median. The 405 Freeway has separate acceleration/ deceleration lanes at the interchange of the 405 Freeway/South Alameda Street and 405 Freeway/Wilmington Avenue. It is posted at 70 miles per hour (mph) in the vicinity of the Project study area. The average daily traffic (ADT) on the 405 Freeway in the vicinity of the Project Site is 294,000 vehicles per day with 6 percent being truck traffic.

Local Roads

The primary local roadways in the vicinity of the Project Site are Wilmington Avenue, Sepulveda Boulevard, and East 223rd Street. The local roadway characteristics are briefly described below.

Alameda Street. Alameda Street is a north-south major arterial that is located east of the Project Site. This street is one of the primary access routes to the site. The roadway provides three lanes in each direction and has a posted speed limit of 45 mph in the vicinity of the Project Site. The ADT on Alameda Street just south of the 405 Freeway is 23,175 vehicles per day.

Wilmington Avenue. Wilmington Avenue is a north-south, four-lane primary road to the west of the Project Site. It starts at Lomita Street on the south and ends at Firestone Boulevard (State Route 42) on the north. It has four through lanes (two in each direction) with 6 feet of shoulder on the east side. Currently, the segment of Wilmington Avenue near the Project Site carries a

high percentage of heavy truck traffic. The intersection of Wilmington Avenue and the BP Carson Refinery access road is unsignalized, with stop signs on the access road. The posted speed limit is 40 mph in the vicinity of the Project Site.

Sepulveda Boulevard. Sepulveda Boulevard is a four-lane, east-west local roadway located south of the Project Site. It starts at Prospect Avenue on the west and ends at the Terminal Island Freeway (103) on the east, where it changes name to Willow Street. The intersection of Sepulveda Boulevard and Wilmington Avenue is controlled by a traffic signal. Currently, Sepulveda Boulevard has a posted speed limit of 40 mph in the vicinity of the Project Site.

East 223rd Street. East 223rd Street is a four-lane, east-west local roadway located north of the Project Site. It starts at Plaza Del Amo on the west and ends near Santa Fe Avenue on the east, where it changes name to Wardlow Road. The intersection of 223rd Street and Wilmington Avenue is controlled by a traffic signal. Currently, the speed limit on 223rd Street is posted at 45 mph in the vicinity of the Project Site.

Other Transportation Facilities

Connector Roads. Some connector roads are located in the vicinity of the Project Site. The existing connecting roadways provide linkages from Alameda Street to Sepulveda Boulevard and East 223rd Street. The intersections of the Alameda Street/East 223rd connector road and the Alameda Street/Sepulveda Boulevard connector road are currently signalized.

Bicycle Facilities. No designated bicycle routes exist within the immediate vicinity of the Project Site and study area.

Pedestrian Facilities. Sidewalks are generally present on one or both sides (usually 6 feet wide) on the local roadways described above. Field observations near the Project Site revealed light pedestrian activities in the vicinity of the site.

Railroad Facilities. A rail line track crosses East 223rd Street at a distance of approximately 500 feet west of the Wilmington Avenue/East 223rd Street intersection. The Alameda Corridor is key goods movement railroad facility for Southern California.

Truck Routes. The portions of Alameda Street and Wilmington Avenue in the vicinity of the Project Site carry a high percentage of heavy truck traffic. Most of these trucks travel to and from the ports of Long Beach and Los Angeles container terminals. All roadway segments evaluated are designated truck routes in the City of Carson General Plan, Transportation and Infrastructure Element.

Transit Facilities. Two transit bus services serve the two roadways near the vicinity of the Project Site. Los Angeles County Metro Bus Route 205 serves Alameda Street and City of Carson Circuit Route F serves Wilmington Avenue and 223rd Street to the west of the Project Site.

5.11.1.2 Study Roadways and Intersections

Table 5.11-1, Existing Roadway System, describes the existing roadway system in the Project study area, including roadway classifications, number of lanes, and the posted speed limits.

Table 5.11-1
Existing Roadway System

Roadway	Segment	Classification	No. of Lanes	Posted Speed Limit (mph)
405 Freeway	Between Alameda Street and Wilmington Avenue	Freeway	4/4[1]	65
East 223rd Street	Between Alameda Street and Wilmington Avenue	Major Arterial	2/2	45
Alameda Avenue	Between 223rd Street and Sepulveda Boulevard	Major Arterial	3/3	45
Wilmington Avenue	Between 223rd Street and Sepulveda Boulevard	Major Arterial	2/2	40
East Sepulveda Boulevard	Between Alameda Street and Wilmington Avenue	Major Arterial	2/2	40

Source: Watson Cogeneration Steam and Electric Reliability Project Team, 2008.
Notes:
[1] Excluding the high-occupancy vehicle lane.
mph = miles per hour

Table 5.11-2, Study Intersections, shows the key study area intersections that have been identified for analysis under conditions of Project construction and Project operation.

Table 5.11-2
Study Intersections

Intersection	Traffic Control
1. 223rd Street/405 Freeway south-bound on-/off-ramps	Signalized
2. 223rd Street /Wilmington Avenue	Signalized
3. Wilmington Avenue/Sepulveda Boulevard	Signalized
4. Sepulveda Boulevard/Alameda Street ramp	Signalized
5. Alameda Street/Sepulveda Boulevard ramp	Signalized
6. Alameda Street/223rd Street connector	Signalized
7. Alameda Street/405 Freeway north-bound ramp	Signalized

Source: Watson Cogeneration Steam and Electric Reliability Project Team, 2008.

5.11.1.3 Roadway Segment Level of Service

Segment LOS standards and thresholds provide the basis for analysis of arterial roadway segment performance. The analysis of roadway segment LOS is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast ADT volumes. The City of Carson roadway capacity standards were based on the Los Angeles County Congestion Management Program (CMP) (Los Angeles County 2004) and modified for special conditions in Carson. The capacities shown in Table 5.11-3, Hourly Capacity by Roadway Type, reflect the maximum numbers of vehicles per hour that can be reasonably carried on the roadway under prevailing traffic conditions.

Table 5.11-3
Hourly Capacity by Roadway Type

Facility Type	Hourly Capacity (vehicles/lane/hour)
Two-way major arterial	750
Two-way secondary arterial	750
Collector and local streets	750

Source: City of Carson Transportation and Infrastructure Element, 2006.

Table 5.11-4, LOS Descriptions, presents the range of volume-to-capacity (V/C) ratios and corresponding LOS standards utilized to analyze arterial roadways and intersections.

Table 5.11-4
LOS Descriptions

LOS	Description of Operation	Range of V/C Ratios
A	Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.	0.00 to 0.60
B	Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form.	0.61 to 0.70
C	Good operation. Occasionally drivers may have to wait more than 60 seconds, and back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted.	0.71 to 0.80
D	Fair operation. Cars are sometimes required to wait more than 60 seconds during short peaks. There are no long-standing traffic queues. This level is typically associated with design practice for peak periods.	0.81 to 0.90
E	Poor operation. Some long-standing vehicular queues develop on critical approaches to intersections. Delays may be up to several minutes.	0.91 to 1.00
F	Forced flow. Represents jammed conditions. Backups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop and go type traffic flow.	> 1.00

Source: Watson Cogeneration Steam and Electric Reliability Project Team, 2008.
Notes:
> = greater than
LOS = level of service
V/C = volume-to-capacity

Level of service is an indicator of operating conditions on a roadway or an intersection and is defined in categories ranging from A to F. These categories can be viewed much like academic grades, with A representing the best traffic flow conditions and F representing poor conditions. Thus, LOS A indicates free-flowing traffic and LOS F indicates substantial congestion with stop-and-go traffic and long delays at intersections.

5.11.1.4 Peak Hour Intersection Level of Service

This section presents the methodologies used to perform peak hour intersection capacity analysis for both signalized and unsignalized intersections.

The analysis of signalized intersections is based on the analysis procedure outlined in the Los Angeles County CMP. This procedure is known as the Intersection Capacity Utilization methodology and defines LOS in terms of the V/C ratio. This technique uses 1,600 vehicles per hour per lane as the maximum saturation volume of an intersection. The LOS criteria used for this technique were earlier described in Table 5.11-4, LOS Descriptions. The computerized analysis of intersection operations was performed utilizing Traffix 7.5 R1 traffic analysis software (Dowling Associates 2000).

5.11.1.5 Existing Level-of-Service Analysis

The results of the LOS analysis for existing conditions on roadway segments and intersections in the Project study area are presented below. Figure 5.11-3, 2008 Existing Lane Geometry, shows the existing intersection geometrics. Figure 5.11-4, 2008 Existing Traffic Volumes, shows the existing traffic volumes for the key study area intersections. The roadway segment and Project study area intersection traffic counts were collected in 2008. The traffic counts are provided in Appendix T, Traffic Counts.

Existing Roadway Segment Analysis. Table 5.11-5, Roadway Segment LOS – Existing Conditions, displays the directional LOS analysis results for key study area roadway segments under existing conditions. These roadway segments were selected for evaluation because they were determined to be the locations that would most likely be affected by traffic generated during both Project construction and Project operation.

Table 5.11-5
Roadway Segment LOS – Existing Conditions

Roadway	Segment	Average Daily Traffic	A.M. Peak Hour Volume	A.M. Peak Hour V/C Ratio	AM Peak Hour LOS	P.M. Peak Hour Volume	P.M. Peak Hour V/C Ratio	P.M. Peak Hour LOS
405 Freeway	Between Alameda Street and Wilmington Avenue	294,000	6931/7171	30.4/32.2 Density (pc/mi/ln)	D/D	7048/6081 Density (pc/mi/ln)	31.3/25.4	D/C
East 223rd Street	Between Alameda Street and Wilmington Avenue	17,431	622/487	0.41/0.32	A/A	1193/661	0.80/0.44	A/A
Alameda Avenue	Between East 223rd Street and East Sepulveda Boulevard	23,175	754/728	0.34/0.32	A/A	1308/846	0.58/0.38	C/A
Wilmington Avenue	Between East 223rd Street and East Sepulveda Boulevard	20,897	736/644	0.49/0.43	A/A	719/840	0.48/0.56	A/A

Table 5.11-5
Roadway Segment LOS – Existing Conditions

Roadway	Segment	Average Daily Traffic	A.M. Peak Hour Volume	A.M. Peak Hour V/C Ratio	AM Peak Hour LOS	P.M. Peak Hour Volume	P.M. Peak Hour V/C Ratio	P.M. Peak Hour LOS
East Sepulveda Boulevard	Between Alameda Street and Wilmington Avenue	17,671	606/665	0.40/0.44	A/A	688/609	0.46/0.41	A/A

Source: Watson Cogeneration Steam and Electric Reliability Project Team, 2008.
Notes:
A.M. = morning
LOS = level of service
pc/mi/ln = passenger car per mile per lane
P.M. = evening
V/C = volume-to-capacity

As shown in Table 5.11-5, Roadway Segment LOS – Existing Conditions, all study roadway segments are currently operating at an acceptable LOS D or better under existing conditions.

Existing Intersection Analysis. Table 5.11-6, Peak-Hour Intersection LOS – Existing Conditions, displays the intersection LOS and V/C ratio results for the key Project study area intersections using Intersection Capacity Utilization Methodology under existing conditions. The LOS calculation worksheets for existing conditions are provided in Appendix T, Traffic Counts.

Table 5.11-6
Peak-Hour Intersection LOS – Existing Conditions

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	V/C Ratio	LOS	V/C Ratio	LOS
1. 223rd Street/405 Freeway southbound on-/off-ramps	0.47	A	0.49	A
2. 223rd Street/Wilmington Avenue	0.75	C	0.97	E
3. Wilmington Avenue/Sepulveda Boulevard	0.69	B	0.63	B
4. Sepulveda Boulevard/Alameda Street ramp	0.6	A	0.56	A
5. Alameda Street/Sepulveda Boulevard ramp	0.51	A	0.54	A
6. Alameda Street/223rd Street connector	0.46	A	0.59	A
7. Alameda Street/405 Freeway northbound ramp	0.55	A	0.67	B

Source: Watson Cogeneration Steam and Electric Reliability Project Team, 2008.
Notes:
A.M. = morning
LOS = level of service
P.M. = evening
V/C = volume-to-capacity

As shown in Table 5.11-6, Peak-Hour Intersection LOS – Existing Conditions, all study intersections are forecast to operate at LOS C or better with the exception of the intersection of 223rd Street and Wilmington Avenue which is forecast to operate at LOS E during the PM peak hour.

5.11.2 Environmental Consequences

This subsection provides the criteria used to determine if the Project would have the potential to result in significant traffic-related effects within the Project study area.

5.11.2.1 Significance Thresholds

For planning purposes, the threshold LOS goal is LOS D for the City of Carson. The LOS D threshold is consistent with the Los Angeles County CMP.

A project is considered to have an individually significant effect on the operation of an intersection when one of the following occurs.

- The addition of project traffic results in the LOS dropping from acceptable levels (LOS D or better) to unacceptable levels (LOS E or F).
- If an intersection is already at LOS E or F, then the project has a significant effect if the addition of project traffic causes an incremental increase of 0.02 in the V/C ratio.

5.11.2.2 Construction-Related Effects (2011, Peak Project Construction)

The Project construction schedule is 26 months. The average construction workforce will be about 41 workers over this period. However, during month 12 of construction (the peak month), the construction workforce may reach up to 80 workers.

The 2011 No-Project baseline traffic volume projections were developed in consultation with City of Carson staff through the application of an ambient growth factor to existing traffic volume, to account for background traffic growth and traffic generated by pending development projects that would potentially occur by 2011. The 1 percent ambient growth rate used in this study is consistent with the growth assumptions used in recent studies within the City.

During Project construction, small quantities of hazardous materials will be delivered and construction waste products will be hauled from the Project Site. More detailed discussion of Project waste management and the handling of hazardous materials is presented in Section 5.14, Waste Management, and Section 5.15, Hazardous Materials Handling, respectively. All applicable laws, ordinances, and regulations (LORS) will be observed during Project construction.

5.11.2.3 Operation-Related Effects (2012, Project Operation)

On completion of Project construction and its commissioning, the Project will generate operation-related trips, which will be substantially less than the trips associated with the peak construction activities. As discussed in Section 3.0, Project Description and Location, no additional manpower will be needed to operate the Project.

The current workforce associated with the Watson Cogeneration Facility will oversee the operation and maintenance of the Project. Occasional deliveries and maintenance-related trips are anticipated as part of normal Project operation.

During Project operation, small quantities of hazardous materials will be delivered and operational waste products will be hauled from the Project Site. More detailed discussion of

Project waste management and the handling of hazardous materials is presented in Section 5.14, Waste Management, and Section 5.15, Hazardous Materials Handling, respectively. All applicable LORS will be observed during Project operation.

5.11.2.4 Project Construction Workforce Distribution

It is assumed that the majority of the Project construction workforce will be met with local labor, and most likely sourced from areas within Los Angeles and adjoining counties.

5.11.2.5 Project Trip Generation

Peak Project Construction Trip Generation

For the purposes of this analysis, month 12 of the 26-month Project construction schedule was used to conduct the construction traffic effect analysis for the Project. This assumption presents the worst-case scenario and the most conservative estimate of Project construction traffic.

Typically, construction work starts before the 7:00 a.m. to 9:00 a.m. peak-hour traffic and ends before the 4:00 p.m. to 6:00 p.m. peak-hour traffic on the streets adjacent to the Project Site. However, for the purposes of the traffic effect analysis, it was conservatively assumed that the Project construction workers would commute to work within the 7:00 a.m. to 9:00 a.m. and from work within the 4:00 p.m. to 6:00 p.m. peak hours. Also, it was assumed that all construction workers would commute alone to work.

In addition to the construction workforce trips, construction equipment deliveries and construction-related truck traffic will contribute additional trips during Project construction. Truck and heavy equipment traffic were estimated using a passenger car equivalent factor of three cars per truck.

Table 5.11-7, Peak Project Construction Trip Generation, presents the peak Project construction trip generation estimates for the Project.

Table 5.11-7
Peak Project Construction Trip Generation

	Daily Trips	A.M. Peak-Hour Trips		P.M. Peak-Hour Trips	
		In	Out	In	Out
Construction worker vehicles[1]	160	80	0	0	80
Construction worker buses[2]	36	9	9	9	9
Delivery vehicles (truck/van)[3]	42	21	0	0	21
Delivery vehicles (heavy truck)[3]	42	21	0	0	21
Total trips	**280**	**131**	**9**	**9**	**131**

Source: Watson Cogeneration Steam and Electric Reliability Project Team, 2008.
Notes:
[1] Peak workforce was conservatively analyzed at 80 worker trips driving alone. During the peak hours of the peak month of construction, 100 percent of workers are projected to commute during the morning and evening peak hours.
[2] Three buses are assumed to transport workers from off-site parking to the Project Site, and this value is adjusted into Passenger Car Equivalent (1 bus = 3 PCE) vehicles in the traffic effects analysis.
[3] Delivery vehicles were adjusted into Passenger Car Equivalent (1 heavy vehicle = 3 PCE) vehicles in the traffic effects analysis. Peak construction delivery trips were conservatively analyzed. During the peak month of construction, 100 percent of delivery trucks are projected to commute during the morning and evening peak hours.
A.M. = morning
P.M. = evening
PCE = passenger car equivalent

As shown in Table 5.11-7, Peak Project Construction Trip Generation, during the peak month of Project construction, it is conservatively estimated that approximately 280 daily trips and 131 a.m. peak-hour and 131 p.m. peak-hour trips will occur to access the off-site construction laydown, staging, and parking area, as well as the vehicle movement within the Project Site. These trips represent the most conservative and worst-case scenario for the peak Project construction traffic analysis.

Project Operation Trip Generation

No additional manpower will be needed for Project operation. The current workforce at the Watson Cogeneration Facility will operate the Project without the addition of new staff.

5.11.2.6 Effect Analysis for 2011 Conditions

This section describes 2011 traffic conditions “with” and “without” peak Project construction. The scenarios listed below were analyzed for 2011 conditions.

- No-Project Conditions
- Peak Project Construction Conditions

No-Project Conditions (2011)

Consistent with the City of Carson Traffic Impact Analysis Guidelines, the 2011 No-Project Conditions serve as the baseline conditions in the evaluation of Project construction traffic effects. The 2011 No-Project Conditions baseline traffic volume projections were developed through the application of an ambient growth factor to existing traffic volume to account for

background traffic growth and traffic generated by pending development projects that could potentially occur by 2011.

By 2011, the following cumulative projects are assumed to be completed and any applicable roadway and intersection improvements have been incorporated in the 2011 baseline conditions.

1. The 405 Freeway at Wilmington Avenue Improvement Project (directly north of the Project Site).
2. East 223rd Street ("Auto Row") Capital Improvement Project (directly north of the Project Site).

Figure 5.11-5, 2011 Lane Geometry, shows the 2011 lane configurations incorporating improvements at the intersection of Wilmington Avenue and 223rd Street. Figure 5.11-6, 2011 No-Project Volumes, shows peak-hour traffic volumes at the Project study intersections.

No-Project Roadway Segment Analysis (2011)

Table 5.11-8, Roadway Segment LOS – No-Project Conditions (2011), summarizes the results of the 2011 No-Project Conditions roadway segment analysis. The directional roadway segment LOS calculation worksheets are provided in Appendix T, Traffic Counts.

Table 5.11-8
Roadway Segment LOS – No-Project Conditions (2011)

Roadway	Segment	Average Daily Traffic	A.M. Peak Hour	A.M. Peak Hour V/C Ratio	A.M. Peak Hour LOS	P.M. Peak Hour	P.M. Peak Hour V/C Ratio	P.M. Peak Hour LOS
405 Freeway	Between Alameda Street and Wilmington Avenue	302,820	7140/7386	31.9/33.9 Density (pc/mi/ln)	D/D	7260/6263 Density (pc/mi/ln)	32.8/26.4	D/D
East 223rd Street	Between Alameda Street and Wilmington Avenue	17,955	641/502	0.43/0.33	A/A	1229/681	0.82/0.45	D/A
Alameda Avenue	Between 223rd Street and Sepulveda Boulevard	23,870	777/750	0.35/0.33	A/A	1347/871	0.60/0.39	A/A
Wilmington Avenue	Between 223rd Street and Sepulveda Boulevard	21,525	758/663	0.51/0.44	A/A	741/865	0.49/0.58	A/A

Table 5.11-8
Roadway Segment LOS – No-Project Conditions (2011)

Roadway	Segment	Average Daily Traffic	A.M. Peak Hour	A.M. Peak Hour V/C Ratio	A.M. Peak Hour LOS	P.M. Peak Hour	P.M. Peak Hour V/C Ratio	P.M. Peak Hour LOS
East Sepulveda Boulevard	Between Alameda Street and Wilmington Avenue	18,200	624/685	0.42/0.46	A/A	709/627	0.47/0.42	A/A

Source: Watson Cogeneration Steam and Electric Reliability Project Team, 2008.
Notes:
A.M. = morning
LOS = level of service
P.M. = evening
pc/mi/ln = passenger car per mile per lane
V/C = volume-to-capacity

As shown in Table 5.11-8, Roadway Segment LOS – No-Project Conditions (2011), all of the study roadway segments are forecast to operate at an acceptable LOS D or better under 2011 No-Project Conditions.

No-Project Intersection Analysis (2011)

Table 5.11-9, Peak-Hour Intersection LOS – No-Project Conditions (2011), displays the intersection LOS and V/C ratios under 2011 Peak No-Project Conditions. The intersection LOS calculation worksheets are provided in Appendix T, Traffic Counts.

Table 5.11-9
Peak-Hour Intersection LOS – No-Project Conditions (2011)

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	V/C Ratio	LOS	V/C Ratio	LOS
1. 223rd Street/405 Freeway southbound on-/off-ramps	0.46	A	0.5	A
2. 223rd Street/Wilmington Avenue	0.67	B	0.91	E
3. Wilmington Avenue/Sepulveda Boulevard	0.65	B	0.64	B
4. Sepulveda Boulevard/Alameda Street ramp	0.56	A	0.57	A
5. Alameda Street/Sepulveda Boulevard ramp	0.51	A	0.56	A
6. Alameda Street/223rd Street connector	0.42	A	0.61	B
7. Alameda Street/405 Freeway northbound ramp	0.55	A	0.69	B

Source: Watson Cogeneration Steam and Electric Reliability Project Team, 2008.
Notes:
A.M. = morning
LOS = level of service
P.M. = evening
V/C = volume-to-capacity

As shown in Table 5.11-9, Peak-Hour Intersection LOS – No-Project Conditions (2011), all study intersections are forecast to operate at LOS B or better with the exception of the intersection of 223rd Street and Wilmington Avenue, which is forecast to operate at LOS E during the p.m. peak hours.

Peak Project Construction Conditions (2011)

This scenario considers 2011 No-Project Conditions traffic volumes plus peak Project construction activity trip generation. Figure 5.11-7, 2011 No-Project Plus Project Construction Traffic Volumes, shows 2011 Peak Project Construction Conditions peak-hour traffic volumes at the Project study intersections.

Peak Project Construction Roadway Segment Analysis (2011)

Table 5.11-10, Roadway Segment LOS – Peak Project Construction Conditions (2011), displays the directional LOS analysis results for the study area roadway segments for 2011 with Peak Project Construction Conditions.

Table 5.11-10
Roadway Segment LOS – Peak
Project Construction Conditions (2011)

Roadway	Segment	Average Daily Traffic	A.M. Peak Hour	A.M. Peak Hour V/C Ratios	A.M. Peak Hour LOS	P.M. Peak Hour	P.M. Peak Hour V/C Ratios	PM Peak Hour LOS
405 Freeway	Between Alameda Street and Wilmington Avenue	302,920	7157/7418	32.1/34.1 Density (pc/mi/ln)	D/D	7292/6280	33.1/26.5 Density (pc/mi/ln)	D/D
223rd Street	Between Alameda Street and Wilmington Avenue	17,970	645/505	0.43/0.34	A/A	1232/685	0.82/0.46	D/A
Alameda Avenue	Between 223rd Street and Sepulveda Boulevard	24,015	793/823	0.35/0.37	A/A	1420/887	0.63/0.39	B/A
Wilmington Avenue	Between 223rd Street and Sepulveda Boulevard	21,610	770/674	0.51/0.45	A/A	752/877	0.50/0.58	A/A
East Sepulveda Boulevard	Between Alameda Street and Wilmington Avenue	18,250	637/695	0.42/0.46	A/A	719/640	0.48/0.43	A/A

Source: Watson Cogeneration Steam and Electric Reliability Project Team, 2008.
Notes:
A.M. = morning
LOS = level of service
P.M. = evening
pc/mi/ln = passenger car per mile per lane
V/C = volume-to-capacity

As shown in Table 5.11-10, Roadway Segment LOS – Peak Project Construction Conditions (2011), all of the study roadway segments are forecast to operate at an acceptable LOS D or better under 2011 Peak Project Construction Conditions. The directional roadway segment LOS calculation worksheets are provided in Appendix T, Traffic Counts.

Peak Project Construction Intersection Analysis (2011)

Table 5.11-11, Peak-Hour Intersection LOS – Peak Project Construction Conditions (2011), displays the intersection LOS and V/C ratio results under for 2011 with Peak Project Construction Conditions. The intersection LOS calculation worksheets are provided in Appendix T, Traffic Counts.

Table 5.11-11
Peak-Hour Intersection LOS – Peak Project Construction Conditions (2011)

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	V/C Ratio	LOS	V/C Ratio	LOS
1. 223rd Street/405 Freeway southbound on-/off-ramps	0.48	A	0.51	A
2. 223rd Street/Wilmington Avenue	0.67	B	0.93	E
3. Wilmington Avenue/Sepulveda Boulevard	0.66	B	0.65	B
4. Sepulveda Boulevard/Alameda Street ramp	0.57	A	0.58	A
5. Alameda Street/Sepulveda Boulevard ramp	0.52	A	0.57	A
6. Alameda Street/223rd Street connector	0.45	A	0.62	B
7. Alameda Street/405 Freeway northbound ramp	0.57	A	0.69	B

Source: Watson Cogeneration Steam and Electric Reliability Project Team, 2008.
Notes:
A.M. = morning
LOS = level of service
P.M. = evening
V/C = volume-to-capacity

As shown in Table 5.11-11, Peak-Hour Intersection LOS – Peak Project Construction Conditions (2011), all study intersections are forecast to operate at LOS B or better with the exception of the intersection of 223rd Street and Wilmington Avenue, which is forecast to operate at LOS E during the p.m. peak hour.

Traffic Effects Summary for 2011 Conditions

A comparison of the results of the traffic analysis for 2011 conditions with the City of Carson's criteria of significance for traffic effects indicates that no Project study area roadway segments or intersections would be significantly effected during the peak Project construction activity in 2011.

5.11.2.7 Effects Analysis for 2012 Conditions

As discussed in Section 3.0, Project Description, no additional manpower will be needed for Project operation. The current workforce for the Watson Cogeneration Facility will operate the Project without addition of new staff. No further analysis of traffic effects from Project operation is warranted because Project operation will not change the number of worker trips.

Traffic Effects Summary for 2012 Conditions

No significant traffic effects are anticipated as a result of Project operation.

5.11.3 Cumulative Effects

Based on information provided by City of Carson staff, the Project's construction and operational traffic would not coincide with any potential future development project (i.e., large scale industrial, commercial or office uses) within the Project study area, so its contribution to cumulative traffic effects during construction would not be cumulatively considerable, and cumulative effects of the Project would therefore be less than significant.

The two capital improvement projects described in Section 5.11.2.6, Effect Analysis for 2011 Conditions, will not contribute to any new or long term cumulative traffic effects, but rather, will improve the roadway and operational performance of the improved and upgraded roadway and intersection facilities.

Additional nearby projects are described in Section 5.9 Land Use. Most of the developments described in this section are either short-term or expansion projects that would generate minimal trips during operations. The intermodal container facility expansion (Number 2 in Section 5.9) will increase truck traffic.

The results of the traffic analysis for this Project showed that the Project's construction and operational traffic combined with future ambient traffic growth only, would not be cumulatively considerable, and cumulative effects of the Project would therefore be less than significant.

Based on the above findings, it is anticipated that the Project will not result in cumulative construction and operational Project effects.

5.11.4 Mitigation Measures (Project Construction)

The results of the Project construction traffic analysis showed that no study intersection will be significantly affected during peak Project construction activities in 2011.

Watson Cogeneration Company (Applicant) will provide, where warranted and required, the following mitigations either as part of the construction activity requirements, or as proactive measures to minimize construction-related trip making and the resultant increases in traffic in the surrounding roadway circulation system. Some proposed mitigation measures may require monitoring to maintain their effectiveness.

TRA-1: Construction Traffic Route

During Project construction, the Applicant will designate a construction worker, equipment, and material delivery/haul route from their points of origin to Alameda Avenue and toward the off-site Construction Laydown and Parking Area. Construction workers will be shuttled to and from the off-site parking area to the Project Site. Construction materials and equipment will be transported as needed from the Construction Laydown and Parking Area to minimize crowding and traffic at the Project Site.

TRA-2: Traffic Control Plan

If required, the Applicant will prepare a traffic and transportation control plan in coordination with the City of Carson and the California Department of Transportation (Caltrans) to address potential short-term construction traffic activities on city or state rights-of-way (ROW). The

Applicant will secure all required permits needed for work on city and state roadways and intersections before the start of Project construction.

5.11.5 Mitigation Measures (Project Operation)

Project operation will not have any effects on traffic or transportation. Therefore, no mitigation measures are proposed.

5.11.6 Applicable Laws, Ordinances, Regulations, and Standards

The Project will comply with all applicable traffic and transportation LORS, as discussed below. Table 5.11-12, Summary of LORS – Traffic/Transportation, summarizes the applicable LORS, and Table 5.11-13, Agency Contact List for LORS, lists the agency contacts.

Table 5.11-12
Summary of LORS – Traffic/Transportation

LORS	Applicability	Administering Agency	Conformance (AFC Section)
Federal			
Title 49 Code of Federal Regulations, Sections 171–177	Governs the transportation of hazardous materials, including the marking of transportation vehicles.	California Highway Patrol	5.11.6.1
Title 14 Code of Federal Regulations, Section 77.13(2)(i)	Requires Applicant to notify FAA of any construction greater than height limits defined by the FAA.	Federal Aviation Administration	5.11.6.1
State			
California Vehicle Code Section 353	Defines hazardous materials.	California Highway Patrol	5.11.6.2
California Vehicle Code Section 13369, 15275, 15278	Addresses the licensing of drivers and the classification of license required for the operation of particular types of vehicles. These sections also require the possession of certificates permitting the operation of vehicles transporting hazardous materials.	California Department of Motor Vehicles	5.11.6.2
California Vehicle Code Section 31303–31309	Requires transporters of hazardous materials to use the shortest route possible.	California Highway Patrol	5.11.6.2
California Vehicle Code Section 32000–32053	Regulates the licensing of carriers of hazardous materials and noticing requirements.	California Highway Patrol	5.11.6.2
California Vehicle Code Section 32100–32109	Transporters of inhalation hazardous materials or explosive materials must obtain a hazardous materials transportation license.	California Highway Patrol	5.11.6.2
California Vehicle Code Section 34000–34100	Establishes special requirements for transport of flammable and combustible liquids over public roads and highways.	California Highway Patrol	5.11.6.2
California Vehicle Code Section 34500	Regulates the safe operation of vehicles, including those that are used for the transportation of hazardous materials.	California Highway Patrol	5.11.6.2
California Vehicle Code Section 35550	Imposes weight guidelines and restrictions on vehicles traveling on freeways and highways.	California Department of Transportation	5.11.6.2
California Vehicle Code Section 35780	Requires approval for a permit to transport oversized or excessive load over state highways.	California Department of Transportation	5.11.6.2

Table 5.11-12
Summary of LORS – Traffic/Transportation

LORS	Applicability	Administering Agency	Conformance (AFC Section)
California Streets and Highways Code Section 117	Permits for the location in the ROW of any structures or fixtures necessary to telegraph or telephone, or for electric power lines or any ditches, pipes, drains, sewers, or underground structures.	California Department of Transportation	5.11.6.2
California Streets and Highways Code Sections 660, 670, 672, 1450, 1460, 1470, 1480 *et seq*.	Defines highways and encroachment. Regulates ROW encroachment and the granting of permits with conditions for encroachment of state and city roads.	California Department of Transportation and City of Carson	5.11.6.2
California Health and Safety Code, Section 25160 *et seq*.	Addresses the safe transport of hazardous materials.	California Highway Patrol	5.11.6.2
California Department of Transportation Traffic Manual, Section 5-1.1	Requires traffic control plans to ensure continuity of traffic during roadway construction.	City of Carson	5.11.6.2
Local			
City of Carson Traffic Code, Part 6	Compliance to city parking regulations	City of Carson	5.11.6.3
City of Carson Traffic Code, Part 7	Compliance to city truck regulations	City of Carson	5.11.6.3
City of Carson Traffic Code, Part 8	Compliance to city hazardous materials movement regulations	City of Carson	5.11.6.3

Source: Watson Cogeneration Steam and Electric Reliability Project Team, 2008.
Notes:
FAA = Federal Aviation Administration
LORS = laws, ordinances, regulations, and standards
ROW = right-of-way

Table 5.11-13
Agency Contact List for LORS

Agency	Contact	Address	Telephone
Federal Aviation Administration	Karen McDonald	Western Pacific Region AWP5202 15000 Aviation Boulevard Lawndale, CA 90261-1002	310-725-6557
CHP South Los Angeles (530)	Sgt. Joe Riordan	19700 Hamilton Avenue Torrance, CA 90502	310-516-3355
California Department of Transportation District 8	Moe Bhuyian, MS, PE Regional Manager Southern Region Transportation Permits	464 West 4th Street MS 618 San Bernardino, CA 92401	909-553 8402
California Department of Transportation District 8	Public Inquiry Department of Motor Vehicles, Licensing Operations Division	2415 1st Avenue Mail Station F101 Sacramento, CA 95818	916-657-8698
City of Carson Engineering Division	Richard Garland, P.E. City Traffic Engineer	701 East Carson Street Carson, CA 90745	310-952-1700 ext. 1815

Source: LACOFD, Health Hazardous Materials Division, 2008.
Notes:
CHP = California Highway Patrol `
LORS = laws, ordinances, regulations, and standards

5.11.6.1 Federal Authorities and Administering Agencies

Title 49, Code of Federal Regulations, Parts 171–177

This authority governs the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles.

The administering agencies for this regulation are the California Highway Patrol (CHP) and the Department of Transportation, Pipeline and Hazardous Materials Safety Administration.

The Applicant will conform to this law by requiring that shippers of hazardous materials use the required markings on their transportation vehicles.

Title 14, Code of Federal Regulations, Part 77.13(2)(i)

This authority requires an Applicant to notify the Federal Aviation Administration (FAA) of the construction of structures with a height greater than 200 feet from grade or greater than an imaginary surface extending outward and upward at a slope of 10 to 1 from the nearest point of the nearest runway of an airport with at least one runway more than 3,200 feet in length.

The administering agency for this regulation is the FAA.

The Project heights will not exceed 200 feet. Therefore, the FAA will not need to be notified.

5.11.6.2 State Authorities and Administering Agencies

California Vehicle Code, Section 353

This authority defines hazardous materials as any substance, material, or device posing an unreasonable risk to health, safety, or property during transportation, as defined by regulations adopted pursuant to Section 2402.7. "Hazardous material" includes explosives and hazardous wastes or substances as defined by regulations adopted pursuant to Section 25141 of the Health and Safety Code and medical wastes, as defined in Section 117690 of the Health and Safety Code.

The administering agency for this statute is the CHP.

The Applicant will comply with this law by identifying all hazardous materials that will be used or generated on-site.

California Vehicle Code, Sections 2500–2505

This authority authorizes the Commissioner of the CHP to issue licenses for the transportation of hazardous materials, including explosives.

The administering agency for this law is the CHP.

The Applicant will comply with this statute by requiring that contractors and employees be properly licensed and endorsed when operating vehicles used to transport hazardous materials.

California Vehicle Code, Sections 13369, 15275, 15278

This authority addresses the licensing of drivers and the classification of the licenses required to operate particular types of vehicles. This law requires a commercial driver's license to operate commercial vehicles. It also requires an endorsement issued by the Department of Motor Vehicles to drive any commercial vehicle identified in Section 15278.

The administering agency for this law is the Department of Motor Vehicles.

The Applicant will comply with this statute by requiring that contractors and employees be properly licensed and endorsed when operating such vehicles.

California Vehicle Code, Sections 31303–31309

This authority requires that hazardous materials be transported on the state or interstate highway that offers the shortest overall transit time possible.

The administering agency for this statute is the CHP.

The Applicant will comply with this law by requiring that shippers of hazardous materials use the shortest route possible in traveling to and from the Project Site.

California Vehicle Code, Sections 31600–31620

This authority regulates the transportation of explosive materials.

The administering agency for this statute is the CHP.

The Applicant will not use any of the explosive materials specifically defined in Section 12000 of the Health and Safety Code. However, the Applicant will comply with this law by requiring that shippers of other potentially explosive materials have the required licenses from the CHP.

California Vehicle Code, Sections 32000–32053

This authority authorizes the CHP to inspect and license motor carriers transporting hazardous materials of the type requiring placards.

The administering agency for this statute is the CHP.

The Applicant will comply with this law by requiring that motor carriers of hazardous materials be properly licensed by the CHP.

California Vehicle Code, Sections 32100–32109

This authority requires that shippers of inhalation hazards in bulk packaging comply with rigorous equipment standards, inspection requirements, and route restrictions.

The administering agency for this statute is the CHP.

If applicable, the Applicant will comply with this law by requiring shippers of these types of materials to comply with all route restrictions, equipment standards, and inspection requirements.

California Vehicle Code, Sections 34000–34100

This authority establishes special requirements for vehicles having a cargo tank and for hazardous waste transport vehicles and containers, as defined in Section 25167.4 of the Health and Safety Code. The CHP commissioner shall provide for the establishment, operation, and enforcement of random on- and off-highway inspections of cargo tanks and hazardous waste transport vehicles and containers and ensure that they are designed, constructed, and maintained in accordance with the regulations adopted by the commissioner pursuant to this code and Chapter 6.5 (commencing with Section 25100) of Division 20 of the Health and Safety Code.

The administering agency for this regulation is the CHP.

The Applicant will comply with this law by requiring that shippers of hazardous materials maintain their hazardous material transport vehicles in a manner that ensures that the vehicles will pass CHP inspections.

California Vehicle Code, Section 3500

This authority regulates the safe operation of vehicles, including those vehicles that are used for the transportation of hazardous materials.

The administering agency for this statute is the CHP.

The Applicant will comply with this law by requiring that shippers of hazardous materials have the necessary permits, inspections, and licenses issued by the CHP for the safe operation of the vehicles used for hazardous materials transport.

California Vehicle Code, Section 35550

This authority imposes weight guidelines and restrictions on vehicles traveling on freeways and highways. This law holds that "a single axle load shall not exceed 20,000 pounds. The load on any one wheel or wheels supporting one end of an axle is limited to 10,500 pounds. The front steering axle load is limited to 12,500 pounds." Furthermore, California Vehicle Code, Section 35551, defines the maximum overall gross weight as 80,000 pounds and adds that "the gross weight of each set of tandem axles shall not exceed 34,000 pounds."

The administering agency for this statute is Caltrans.

The Applicant will comply with this statute by requiring compliance with weight restrictions and by requiring heavy haulers to obtain permits, if required, before delivery of any heavy haul load.

California Vehicle Code, Section 35780

This authority requires a Single-Trip Transportation Permit to transport oversized or excessive loads over state highways. The permit is acquired from Caltrans.

The administering agency for this statute is Caltrans.

The Applicant will comply with this code by requiring that heavy haulers obtain a Single-Trip Transportation Permit for oversized loads for each vehicle before delivery of any oversized load.

California Streets and Highways Code, Section 117

Unless otherwise specifically provided in the instrument conveying title, the acquisition by the department of any ROW over any real property for state highway purposes includes the right of the department to issue, under Chapter 3 (commencing with Section 660), permits for the location in the ROW of any structures or fixtures necessary to telegraph, telephone, or electric power lines or of any ditches, pipes, drains, sewers, or underground structures.

The administering agency for this statute is Caltrans.

If applicable, the Applicant will comply with this code by acquiring the necessary permits and approval from Caltrans with regard to use of public ROWs.

California Streets and Highways Code, Sections 660, 670, 672, 1450, 1460, 1470, 1480 et seq.

This authority defines highways and encroachment and requires encroachment permits for projects involving excavation in state highways and city or county streets. This law is generally enforced at the local level.

The administering agency for this statute is Caltrans.

The Applicant will apply for encroachment permits for any excavation in state or county roadways before construction.

California Health and Safety Code, Section 25160 et seq.

This authority addresses the safe transport of hazardous wastes, requires a manifest for hazardous waste shipments, and requires a person who transports hazardous waste in a vehicle to have a

valid registration issued by the Department of Toxic Substances Control (DTSC) in his or her possession while transporting the hazardous waste.

The administering agency for this statute is the DTSC.

The Applicant will comply with this law by requiring that shippers of hazardous wastes be properly licensed by the DTSC and that hazardous waste transport vehicles be in compliance with DTSC requirements.

California Department of Transportation Traffic Manual, Section 5-1.1

This authority requires that a temporary traffic control plan be provided for "continuity of function (movement of traffic, pedestrians, bicyclists, transit operations), and access to property/utilities" during any time that the normal function of a roadway is suspended.

The administering agencies for this regulation are Caltrans and City of Carson Development Services Department.

The Applicant will comply with this law by filing a traffic control plan before the start of Project construction.

5.11.6.3 Local Authorities and Administering Agencies

City of Carson Municipal Code, Chapter 2 (Traffic Code), Part 6. Parking Regulations

Provides definitions, regulations and guidance on parking within the city limits.

The administering agency for this code is the City of Carson Development Services Department.

The Applicant will comply with this code by following the regulations and guidance on parking within the city.

City of Carson Municipal Code, Chapter 2 (Traffic Code), Part 7. Truck Regulations

Provides definitions, regulations and guidance to truck movement and operations within city limits.

The administering agency for this code is the City of Carson Development Services Department.

The Applicant will comply with this code by following the regulations and guidance to truck movements on city roadways.

City of Carson Municipal Code, Chapter 2 (Traffic Code), Part 8. Hazardous Materials

Provides guidance and restrictions on the transportation of hazardous materials within city limits

The administering agency for this code is the City of Carson Development Services Department.

The Applicant will comply with this code by following the regulations and guidance on the movement and transportation of potentially hazardous materials during the construction and operations of the project.

5.11.6.4 Permits Required and Permitting Schedule

The following permits may be required during the construction and operation of the Project.

- Encroachment permits will be required when working within city and state ROWs.
- Transportation permits will be required when transporting oversize, heavy and extra-legal loads on city roadways and state highways.

Table 5.11-14
Applicable Permits

Responsible Agency	Permit/Approval	Schedule
City of Carson Development Services Department[1]	Encroachment Permit	As Needed
City of Carson Development Services Department[1]	Transportation Permit	As Needed
California Department of Transportation[2]	Encroachment Permit	As Needed
California Department of Transportation[2]	Transportation Permit	As Needed

Source: Watson Cogeneration Steam and Electric Reliability Project Team, 2008.
Notes:
[1]Local Streets
[2]State Highways

5.11.7 References

CHP (California Highway Patrol). 2008. Telephone conversation with Sgt. Joe Riordan, CHP South Los Angeles Administrative Sergeant, 310-516-3355.

Caltrans (California Department of Transportation), District 7. 2008. *2007 Truck Volumes*.

Caltrans (California Department of Transportation). 2008. *2007 Traffic Volumes*.

Carson Circuit Transit System Overview Map. 2008. *http://ci.carson.ca.us/citydepartments/DevServ/transportation/BusOverviewMap.htm*

City of Carson. 2006. City of Carson General Plan Transportation and Infrastructure Element.

City of Carson. 2008. City of Carson Municipal Code.

City of Carson Traffic Engineering. 2008. Telephone conversation and e-mail correspondence with Mr. Richard Garland, P.E., City Traffic Engineer, 310-830-7600 ext. 1815.

City of Carson Planning Department. 2008. Telephone conversation with Mr. John Signo, AICP, Senior Planner, 310-830-7600 ext. 1327.

City of Carson Development Services Department. 2008. Telephone conversation with Mr. Farrokh Abolfathi, P.E., Principal Engineer, 310-830-7600.

CFR (Code of Federal Regulations). 2008. Title 14 Aeronautics and Space, Federal Aviation Administration.

CFR (Code of Federal Regulations). 2008. Title 49 Environment, Subtitle B–Other Regulations Relating to Transportation.

Dowling Associates. 2000. *Traffix Version 7.6R1*.

Los Angeles County. 2004. Congestion Management Program.

McTrans Center, University of Florida. 2000. Highway Capacity Software. Version 4.1a.

National Data and Surveying Services. 2008. Traffic counts collected in June 2008.

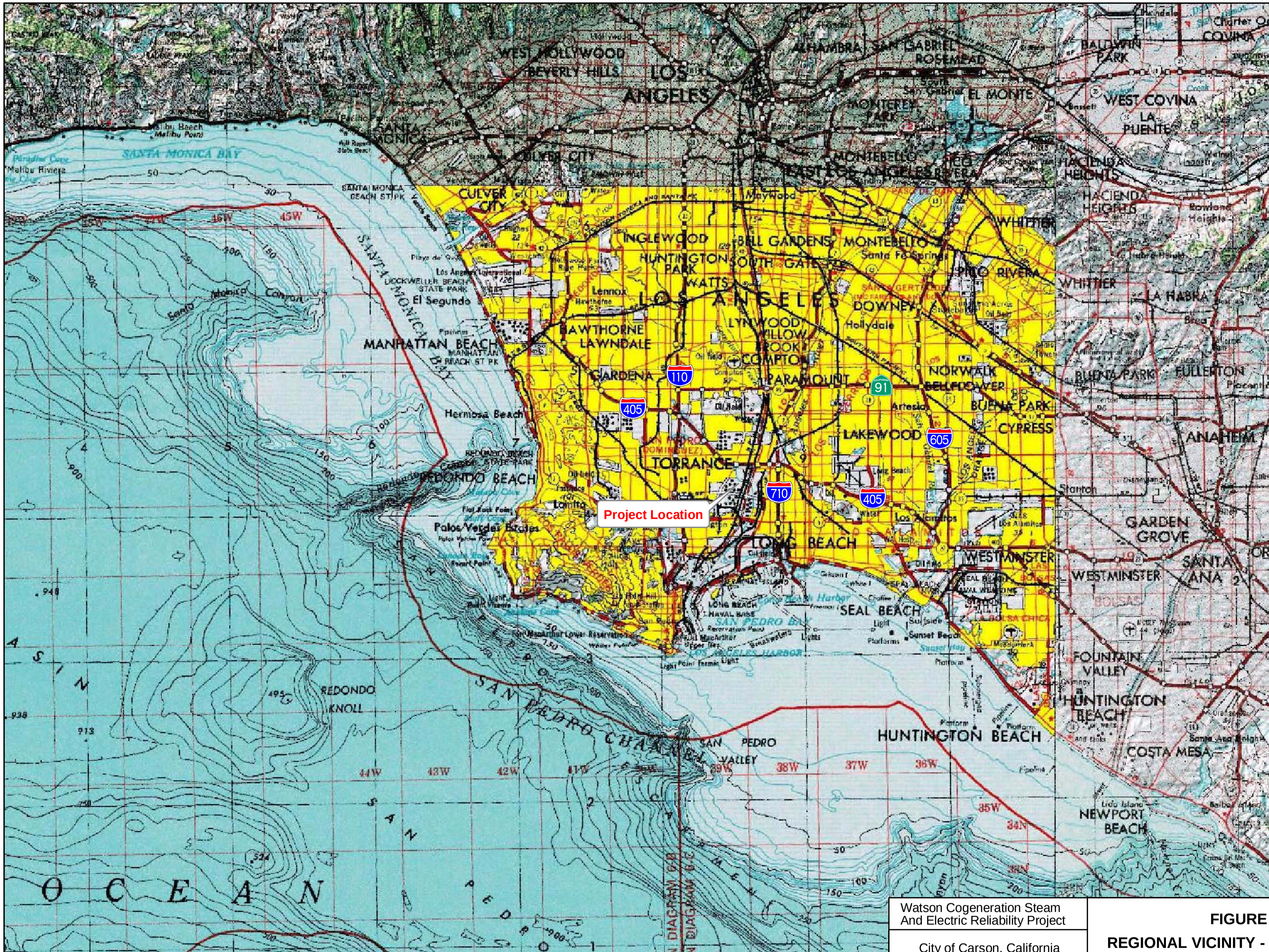
National Data and Surveying Services. 2008. 24-hour ADT and Peak Hour Intersection Traffic Counts.

Southern California Association of Governments. 2008. *2008 Regional Transportation Plan.*

State of California. 2008. Vehicle Code.

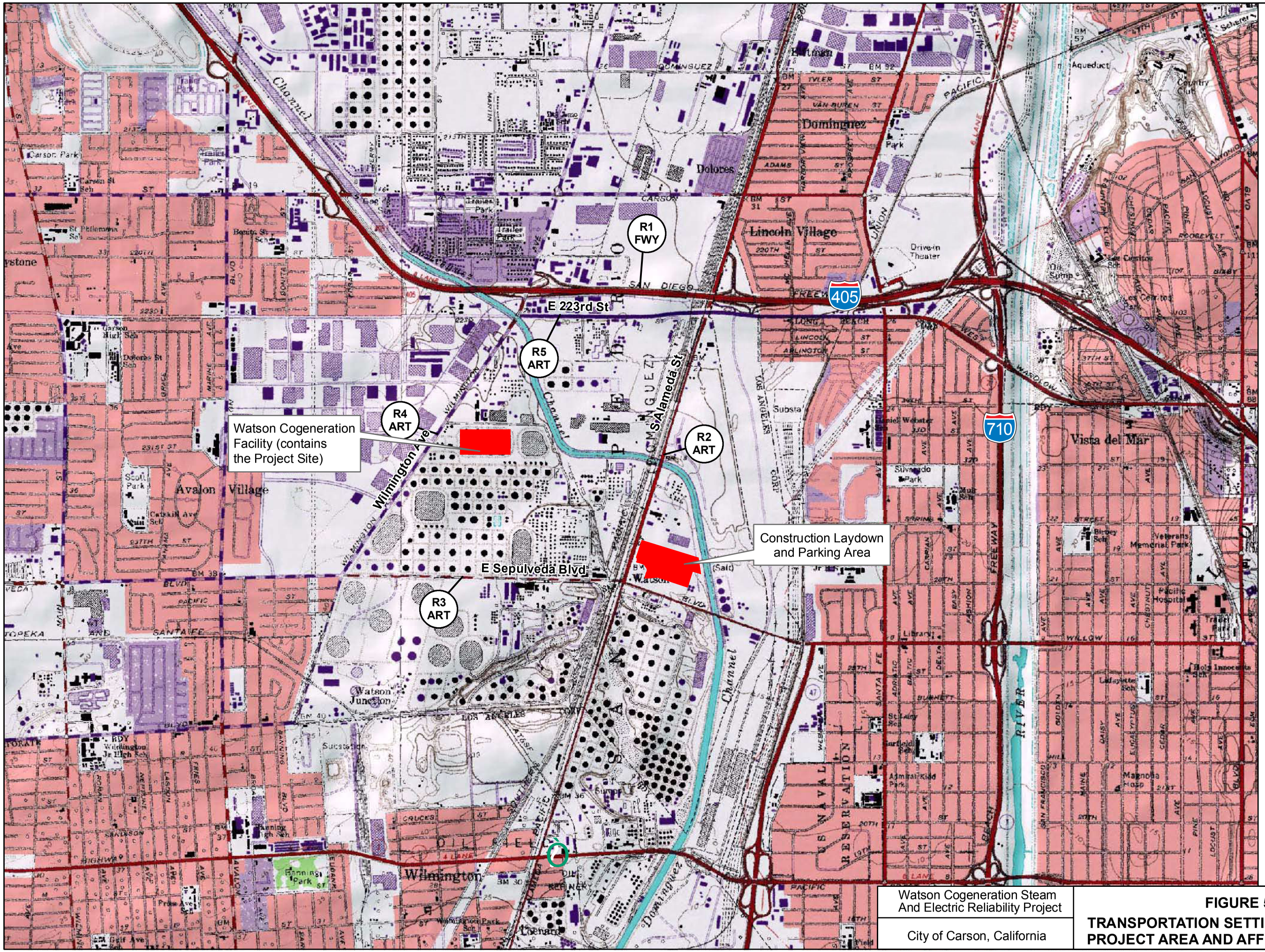
State of California. 2008. Streets and Highways Code.

Transportation Research Board. 2000. *Highway Capacity Manual.*



Watson Cogeneration Steam And Electric Reliability Project	**FIGURE 5.11-1**	July 2008
City of Carson, California	**REGIONAL VICINITY - TRANSPORTATION**	22239068

I:\Carson_Cogen\mxd\Fig_5_11_1_Carson_Cogen_regional_vicinity



R1 FWY	I-405: Interstate Freeway facility located north of the project site. AADT is 294,000 vehicles per day. Peak hour is 20,355 vehicles per hour. Trucks = 6%
R2 ART	S Alameda St: Major Arterial facility located east of the project site. AADT is 23,175 vehicles per day. Peack-hour is 2,154 vehicles per hour. Trucks = 10%
R3 ART	E Sepulveda Blvd: Major Arterial facility located south of the project site. AADT is 17,671 vehicles per day. Peack-hour is 1,297 vehicles per hour. Trucks = 10%
R4 ART	Wilmington Ave: Major Arterial facility located north of the project site. AADT is 20,897 vehicles per day. Peack-hour is 1,559 vehicles per hour. Trucks = 10%
R5 ART	E 223rd St: Major Arterial facility located north of the project site. AADT is 17,431 vehicles per day. Peack-hour is 1,854 vehicles per hour. Trucks = 10%

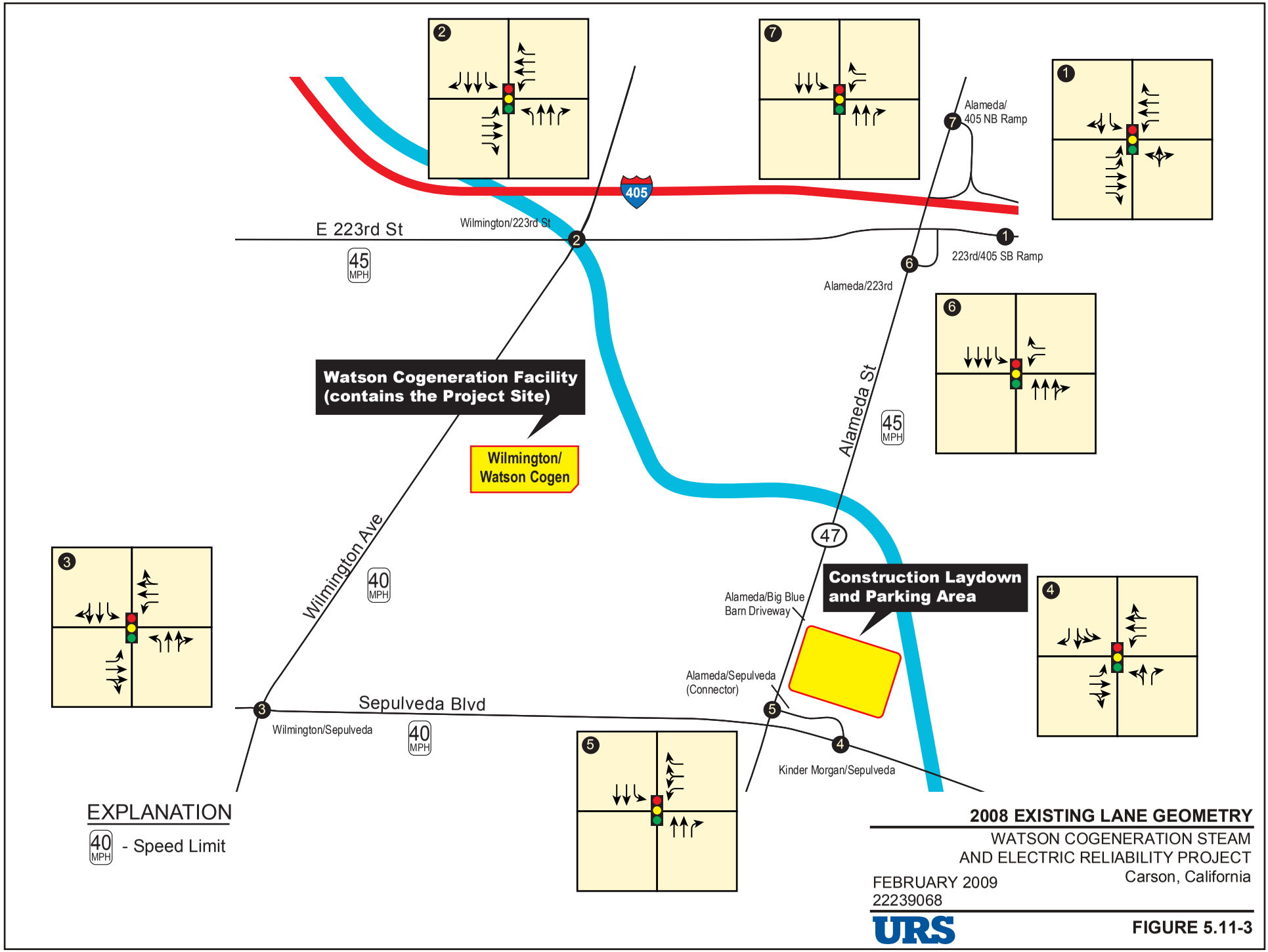
N

0 1,000 2,000 Feet

Scale 1:24,000

Watson Cogeneration Steam And Electric Reliability Project	**FIGURE 5.11-2**	July 2008
City of Carson, California	**TRANSPORTATION SETTING OF THE LOCAL PROJECT AREA AND AFFECTED ROADWAYS**	22239068

I:\Carson_Cogen\mxd\Fig_5_11_2_Carson_Cogen



2008 EXISTING LANE GEOMETRY

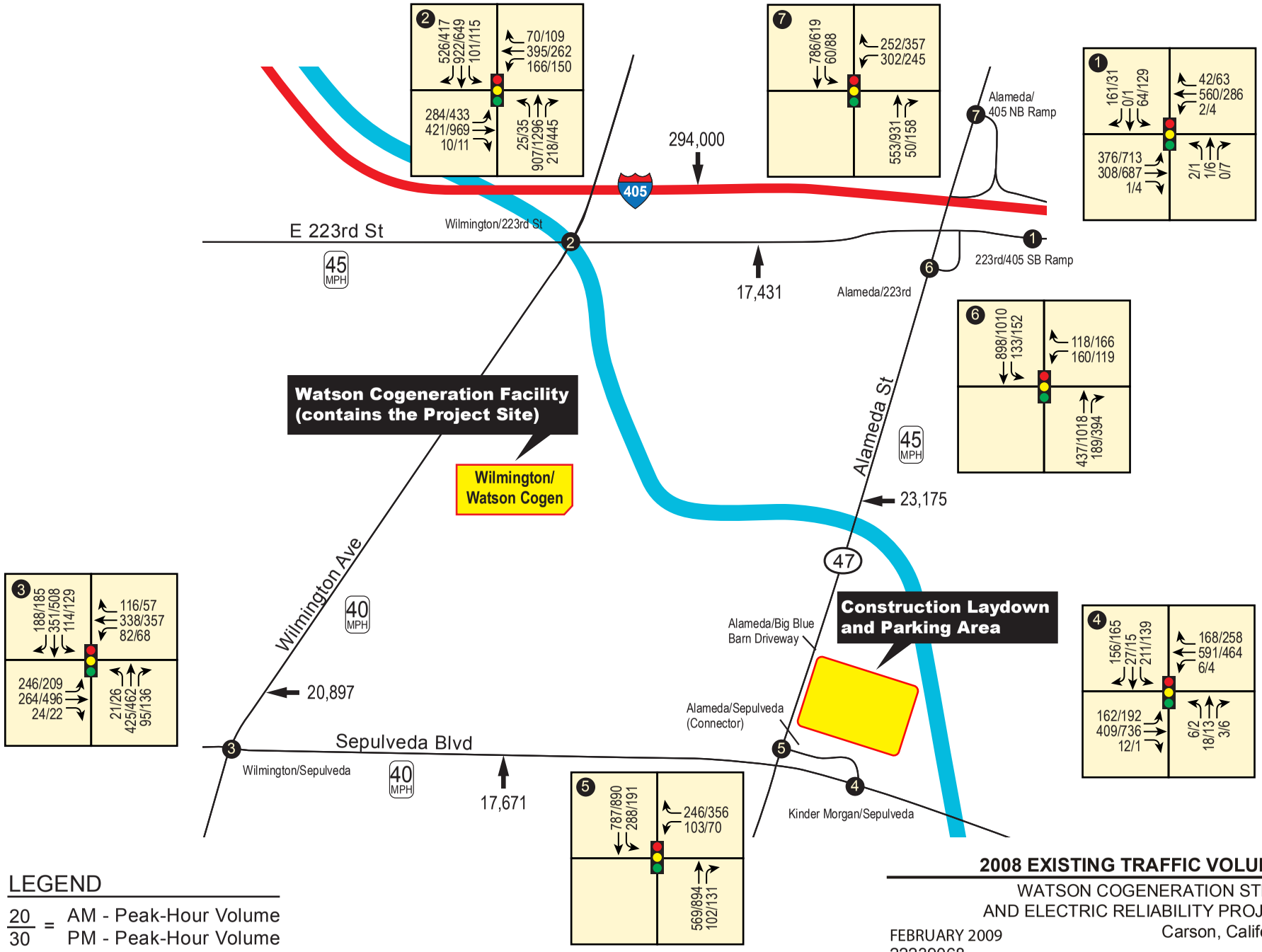
WATSON COGENERATION STEAM
AND ELECTRIC RELIABILITY PROJECT
Carson, California

FEBRUARY 2009
22239068

URS

FIGURE 5.11-3

K:/2008/watson cogen/figure 5.11-3 2008 Existing Lane Geometry.ai



LEGEND

20/30 = AM - Peak-Hour Volume / PM - Peak-Hour Volume

20,897 = Average Daily Traffic

2008 EXISTING TRAFFIC VOLUMES

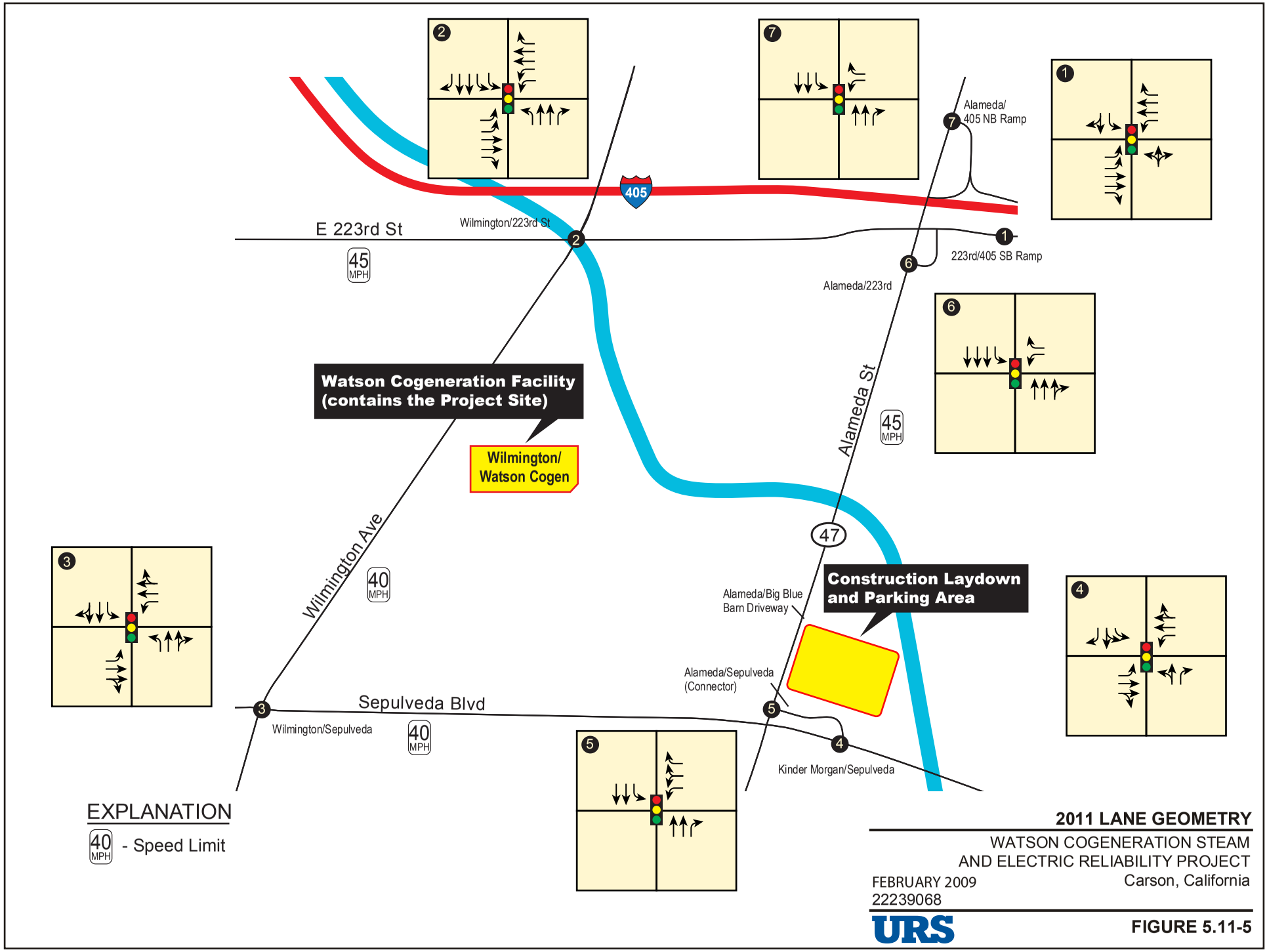
WATSON COGENERATION STEAM
AND ELECTRIC RELIABILITY PROJECT
Carson, California

FEBRUARY 2009
22239068

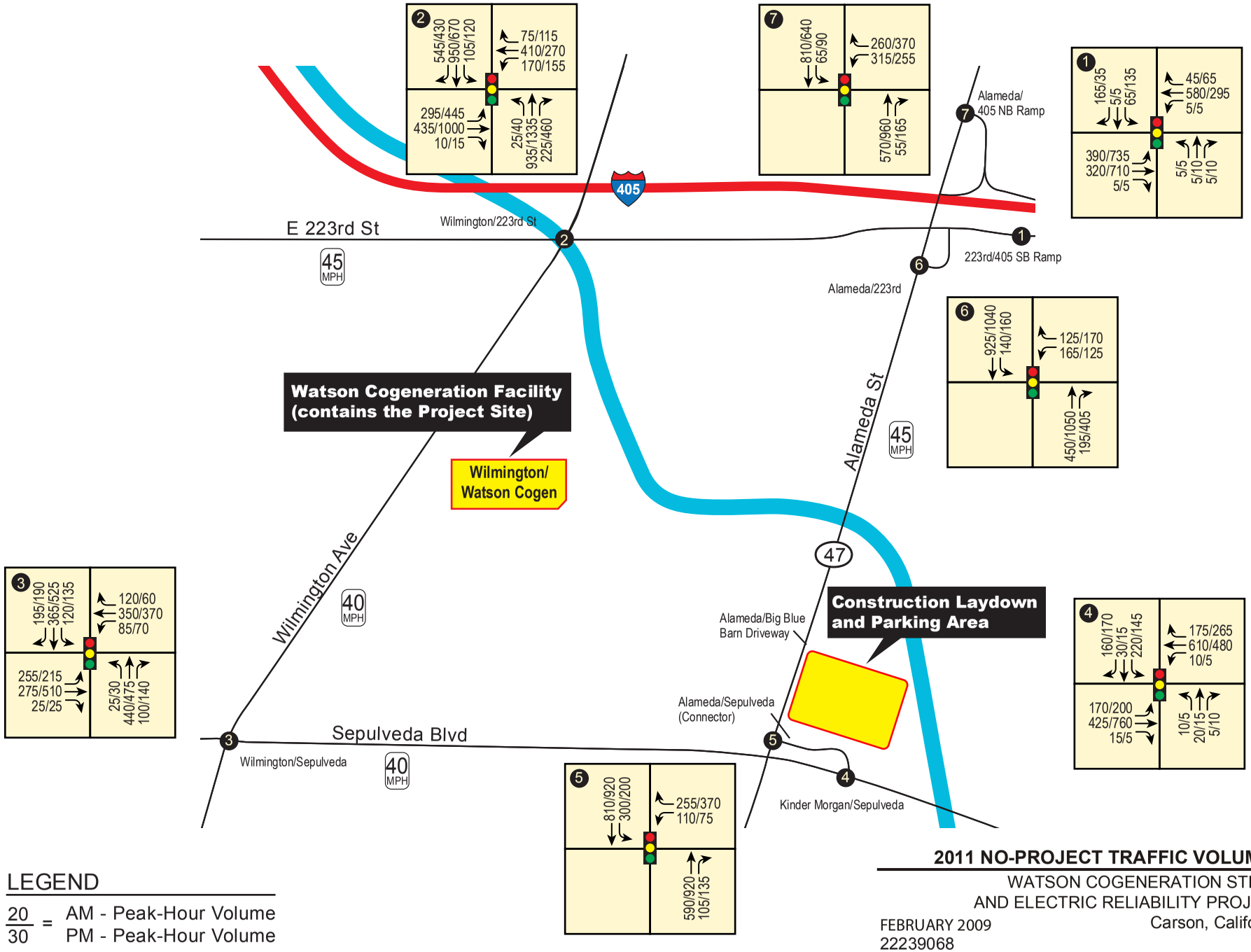
URS

FIGURE 5.11-4

K:/2008/watson cogen/figure 5.11- 4 - 2008 Existing Traffic Vol.ai



K:/2008/watson cogen/figure 5.11-5 2011 Lane Geometry.ai



LEGEND

20/30 = AM - Peak-Hour Volume / PM - Peak-Hour Volume

2011 NO-PROJECT TRAFFIC VOLUMES

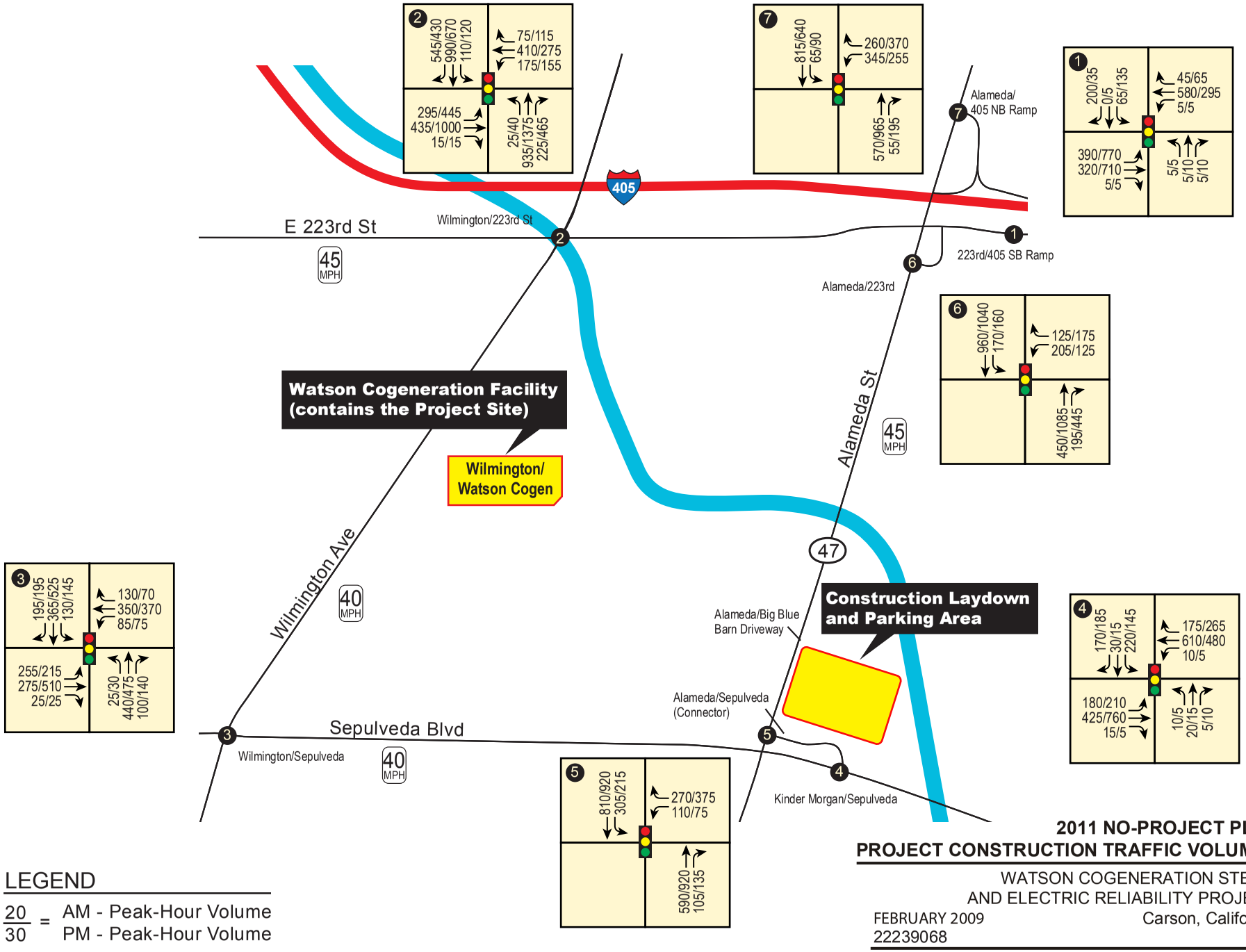
WATSON COGENERATION STEAM
AND ELECTRIC RELIABILITY PROJECT
Carson, California

FEBRUARY 2009
22239068

URS

FIGURE 5.11-6

K:/2008/watson cogen/figure 5.11-6 - 2011 No Project Traffic Vol.ai



LEGEND

20/30 = AM - Peak-Hour Volume / PM - Peak-Hour Volume

2011 NO-PROJECT PLUS
PROJECT CONSTRUCTION TRAFFIC VOLUMES

WATSON COGENERATION STEAM
AND ELECTRIC RELIABILITY PROJECT
Carson, California

FEBRUARY 2009
22239068

URS

FIGURE 5.11-7

K:/2008/watson cogen/figure 5.11- 7 - 2011 No Project Plus Project Construction Traffic Vol.ai

Adequacy Issue: Adequate ____ Inadequate ____

DATA ADEQUACY WORKSHEET

Revision No. 0 Date ____

Technical Area: **Traffic and Transportation** Project: ____ Technical Staff: ____

Project Manager: ____ Docket: ____ Technical Senior: ____

Siting Regulations	Information	AFC Page Number And Section Number	Adequate Yes Or No	Information Required To Make AFC Conform With Regulations
Appendix B (g) (1)	...provide a discussion of the existing site conditions, the expected direct, indirect and cumulative impacts due to the construction, operation and maintenance of the project, the measures proposed to mitigate adverse environmental impacts of the project, the effectiveness of the proposed measures, and any monitoring plans proposed to verify the effectiveness of the mitigation.	Section 5.11.1.1; pages 5.11-2 through 5.11-3 Section 5.11.2.6;pages 5.11-10 through 5.11-14 Section 5.11.3; page 5.11-15		
Appendix B (g) (5) (A)	A regional transportation setting, on topographic maps (scale of 1:250,000), identifying the project location and major transportation facilities. Include a reference to the transportation element of any applicable local or regional plan.	Figure 5.11-1		
Appendix B (g) (5) (B)	If the proposed project including any linear facility is to be located within 20,000 feet of an airport runway that is at least 3,200 feet in actual length, or 5,000 feet of a heliport (or planned or proposed airport runway or an airport runway under construction, that is the subject of a notice or proposal on file with the Federal Aviation Administration), discuss the project's compliance with the applicable sections of the current Federal Aviation Regulation Part 77 – Objects Affecting Navigable Airspace, specifically any potential to obstruct or impede air navigation generated by the project at operation; such as, a thermal plume, a visible water vapor plume, glare, electrical interference, or surface structure height. The discussion should include a map at a scale of 1:24,000 that displays the airport or airstrip runway configuration, the proposed power plant site and related facilities.	Figure 5.11-2		

Adequacy Issue: Adequate ____ Inadequate ____

DATA ADEQUACY WORKSHEET

Revision No. 0 Date ____

Technical Area: **Traffic and Transportation** Project: ____ Technical Staff: ____

Project Manager: ____ Docket: ____ Technical Senior: ____

Siting Regulations	Information	AFC Page Number And Section Number	Adequate Yes Or No	Information Required To Make AFC Conform With Regulations
Appendix B (g) (5) (C)	An identification, on topographic maps at a scale of 1:24,000, and a description of existing and planned roads, rail lines (including light rail), bike trails, airports, bus routes serving the project vicinity, pipelines, and canals in the Project Area affected by or serving the proposed facility. For each road identified, include the following information, where applicable:	Figure 5.11-2		
Appendix B (g) (5) (C) (i)	Road classification and design capacity;	Section 5.11.1.3, Table 5.11-3; pages 5.11-4		
Appendix B (g) (5) (C) (ii)	Current daily average and peak traffic counts;	Section 5.11.1.5, Table 5.11-5; pages 5-11-6 through 5.11-7		
Appendix B (g) (5) (C) (iii)	Current and projected levels of service before project development, during construction, and during project operation;	Section 5.11.1.5; pages 5.11-6 through 5.11-7 Section 5.11.2.6; pages 5.11-10 through 5.11-14 Section 5.11.2.7; page 5.11-14		
Appendix B (g) (5) (C) (iv)	Weight and load limitations;	Section 5.11.6.2; pages 5.11-19 through 5.11-22 Section 5.11.6.3; pages 5.11-22 through 5.11-23		
Appendix B (g) (5) (C) (v)	Estimated percentage of current traffic flows for passenger vehicles and trucks; and	Section 5.11.1.1; pages 5.11-2 through 5.11-3		
Appendix B (g) (5) (C) (vi)	An identification of any road features affecting public safety.	Section 5.11.1.1; pages 5.11-2 through 5.11-3		

Adequacy Issue: Adequate ____ Inadequate ____

DATA ADEQUACY WORKSHEET

Revision No. 0 Date ____

Technical Area: **Traffic and Transportation** Project: ____ Technical Staff: ____

Project Manager: ____ Docket: ____ Technical Senior: ____

Siting Regulations	Information	AFC Page Number And Section Number	Adequate Yes Or No	Information Required To Make AFC Conform With Regulations
Appendix B (g) (5) (D)	An assessment of the construction and operation impacts of the proposed project on the transportation facilities identified in subsection (g)(5)(C). Also include anticipated project-specific traffic, estimated changes to daily average and peak traffic counts, levels of service, and traffic/truck mix, and the impact of construction of any facilities identified in subsection (g)(5)(C).	Section 5.11.2.6; pages 5.11-10 through 5.11-14 Section 5.11.2.7; page 5.11-14		
Appendix B (g) (5) (E)	A discussion of project-related hazardous materials to be transported to or from the project during construction and operation of the project, including the types, estimated quantities, estimated number of trips, anticipated routes, means of transportation, and any transportation hazards associated with such transport.	Section 5.11.2.2; page 5.11-8 Section 5.11.2.3; page 5.11-8 through 5.11-9		
Appendix B (i) (1) (A)	Tables which identify laws, regulations, ordinances, standards, adopted local, regional, state, and federal land use plans, leases, and permits applicable to the proposed project, and a discussion of the applicability of, and conformance with each. The table or matrix shall explicitly reference pages in the application wherein conformance, with each law or standard during both construction and operation of the facility is discussed; and	Section 5.11.6, Table 5.11-12; pages 5.11-16 through 5.11-17		
Appendix B (i) (1) (B)	Tables which identify each agency with jurisdiction to issue applicable permits, leases, and approvals or to enforce identified laws, regulations, standards, and adopted local, regional, state and federal land use plans, and agencies which would have permit approval or enforcement authority, but for the exclusive authority of the commission to certify sites and related facilities.	Section 5.11.6, Table 5.11-13; page 5.11-18		

Adequacy Issue: Adequate ____ Inadequate ____

DATA ADEQUACY WORKSHEET

Revision No. 0 Date ____

Technical Area: **Traffic and Transportation** Project: ____ Technical Staff: ____

Project Manager: ____ Docket: ____ Technical Senior: ____

Siting Regulations	Information	AFC Page Number And Section Number	Adequate Yes Or No	Information Required To Make AFC Conform With Regulations
Appendix B (i) (2)	The name, title, phone number, address (required), and email address (if known), of an official who was contacted within each agency, and also provide the name of the official who will serve as a contact person for Commission staff.	Section 5.11.6, Table 5.11-13; page 5.11-18		
Appendix B (i) (3)	A schedule indicating when permits outside the authority of the commission will be obtained and the steps the applicant has taken or plans to take to obtain such permits.	Section 5.11.6.4, Table 5.11-14; page 5.11-23		