APPENDIX A

Technical AQ and GHG Emissions Report

Air Quality/Climate Change Analysis

Technical Report Update

Modified Music Festivals Plan Project

Indio, California

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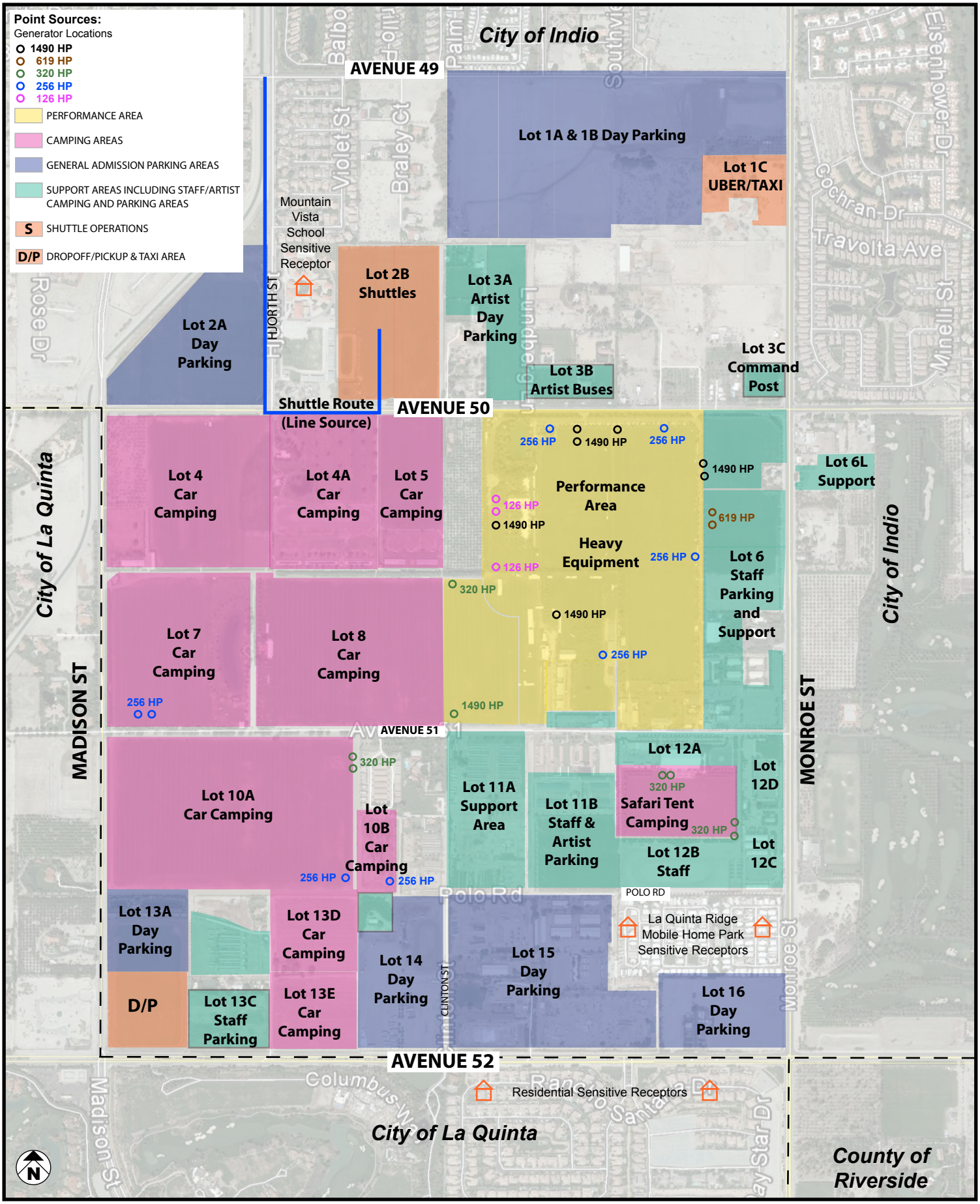
1.0 INTRODUCTION

This Air Quality/Climate Change Analysis Technical Report Update analyzes the potential air quality and greenhouse gas ("GHG") impacts of the proposed modifications to the Music Festivals Plan Project ("Approved Project"), which the City of Indio approved in April 2013 after certifying a Final Environmental Impact Report (SCH. No. 2012081085) ("Final EIR") for this Project. The Applicant—Coachella Music Festival, LLC/Goldenvoice, LLC—is requesting the approval from the City of Indio ("City") of modifications to the Major Music Festival Event Ordinance, Development Agreement, and Major Music Festival Event Permit ("Modified Project") that collectively make up the Approved Project as evaluated in the Final EIR.

The Modified Project includes updates to the Major Music Festival Event Ordinance that would increase the maximum permitted daily attendance for the Lower Attendance Festivals to 85,000 persons and for the Higher Attendance Festivals to 125,000 persons ("Modified Attendance Levels"). To accommodate the increased attendance, the Approved Festival Site would be expanded by approximately 41.8 acres within the Approved Overlay Zone. As part of the Modified Project, festival plan feature **FPF AQ-2** has been modified to increase the shuttle capacity for the Higher Attendance Festival from 25,000 people per day to 28,000 people per day.

Regional and local emissions of air pollutants associated with the Modified Project are analyzed in this update. Regional emission sources consist of vehicular traffic on roadways traveling to and from the Modified Festival Site. The localized emission sources include heavy duty diesel equipment, portable electricity generators, shuttles operating within the Modified Festival Site, and camping, parking, and support activities; these source locations are color-coded on **Figure 1, Sources and Sensitive Receptors,** with the shuttle route and the locations of large generators also identified.

Emissions of air pollutants and greenhouse gases (GHGs) estimated for the Modified Project are compared to those generated by the Approved Project. With the Approved Project, maximum daily emissions of oxides of nitrogen (NOx), volatile organic compounds (VOC or ROG), and carbon monoxide (CO) exceeded the applicable South Coast Air Quality Management District (SCAQMD) regulatory thresholds. Emissions of particulate matter (PM10 and PM2.5), sulfur oxides (SOx), and GHGs from the Approved Project were less than the applicable regulatory thresholds. This technical report update analyzes whether new significant impacts or substantial increases in the severity of previously identified impacts would result from the additional emissions that would be generated by the Modified Project.



SOURCE: Coachella Music Festival, LLC / Goldenvoice, LLC - 2016

FIGURE **1**

Meridian Consultants

Sources and Sensitive Receptors

028-004-15

2.0 AIR QUALITY

2.1 Methodology

This technical report update analyzes the maximum daily localized and regional air pollutant emissions that would be generated by a Higher Attendance Festival under the Modified Project due to greater amounts of vehicle traffic and equipment usage when compared to the Higher Attendance Festival under the Approved Project. The methodology and assumptions utilized to analyze estimate emissions are the same as used for the Approved Project in the Final EIR. Due to the short duration of each of the Modified Higher and Lower Attendance Festivals and the variability of emissions sources during each event, localized emissions were quantified and modeled separately for the Setup and Breakdown days (Thursday/Monday) and the Performance days (Friday/Saturday/Sunday). Emissions of particulate matter (PM10 and PM2.5), nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compounds (VOC) were characterized at both local and regional levels for each type of activity day.

Local emissions of air pollutants for the Setup and Breakdown days are generated by camping patron arrivals and departures and heavy equipment usage. It was assumed that camping patrons would remain at the Modified Festival Site for the duration of the Performance days. Localized emissions during the Performance days were quantified for daily general admission parking; staff and artist parking and support areas; shuttle buses; daily drop-off and pickup areas; and power generator units. The localized emission areas are color-coded on **Figure 1,** with the shuttle route and large generator locations also noted.

The SCAQMD recommends in its Localized Significance Threshold (LST) Methodology that emissions of PM10 and NOx from projects greater than 5 acres be analyzed using air dispersion modeling tools to ensure that applicable Ambient Air Quality Standards (AAQS) are not exceeded. On-site emissions of PM10 and NOx were simulated using the air dispersion model AERMOD to estimate maximum concentrations in ambient air levels resulting from festival activities under the Modified Project.

Regional emissions of air pollutants were quantified for vehicular travel to and within the Coachella Valley and added to localized emissions for comparison to SCAQMD mass daily thresholds. Vehicle miles traveled (VMT) that were previously calculated for attendance vehicles and transportation services under the Approved Project were increased by 26 percent to account for the increase in attendance under the Modified Project. This is a conservative estimate as it does not account for additional ridesharing opportunities or the mode split assumptions used in the 2015 Traffic Study prepared by the Mobility Group. Updated emission factors for the vehicle fleet mix were downloaded from the EMFAC2014 Web Database. These emissions were evaluated in the context of establishing consistency with the SCAQMD Air Quality Management Plan (AQMP). All air quality analysis emissions calculations

are provided in the spreadsheets attached to this report as **Appendix A, Localized Emissions,** and **Appendix B, Regional Emissions**.

Ambient monitoring data for the years 2011 through 2013 indicates that the Source Receptor Area in the City of Indio has exceeded the ozone and PM10 standards. This is similar to the data provided in the Approved Technical Report, which indicated that the Source Receptor Area in the City exceeded the ozone and PM10 standards for the years 2009 through 2011. The Modified Project is located within the Salton Sea Air Basin, which is under the jurisdiction of the SCAQMD. In 2012, the Salton Sea Air Basin was in federal nonattainment for PM2.5. In 2015, the Salton Sea Air Basin has met the state and federal attainment standards for PM2.5. The state and federal pollutant status of ozone, carbon monoxide, nitrogen dioxide, and sulfur dioxide remain unchanged in 2015.

2.1.1 Setup and Breakdown Days Emissions

Similar to the assumptions used for the Approved Project, the Setup and Breakdown days were assumed to occur on Thursday and Monday, respectively, for the Modified Project. On these days, heavy equipment is used to set up the Performance Area, and camping vehicles arrive and depart from the festival. The Modified Festival Site will increase by approximately 41.8 acres in total size when compared to the Approved Festival Site and will convert the use of approximately 98 acres of areas within the Approved Overlay Zone. The increase in the Modified Festival Site and the change in uses would increase the Higher Attendance Festivals capacity by approximately 26 percent under the Modified Project in comparison to the Approved Project. As a conservative estimate, to quantify maximum emissions from the Higher Attendance Festivals, the traffic volumes of passenger vehicles and motor coaches obtained from The Mobility Group were increased by 26 percent. Heavy-duty equipment inventories were adjusted accordingly for the Setup and Breakdown days, and generator units were added as appropriate for the Performance days. A thorough discussion of the heavy-equipment emissions source characterization for the Performance Area during Setup and Breakdown is provided in **Section 2.2.2.1**.

For the regional scale, the distribution assumptions of locations from which attendees would be traveling to the Modified Festival Site identified in the Final EIR were used. Regional exhaust emissions were quantified for camping and daily attendance vehicles traveling from the Palm Springs Airport, Ontario Airport, Los Angeles International Airport (LAX), and other regional locations. These vehicles were assumed to arrive in the Coachella Valley on Thursday and return to their origins on Monday. Also included in the Setup and Breakdown days are estimates of on-site exhaust and fugitive dust emissions for those vehicles that would be in the camping areas; these vehicles were assumed to arrive at the festival site on Thursday, remain on the festival grounds for the duration of the Performance days, and

depart on Monday. A thorough discussion of the local and vehicle source emissions attributed to the Setup and Breakdown days is provided in **Section 2.2.2.1**.

2.1.2 Performance Days Emissions

The festival Performance days are Friday, Saturday, and Sunday for each of the five festivals. For these days, it was assumed that (1) all setup was completed; (2) heavy-equipment usage would be minimal and predominantly associated with the fugitive dust control provided by water trucks; and (3) camping attendees were temporarily stationed on the festival grounds and would not be departing or returning during the festival performances. Activities generating emissions of air pollutants on the Performance days included operation of generator units for festival power supply; fugitive dust and exhaust emissions from daily attendance vehicles; fugitive dust and exhaust emissions from daily staff support and artist parking areas; and fugitive dust and exhaust emissions from transportation services (shuttle routes, taxi, and pickup and drop-off areas). A thorough discussion of the emissions sources included in the Performance days analyses is provided in **Section 2.2.2.2**.

2.2 Model Formulation

Emissions of air pollutants (PM10 and NOx) generated by sources within the boundary of the Modified Festival Site were simulated using the federally promulgated regulatory air dispersion modeling software AERMOD to evaluate localized impacts on air quality.[1] AERMOD is a steady-state Gaussian plume model designed to predict maximum concentrations of air pollution resulting from various types of emissions sources. The types of sources that were used to characterize emissions from the Modified Project included:

Area source: A flat, two-dimensional polygonal-shaped source comprising a combination of point and volume sources that cannot be designated to specific locations within the bounds of the emissions area

Line source: A series of volume sources along a path (e.g., vehicular traffic along a roadway)

Point source: An individually identified source of emissions that is typically stationary and defined by its geographic location and fixed release parameters (e.g., an exhaust stack on a generator)

Volume source: A three-dimensional source of diffusive air pollutant(s); essentially, an area source with a height component (e.g., fugitive gases leaking out of a valve)

1 http://www.epa.gov/scram001/guidance/guide/appw_05.pdf.

The following inputs were included in the air dispersion model: emissions from vehicle traffic (exhaust and fugitive dust) in the on-site camping and parking lots were represented by area sources; emissions from generators were represented by point sources; and emissions from the shuttle route within the Modified Project boundary were represented by a line source. Detailed descriptions of the source parameters are provided in **Section 2.2.2**. Source locations are depicted on **Figure 1**. All inputs are similar to those used in the analysis for the Approved Project.

The AERMOD software relies on meteorological and terrain data in its meteorological preprocessor AERMET. Meteorological data from the Indio air monitoring station was obtained from the SCAQMD website.[2] The Indio air monitoring station is located on the northeast corner of the intersection of Dr. Carreon Boulevard and Jackson Street, approximately 1.9 miles northeast of the Modified Festival Site. Meteorological data from this station represents the best available characterization of air patterns at the Modified Festival Site. Terrain data were downloaded from GeoCommunity's website in 10-meter resolution Digital Elevation Model (DEM) files for the Indio and La Quinta regions.[3] The data were preprocessed for compatibility with the AERMOD software.

Emissions of PM10 and NOx were modeled separately for the Setup and Breakdown days and the Performance days. The primary difference in emissions characterization between PM10 and NOx is that fugitive dust is exclusively PM10. NOx emissions are only attributed to the operation of vehicle and equipment engines. To be conservative in the predicted concentrations, a "Rural" dispersion option was selected in AERMOD. NOx modeling was performed under the default Ambient Ratio Method.

Model outputs were set to the maximum 24-hour concentration of PM10 and maximum 1-hour concentration of NO2 for comparison to the SCAQMDAAQS for Criteria Pollutants.[4] The value for the 24-hour SCAQMD AAQS for PM2.5 is the same as the value for PM10. PM2.5 is a subset of PM10 and, therefore, will never be measured at higher ambient concentrations than PM10. For this reason, only emissions of PM10 were quantified and modeled for comparison to the applicable thresholds. Concentrations of PM2.5 are estimated to be approximately 90 percent of the PM10 concentration.

2.2.1 Data Resources

Emissions were quantified for heavy-duty off-road equipment (exhaust) and vehicular traffic (exhaust and fugitive dust). It was assumed that all heavy-duty off-road equipment would meet Tier 4 Interim emissions standards as identified in the Final EIR mitigation measure AQ-1 minimizing air emissions and set forth by the California Air Resources Board (CARB). This assumption is consistent with the analysis

2 http://www.aqmd.gov/docs/default-source/air-quality/meterorological-data/aermod-ready-meteorological-data/table-1-meteorological-sites/aermod-table-1-indio.exe?sfvrsn=7.

3 http://data.geocomm.com/catalog/US/61069/2292/group4-3.html.

4 http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2.

prepared for the Approved Project. Tier 4 Interim emissions standards have been established for carbon monoxide (CO), NOx, particulate matter (PM10 and PM2.5), and VOCs and were extracted from Appendix D of the CalEEMod User Guide.[5]

Vehicular traffic emission factors were downloaded from the EMFAC2014 Web Database.[6] The emissions factors used for the Approved Project were from the EMFAC2011 Web Database for the year 2012 fleet mix. Vehicles traveling to and from the festival on a regional scale were assumed to be a mix of light-duty cars and trucks. Artist buses and shuttles were assumed to be motor coaches. The traffic volumes of passenger vehicles and motor coaches were obtained through correspondence with The Mobility Group. The counts and usage schedules for the off-road heavy-duty equipment were increased by 26 percent to account for the increase in maximum daily all-inclusive attendance for the Higher Attendance Festival. These parameters were accounted for in the calculations to prepare the air pollutant emissions estimates for the Modified Project, as described in **Section 2.2.2**.

The following festival plan features identified in the Final EIR were adopted with approval of the Music Festivals Plan and were included in the analysis for the Modified Project.

FPF AQ-1 Dust control measures will be implemented by the Festival Operator in all unpaved parking areas to the satisfaction of the Public Works Director and in full compliance with applicable SCAQMD standards.

- Contractor will pre-water all unpaved parking areas prior to the use of these areas each day.
- Water will be applied continuously to all unpaved parking areas during each day by means of water trucks as follows: water will be applied to maintain visible moisture on the soil surface and a minimum of one (1) two thousand (2,000) gallon water truck will be required to treat each 4 acres of parking area per hour.
- Visible moisture will be visible on all unpaved parking areas at all times these areas are in use.
- Following the conclusion of the Major Music Festivals, if necessary for dust control, contractor will re-vegetate or chemically stabilize all unpaved venue parking areas. If a chemical stabilizing dust suppressant is used in lieu of re-vegetation, it will be applied in concentrations consistent with the suppressant manufacturer's specification.

5 http://www.aqmd.gov/docs/default-source/caleemod/caleemod-appendixd.pdf?sfvrsn=2.

6 http://www.arb.ca.gov/emfac/2014/.

FPF AQ-2 The Festival Operator will develop and implement a Shuttle Plan providing for the transportation of a minimum of 25,000 people per day during a Higher Attendance Festival as needed to meet the demand for this service, and a minimum of 20,000 people per day during a Lower Attendance Festival as needed to meet the demand for this service. Shuttle transportation shall be at the Festival Operator's expense and will be to and from hotels and off-site parking areas to the Future Festival Site via mutually agreed locations and routes. The Shuttle Plan will identify the shuttle routes, operation schedules for shuttle service, and overall plan capacity, to be provided during each Major Music Festival Event.

FPF AQ-3 The Festival Operator will allow camping onsite to reduce the number of trips to and from the Future Festival Site.

FPF AQ-4 The Festival Operator will limit cooking to vendors and within designated Camping Areas.

FPF AQ-5 The Festival Operator will continue to provide incentives for patrons traveling to Future Festivals to participate in carpools, similar to the types of incentives currently provided to encourage carpools for travel to the Coachella Festival.

A carpool incentive program, known as "Carpoolchella", has been in place since 2007 for the Coachella Festival. Under this existing program, any vehicle with 4 or more passengers is eligible to win prizes including VIP tickets for life, all access and VIP wristbands, Coachella merchandise and other prizes. Any vehicle displaying "Carpoolchella" on their vehicle is eligible.

The Coachella website will also promotes carpools through the Zimride service by providing a link to the Zimride website, or similar service and website. Zimride is a social rideshare community that allows travelers to easily find other drivers or passengers who are traveling along the same route. The Zimride website has a Coachella webpage where drivers can post available rides from any location.

FPF AQ-6 Emergency standby generators will be tested before they arrive onsite or on days when there are no other diesel emissions from heavy equipment or other generators such as on Tuesday or Wednesday prior to the first Major Music Festival event.

FPF AQ-7 Diesel generators will use a blend of 30 percent biodiesel to reduce particle emissions.

The following mitigation measures identified in the Final EIR minimizing air quality impacts were included in the analysis for the Modified Project.

MM AQ-1 All generators and heavy equipment must be interim Tier 4 or better.

MM AQ-2 All generators shall be limited to operating to a maximum of 16 hours per day during each future festival.

2.2.2 Emissions Sources

2.2.2.1 Setup and Breakdown Sources

For the air dispersion modeling of localized PM10 and NOx emissions from the Modified Project, Setup and Breakdown emissions sources were quantified for on-site camping vehicle travel within the camping lots and for heavy equipment usage within the Performance Area. The camping lots were identified using **Figure 1**, and the anticipated vehicle capacity for each lot was obtained from the Festival Operator. Exhaust emissions were estimated using a composite emission factor from the EMFAC2014 emission factors for light-duty vehicles, which are expressed as grams of air pollutant per mile traveled. The average distance each car would travel was calculated as the square root of the lot area. Exhaust emissions for PM10 and NOx were calculated for each lot by multiplying the number of cars by the average distance and then by the composite emission factor for light duty vehicles:

$$Exhaust\ Emissions\ (grams) = \ Cars\ \times Avg.Distance\left({}^{miles}/_{car}\right) \times EF_i\ \left({}^{g}/_{mi}\right)$$

Emissions of PM10 from the camping areas comprise both exhaust emissions and fugitive dust emissions. Fugitive dust emissions calculations utilized the average car distance traveled in each lot, a mean silt content of 11 percent for dirt on unpaved roads, and an average vehicle weight of 2 tons for input to the fugitive dust estimation methodology for unpaved roads prescribed by the Western Regional Air Partnership (WRAP) based on the Environmental Protection Agency (EPA) AP-42 *Compilation of Air Pollutant Emission Factors*.[7,8] Field experiments conducted by the Midwest Research Institute (MRI) determined that watering of the unpaved areas twice daily would reduce fugitive dust emissions by 55 percent.[9,11] Daily fugitive dust emissions were quantified for each lot, and the total daily emissions of PM10 were estimated by summing the exhaust and fugitive dust emissions.

7 http://www.wrapair.org/forums/dejf/fdh/content/FDHandbook_Rev_06.pdf
8 http://www.epa.gov/ttnchie1/ap42/
9 http://nepis.epa.gov/Exe/ZyPDF.cgi/900F0B00.PDF?Dockey=900F0B00.PDF
10 http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds

The AERMOD model relies on specific emission rate parameters for each type of source. Average daily emission rates for PM10 and NOx $\left({}^{grams}/_{day}\right)$ from each lot were converted to grams per second per square meter of lot area $\left({}^{g}/_{s \times m^2}\right)$ for input to the AERMOD model as area sources.

Emissions from heavy-duty equipment usage in the Performance Area during Setup and Breakdown were calculated using the CARB Tier 4 Interim emission factors, as mentioned previously. **Table 1, Modified Project Setup and Breakdown Equipment Inventory,** presents the equipment inventory that would be required to prepare the expanded festival grounds during the Setup and Breakdown days. Approximately 14 additional vehicles were added in comparison to the Approved Technical Report to account for the Performance Area expansion.

Table 1
Modified Project Setup and Breakdown Equipment Inventory

Source	OFFROAD Source Category	Count	Hours/Day	Horsepower (HP)	Load Factor
Boom Lifts	Aerial Lifts	11	8	34	0.31
Scissors & Single-Man Lifts	Aerial Lifts	8	8	34	0.31
34' Telescopic Boom	Aerial Lifts	1	8	34	0.31
Compressor w/ Breaker	Air Compressors	5	8	78	0.74
Forklifts	Forklifts	33	8	83	0.4
Straight Mast RT Forklift	Rough Terrain Forklifts	3	8	83	0.4
Water Trucks	Off-highway Trucks	11	8	381	0.38

Each of these pieces of heavy equipment was assumed to be used throughout the Performance Area during Setup and Breakdown. The variability in location of each piece of equipment warranted that the emissions be summed for all units and distributed throughout the Performance Area for air dispersion modeling purposes. The total daily emissions of PM10 and NOx for the heavy equipment were calculated by multiplying the number of equipment by the daily usage rate (hours/day), the horsepower (HP), the load factor (unitless), and the Tier 4 Interim emission factor $\left({}^{grams}/_{hp-hour}\right)$, and summing the source emissions. Average daily emission rates of PM10 and NOx were prepared for AERMOD based on the acreage of the Performance Area and converting the values to grams per second per square meter $\left({}^{g}/_{s \times m^2}\right)$.

2.2.2.2 Performance Sources

Source emissions of PM10 and NOx for Performance days were prepared similarly to those for the Setup and Breakdown days. Emissions from the on-site lots that will accommodate daily General Admission parking, staff and artist parking, and shuttle and taxi services were characterized for the Performance

day model. Lot acreages were measured and it was assumed each car would traverse a distance equal to the square root of the area. Exhaust emissions were calculated using the same composite emission factors from EMFAC2014 as the camping lots. Fugitive dust emissions calculations followed the same methodology as prescribed in the WRAP handbook. Average daily emission rates for PM10 (exhaust and fugitive dust) and NOx (exhaust) were calculated in grams per second per square meter $\left({}^{g}/_{s \times m^2}\right)$ for each lot and input to the AERMOD model.

Heavy-duty equipment with Tier 4 Interim standards on the Performance days included generators and water trucks. Generators were divided into two classes for emissions characterization. Generators with greater than 100 horsepower (hp) rating were individually modeled as point sources, with specific locations attributed to each. It was assumed that the larger generators would remain stationary throughout the duration of the festival. These generators are denoted by their horsepower rating on **Figure 1**. **Table 2**, **Modified Project Performance Days Generator Sources**, presents data on the count, usage rate, and stack parameters of each type of generator included in the Performance day inventory. The Modified Project would require an additional 3 generators when compared to the Approved Project for the expanded Performance Area.

Table 2
Modified Project Performance Days Generator Sources

Power Rating	Type	Count	Hours/Day	Stack Height* (m)	Exhaust Temp* (K)	Exit Velocity* (m/s)	Diameter* (m)
1490 HP	Point	8	16	7.26	758.00	40.51	0.31
619 HP	Point	2	16	3.71	793.56	92.45	0.16
320 HP	Point	7	16	3.55	728.55	54.78	0.13
256 HP	Point	9	16	2.43	795.31	50.25	0.12
126 HP	Point	3	16	2.69	759.49	58.78	0.10
97.9 HP	Area	18	16	3.00	N/A	N/A	N/A
67.1 HP	Area	6	16	3.00	N/A	N/A	N/A
35.9 HP	Area	10	16	3.00	N/A	N/A	N/A
Light Towers (12 HP)	Area	200	7	3.00	N/A	N/A	N/A

**Source: San Joaquin Valley Air Pollution Control District, Diesel generator stack parameters, electronic communication on August 16, 2011*

Generators with horsepower ratings below 100 HP, including approximately 200 light towers stationed throughout the Modified Festival Site area, were grouped as an area source because their individual emissions were significantly lower relative to the larger generator units. The area source boundary was traced along the perimeter of the Modified Festival Site. All generator units were assumed to operate

under Tier 4 Interim emissions standards in accordance with Final EIR mitigation measure AQ-1. Emission rates were calculated in grams per second for the point sources and in grams per second per square meter for the area source. Emissions from the water trucks were also included in the area source average emission rate calculation.

The local shuttle route within the bounds of the Modified Project area was modeled as a line source and is depicted on **Figure 1**. The length of the traced route was approximately 1,300 meters (0.81 miles) along Hjorth Street and Avenue 50 and into the shuttle lot. Emission factors in grams per mile were obtained from the EMFAC2014 Web Database for motor coaches. Daily shuttles would increase under the Modified Project and a total emission rate was quantified for the localized shuttle travel. For PM10, fugitive emissions within the shuttle lot were calculated following the WRAP methodology previously described in **Section 2.2.2.1**. Separate emissions sources were characterized in AERMOD for the running of the shuttles along the internal route (line source) and the fugitive dust emissions within the shuttle lot (area source).

2.2.3 Receptors

Sensitive-receptor locations include residences, schools, hospitals, and other facilities that are inhabited by individuals who may be particularly susceptible to adverse health effects from air quality detriments. Three distinct receptor locations were identified near the Modified Festival Site: the Mountain Vista Elementary School, a mobile home park located within the bounds of the Modified Project, and the residential community situated to the south of the Modified Project across Avenue 52. The sensitive receptor locations are identified on **Figure 1,** and their geographic coordinates are presented in **Table 3, Sensitive Receptor Coordinates**.

Table 3
Sensitive Receptor Coordinates

Receptor	UTM E	UTM N
Housing Development		
West Edge	570282	3725882
East Edge	570527	3725882
Mobile Home Park		
Southwest	570624	3726124
Northwest	570630	3726316
Southeast	570993	3726158
Northeast	570979	3726329
Mountain Vista Elementary	569867	3727750

To ensure that maximum concentrations at all sensitive receptors were accounted for, a Cartesian fence line grid of receptors was generated along the Modified Project boundary with 50-meter spacing. A secondary grid was generated at a distance of 40 meters from the fence line grid with 100-meter spacing to evaluate plume dispersion beyond the fence line that would be more representative of concentrations at the receptor locations. A total of 524 receptor locations were included in the model formulation.

2.3 Air Quality Results

Emissions of air pollutants generated by the Modified Project were evaluated under localized and regional regulatory scenarios. Similar to analysis methodology for the Approved Project, air dispersion modeling was conducted only for emissions emanating from within the bounds of the Modified Project to be consistent with the SCAQMD LST analysis.[10] Regional emissions were quantified on a daily and annual basis for comparison to applicable SCAQMD thresholds.

2.3.1 Localized Emissions Modeling

As identified in **Table 4, Approved Project Modeling Results with Mitigation**, the peak concentration of NO2 (1-hour) at the nearest sensitive receptor was 221.43 ug/m3. The peak concentration of PM10 (24-hour) and PM2.5 (24-hour) was 10.2 ug/m3 and 9.4 ug/m3, respectively. The Approved Project incorporated Festival Plan Features AQ-1 through FPF AQ-7 and Mitigation Measure AQ-1, use of Interim Tier 4 engines, to mitigate potential NO2, PM10, and PM2.5 emission impacts to below current SCAQMD standards.

10 http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds

Table 4
Approved Project Modeling Results with Mitigation

Receptor	NO2 (1-hr)	PM10 (24-hr)	PM2.5(24-hr)
	ug/m^3	ug/m^3	ug/m^3
Threshold	**339**	**10.4**	**10.4**
Setup/Breakdown (Thursday/Monday)			
Mobile Home Park	134.01	3.01	2.76
Residences	125.44	4.07	3.74
Mountain Vista Elementary	124.13	1.00	0.92
Peak Concentration	153.67	10.19	9.37
UTME	570887.81	569971.13	569971.13
UTMN	3727533.39	3726320.52	3726320.52
Festival (Friday/Saturday/Sunday)			
Mobile Home Park	172.72	0.99	0.91
Residences	187.79	1.01	0.93
Mountain Vista Elementary	183.50	0.79	0.73
Peak Concentration	221.43	2.17	1.99
UTME	569518.09	569518.09	569518.09
UTMN	3727500.6	3727500.6	3727500.6

Similar to the Approved Project, the Modified Project incorporated FPF AQ-1 through AQ-7 and MM AQ-1—use of Interim Tier 4 engines—to mitigate potential NO2, PM10, and PM2.5 emission impacts to below current SCAQMD standards. A summary of the Modified Project concentrations predicted at the sensitive receptor locations is presented in **Table 5, Modified Project Modeling Results—Sensitive Receptors**, along with the coordinates of the maximum predicted concentration. The peak concentration of NO2 (1-hour) at the nearest sensitive receptor is 179.43 ug/m3. The peak concentration of PM10 (24-hour) and PM2.5 (24-hour) was 9.87 ug/m3 and 8.89 ug/m3, respectively. This decrease is explained by the more stringent regulations on Tier 4 Interim diesel engine standards, as well as a cleaner passenger vehicle fleet in 2017 relative to 2012.

Table 5
Modified Project Modeling Results—Sensitive Receptors

Pollutant Unit Threshold	NO2 (1-hr) ug/m^3 339	PM10 (24-hr) ug/m^3 10.4	PM2.5(24-hr) ug/m^3 10.4
Setup/Breakdown (Thursday/Monday)			
Mobile Home Park	141.78	2.40	2.16
Residences	137.75	1.83	1.65
Mountain Vista Elementary	141.51	3.17	2.85
Peak Concentration	**149.66**	**7.25**	**6.52**
UTME	570194	569981	569981
UTMN	3726724	3726754	3726754
Festival (Friday/Saturday/Sunday)			
Mobile Home Park	141.58	5.38	4.84
Residences	141.82	5.85	5.26
Mountain Vista Elementary	152.77	4.22	3.80
Peak Concentration	**179.43**	**9.87**	**8.89**
UTME	569818	570552	570552
UTMN	3727544	3727951	3727951

PM10 and NOx concentration plume contours generated by AERMOD for the Setup and Breakdown and Performance emission scenarios are illustrated in **Figure 2, Setup and Breakdown Days—Maximum 24-Hour PM10 Concentrations**; **Figure 3, Setup and Breakdown Days—Maximum 1-Hour NO2 Concentrations**; **Figure 4, Performance Days—Maximum 24-Hour PM10 Concentrations**; and **Figure 5, Performance Days—Maximum 1-Hour NO2 Concentrations**.

2.3.2 Regional Emissions

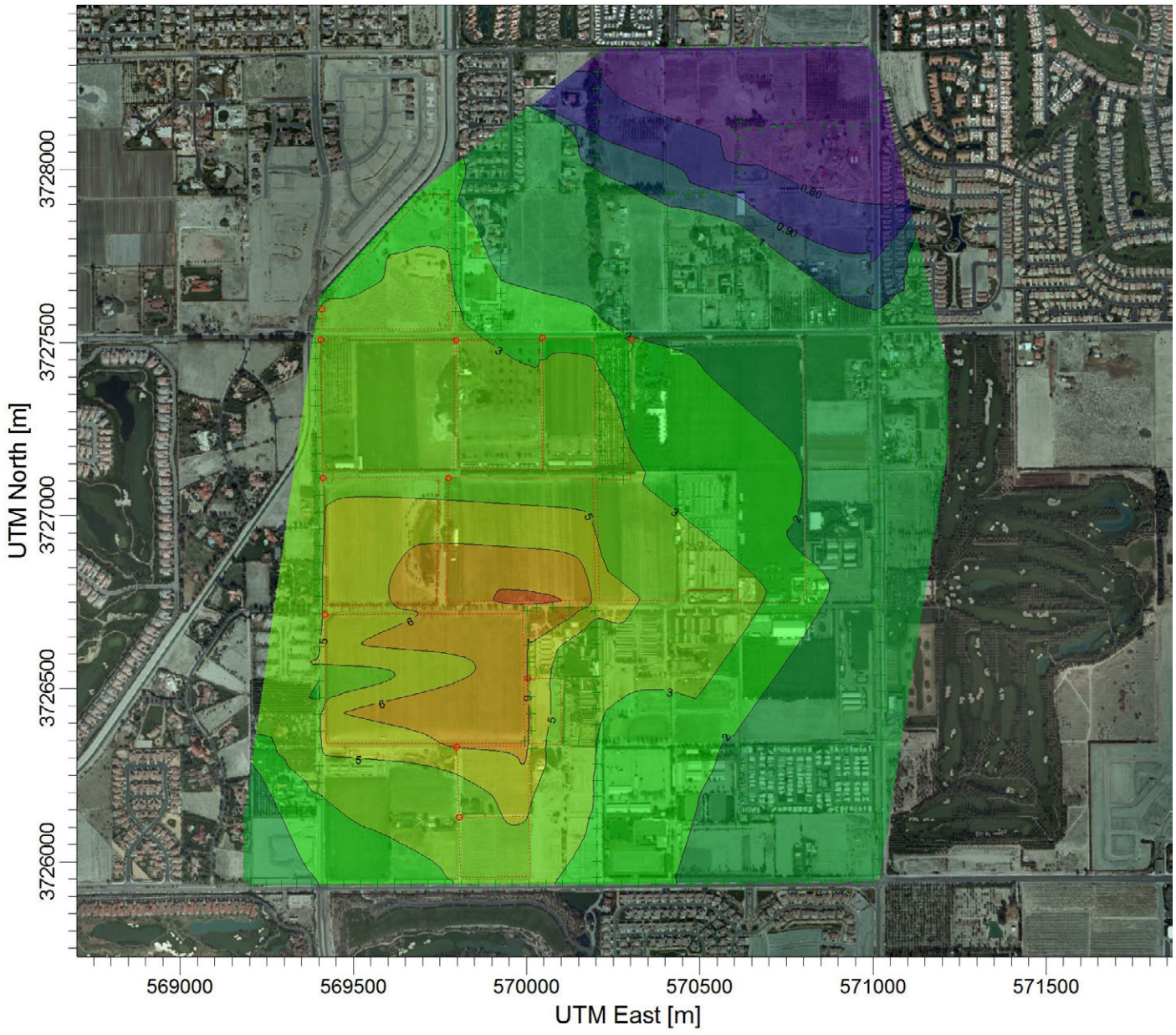
The mitigated regional mass daily emissions presented in the Approved Report are provided in **Table 6, Approved Project Mitigated Regional Mass Daily Emissions.** As indicated in **Table 6**, the Approved Project would have a maximum daily emission of 2,160.1 pounds per day (lb./day) of NOx, 332.3 lb./day of VOC, 41.0 lb./day of PM10, 37.6 lb./day of PM2.5, 6,949.3 lb./day of CO, and no lead emissions.

Table 6
Approved Project Mitigated Regional Mass Daily Emissions

Highest Single Day Emissions					
Pollutant	Regional Travel Emissions (lb./day)	On-Site Emissions (lb./day)	Total Emissions (lb./day)	Operations Threshold (lb./day)	Exceed Threshold?
NOx	910.6	1,249.5	2,160.1	55	**Yes**
VOC	256.2	72.1	332.3	55	**Yes**
PM10	9.7	31.25	41.0	150	No
PM2.5	8.8	28.75	37.6	55	No
CO	5,910.3	1,039.0	6,949.3	550	**Yes**
Lead	0.0	0.0	0.0	3	No

Source: SCAQMD, Air Quality Significance Thresholds, March 2011.

Table 7, Modified Project Mitigated Regional Mass Daily Emissions, includes emission related to travel to and from the Coachella Valley area and localized on-site emissions. Maximum daily emissions of CO and VOCs were attributed to regional vehicle travel on the Setup and Breakdown days. The maximum emission quantities for NOx, PM10, and PM2.5 emissions were associated with activities occurring on the Performance days.



NOT TO SCALE

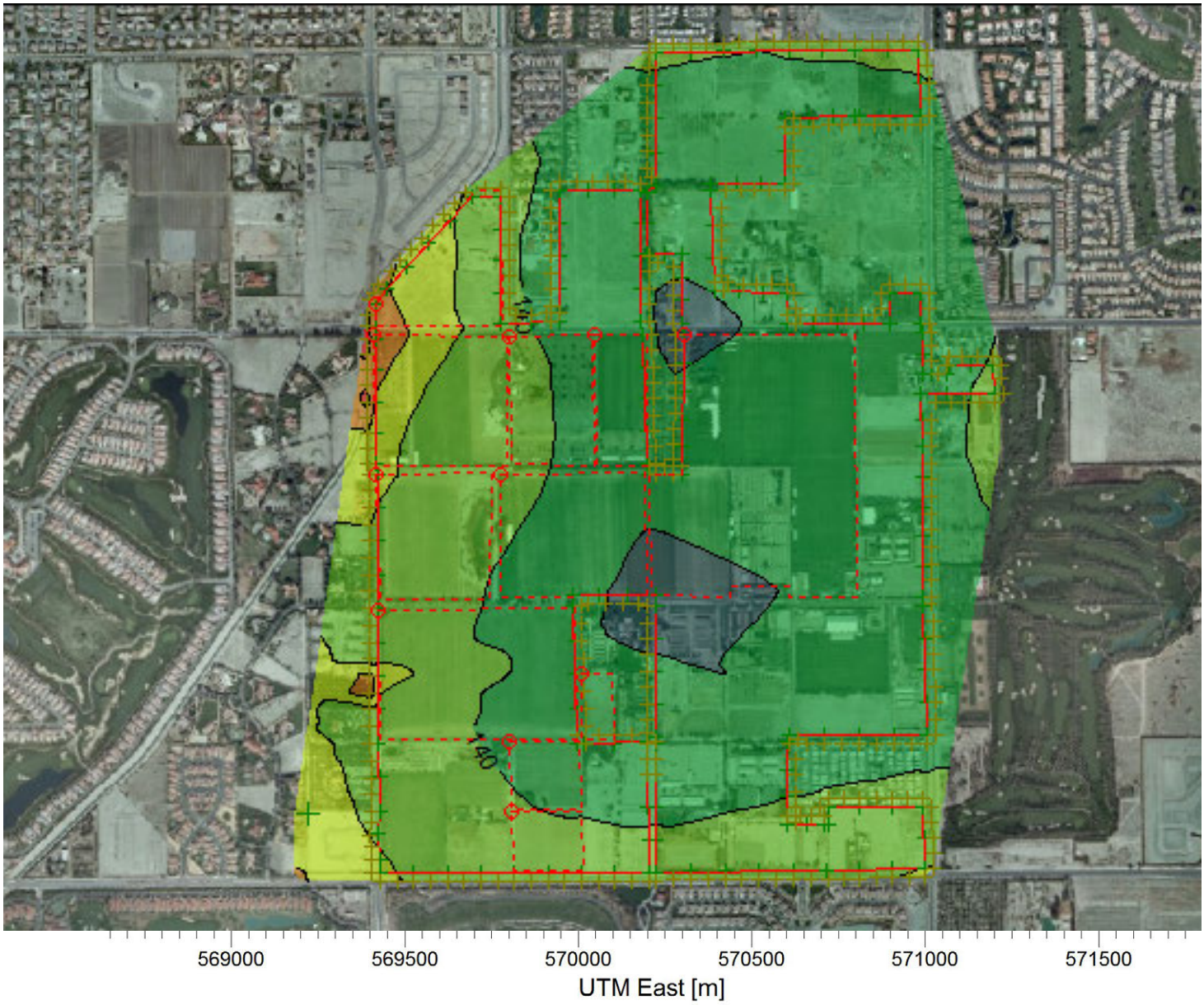
SOURCE: Coachella Music Festival, LLC / Goldenvoice, LLC. AERMOD View - Lakes Environmental Software

FIGURE **2**

Meridian Consultants

Setup and Breakdown Days
Maximum 24-Hour PM10 Concentrations

028-004-15



PLOT FILE OF HIGH 1ST HIGH 1-HR VALUES FOR SOURCE GROUP: ALL ug/m^3

Max: 149.7 [ug/m^3] at (570194.00, 3726723.93)

NOT TO SCALE

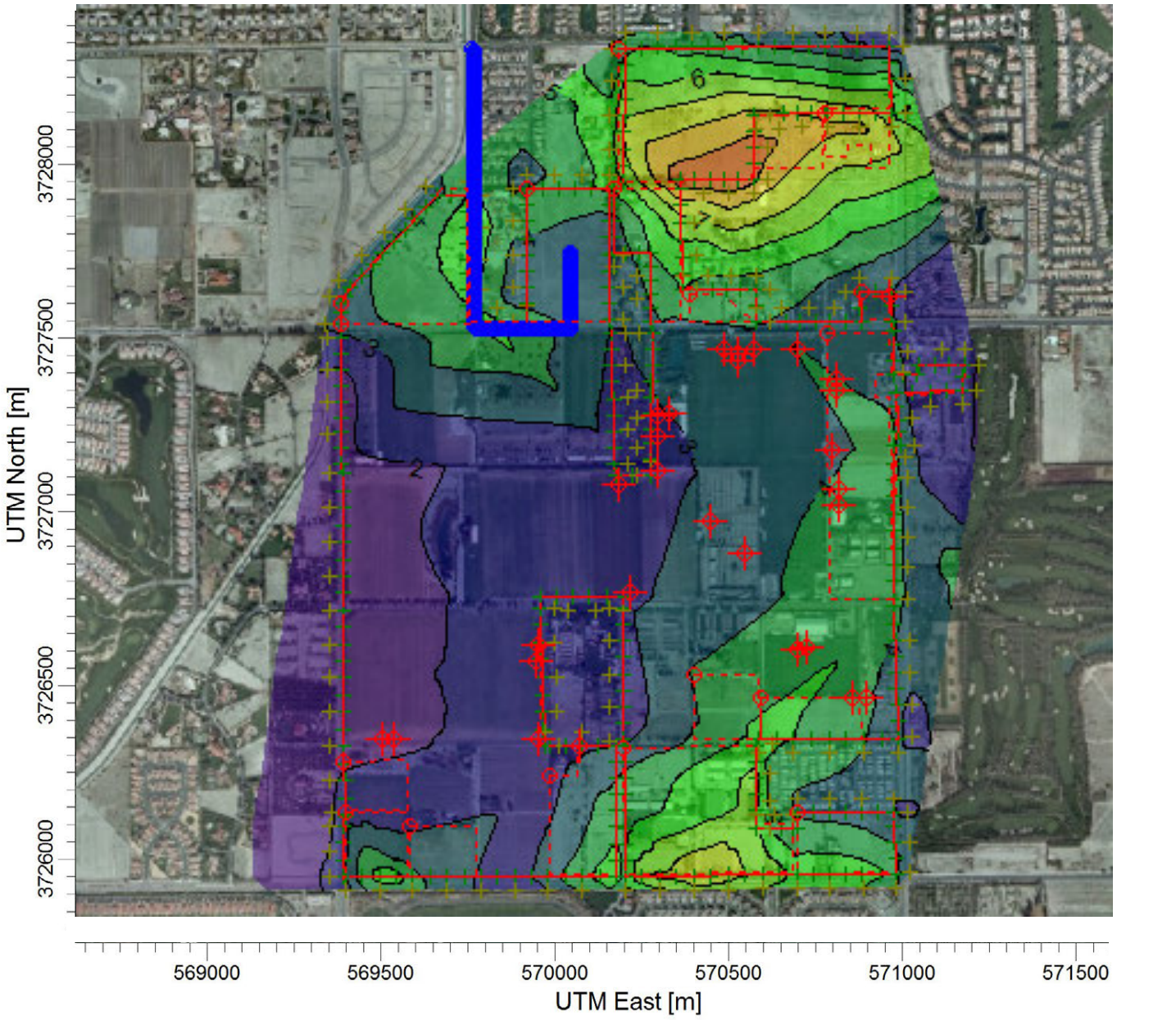
SOURCE: Coachella Music Festival, LLC / Goldenvoice, LLC. AERMOD View - Lakes Environmental Software

FIGURE **3**

Meridian Consultants

Setup and Breakdown Days
Maximum 1-Hour NO2 Concentrations

028-004-15



PLOT FILE OF HIGH 1ST HIGH 24-HR VALUES FOR SOURCE GROUP: ALL ug/m^3

Max: 9.85 [ug/m^3] at (570551.80, 3727951.00)

NOT TO SCALE

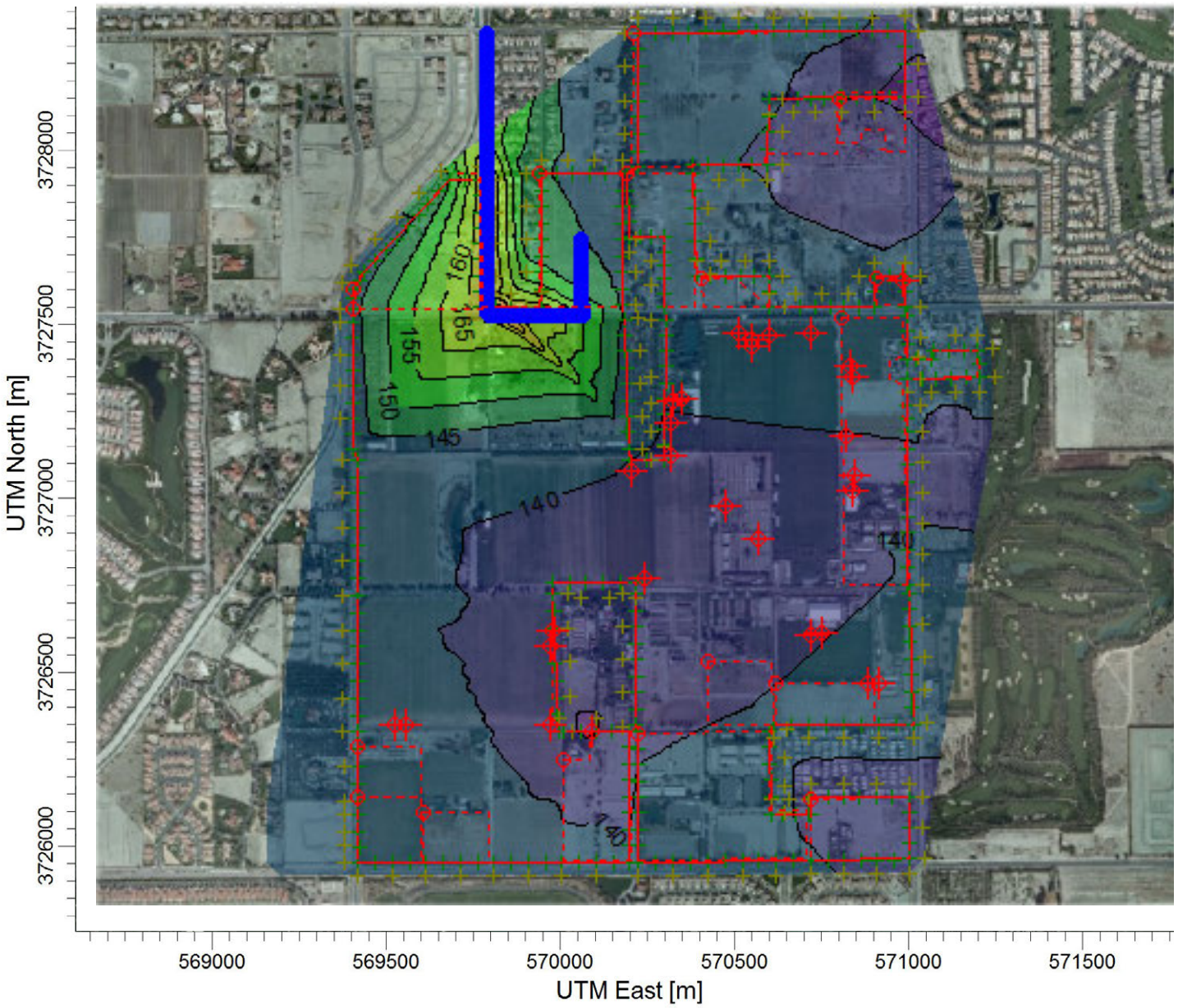
SOURCE: Coachella Music Festival, LLC / Goldenvoice, LLC. AERMOD View - Lakes Environmental Software

FIGURE **4**

Meridian Consultants

Performance Days
Maximum 24-Hour PM10 Concentrations

028-004-15



PLOT FILE OF HIGH 1ST HIGH 1-HR VALUES FOR SOURCE GROUP: ALL ug/m^3

Max: 178.1 [ug/m^3] at (569817.75, 3727544.25)

NOT TO SCALE

SOURCE: Coachella Music Festival, LLC / Goldenvoice, LLC. AERMOD View - Lakes Environmental Software

FIGURE **5**

Meridian Consultants

Performance Days
Maximum 1-Hour NO2 Concentrations

028-004-15

Table 7
Modified Project Regional Daily Mitigated Emissions

Highest Single-Day Emissions					
Pollutant	**Regional Travel Emissions (lb./day)**	**On-Site Emissions (lb./day)**	**Total Emissions (lb./day)**	**Operations Threshold (lb./day)**	**Exceed Threshold?**
NOx	573.9	1,412.9	1,986.8	55	**Yes**
VOC	228.9	7.0	235.8	55	**Yes**
PM_{10}	6.4	31.9	38.3	150	No
$PM_{2.5}$	6.0	24.9	30.9	55	No
CO	5,712.9	204.8	5,917.7	550	**Yes**
Lead	0.0	0.0	0.0	3	No

Source: SCAQMD, Air Quality Significance Thresholds, March 2015.

Maximum total daily emissions of NOx generated by the Modified Project would be 1,986.8 pounds on each of the three Performance days. Maximum total daily emissions of VOCs would be 235.8 pounds on the Setup and Breakdown days. Maximum total daily emissions of PM10 and PM2.5 would be 38.3 pounds and 30.9 pounds, respectively, on each of the Performance days. Maximum total daily emissions of CO from vehicular traffic and heavy equipment would be 5,917.7 pounds on the Setup and Breakdown days. As shown in **Table 6** and **Table 7**, no additional thresholds were exceeded when comparing the emissions from the Approved Project to the Modified Project. The Modified Project will not, therefore, result in any new significant impacts when compared to the Approved Project. In addition, the emissions estimated for the Modified Project would not substantially increase the amount of the emissions for those pollutants that will exceed SCAQMD thresholds. As shown in **Table 7**, the total emissions for all pollutants would be lower than under the Approved Project due to more stringent emission standards imposed by CARB.

3.0 GREENHOUSE GAS EMISSIONS

Emissions of GHGs generated by the Modified Project were evaluated as a combination of regional travel and localized on-site emissions. The predominant sources of GHGs in the California emission inventory—as evidenced by the data presented in **Table 8**, **California GHG Inventory 2004–2013**—are the transportation, electric power, and industrial sectors. The festivals are not within the industrial sector and do not rely on the power grid for electricity; therefore the primary sources of GHGs associated with the Modified Project will be from vehicular traffic and emissions from the generator units and heavy-duty off-road equipment. The GHG inventory has remained fairly consistent since 2009, the latest information contained in the Approved Report, with annual statewide emissions around 450 to 459 MMTCO2e.

Table 8
California GHG Inventory 2004–2013

Main Sector	Emissions MMTCO2e									
	2004	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Transportation[1]	186.68	188.76	188.84	188.96	177.77	171.19	170.27	168.00	167.36	169.02
Electricity	115.20	107.85	104.53	113.93	120.14	101.32	90.30	88.04	95.09	90.45
Commercial/Residential	43.80	42.25	42.94	43.15	43.47	43.70	44.88	45.40	42.88	43.54
Industrial[2]	98.02	96.01	94.13	90.81	91.36	88.79	92.12	91.97	92.52	92.68
Recycling & Waste	7.74	7.93	8.03	8.10	8.27	8.39	8.46	8.75	8.77	8.87
High GWP[3,4]	9.57	10.34	10.93	11.60	12.61	13.83	15.49	16.78	17.77	18.50
Agriculture & Forestry	34.34	35.08	36.30	36.04	36.48	34.86	34.50	35.68	36.43	36.21
Total Net Emissions	**495.34**	**488.23**	**485.69**	**492.60**	**490.10**	**462.07**	**456.02**	**454.61**	**460.82**	**459.28**

Source: CARB California Greenhouse Gas Inventory for 2000-2012 – by Category as Defined in the 2008 Scoping Plan, http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_2000-13_20150831.pdf
Notes:
[1] Includes equipment used in construction, mining, oil drilling, and industrial airport ground operations.
[2] Reflects emissions from combustion of natural gas, diesel, and lease fuel plus fugitive emissions.
[3] These categories are listed in the Industrial sector of ARB's GHG Emission Inventory sectors.
[4] This category is listed in the Electric Power sector of ARB's GHG Emission Inventory sectors.
MMTCO2e = million metric tons carbon dioxide equivalents.

A specific regulatory significance threshold value does not exist for GHG emissions under the jurisdiction of the SCAQMD.

The Final EIR evaluated the Approved Project's potential GHG emissions impacts pursuant to the Interim CEQA GHG Significance Threshold presented by the SCAQMD. Consistent with this methodology, the Modified Project will be evaluated pursuant to the Interim CEQA GHG Significance Threshold. Please note that the Approved Project and Modified Project are not permanent stationary source of emissions, and only permitted to occur over five weekends each year. The following provides an overview of the tiered approach of GHG significance analysis for projects under CEQA, as updated by the SCAQMD in September 2010:[11]

Tier 1: Does the project qualify for any applicable statuary or categorical exemption under CEQA? If yes, no further action is required and climate change impacts would be less than significant.

Tier 2: Is the project consistent with a GHG reduction plan? (The plan must be consistent with State CEQA Guidelines Sections 15064(h)(3), 15125(d), or 15152(s).) If yes, there is a presumption of less than significant impacts with respect to climate change.

Tier 3: Is the project's incremental increase in GHG emissions below or mitigated to less than the significance screening level (10,000 MTCO2e per year for industrial projects; 3,000 MTCO2e for residential projects/commercial projects)? If yes, there is a presumption of less than significant impacts with respect to climate change.

Tier 4: Does the project meet one of the following performance standards? If yes, there is a presumption of less than significant impacts with respect to climate change.

Option #1: Achieve some percentage reduction in GHG emissions from a base case scenario, including land use sector reductions from AB 32 (e.g., 16 percent reduction as recommended by the CARB Scoping Plan).

Option #2: For individual projects, achieve a project-level efficiency target of 4.8 MTCO2e per service population by 2020 or a target of 3.0 MTCO2e per service population by 2035. For plans, achieve a plan-level efficiency target of 6.6 MTCO2e per service population by 2020 or a target of 4.1 MTCO2e per service population by 2035.

Option #3: Early compliance with AB 32 through early implementation of CARB's Scoping Plan Measures. The intent of this option is to accelerate GHG emission reductions from the various sectors subject to CARB's Scoping Plan to eliminate GHG emission.

Tier 5: Projects should obtain GHG emission offsets to reduce significant impacts. Offsets in combination with any mitigation measures should achieve the target thresholds for any of the above Tiers. Otherwise, project impacts would remain significant.

11 http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-%28ghg%29-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-main-presentation.pdf?sfvrsn=2

The Approved Project GHG emissions were analyzed utilizing Tier 4, Option No. 2 in order to determine consistency with the SCAQMD Interim CEQA GHG Significance Threshold. The Approved Project was previously certified under CEQA; the analysis of GHG emissions in this report was prepared to demonstrate that the expansion of the festivals will not result in any new or substantially increased GHG impacts.

3.1 Methodology

The Approved Festival Site will increase by approximately 41.8 acres within the Approved Overlay Zone and will convert approximately 98 acres of approved uses within the Approved Overlay Zone. The increase in the Modified Festival Site and the change in uses would increase the Higher Attendance Festivals capacity by approximately 26 percent under the Modified Project in comparison to the Approved Project. As a conservative estimate to quantify maximum emissions from the Higher Attendance Festivals, the traffic volumes of passenger vehicles and motor coaches obtained from The Mobility Group were increased by 26 percent. Heavy-duty equipment inventories were adjusted accordingly for the Setup and Breakdown days, and generator units were added as appropriate for the Performance days. These modifications were accounted for in the GHG emissions calculations for the Modified Project, provided as **Appendix C, Greenhouse Gas Emissions**.

3.1.1 Data Resources

Two emission inventory tools were utilized to populate emissions of regional and on-site GHGs that will be generated by the Modified Project consistent with the analysis presented in the Approved Report.

- The CARB EMFAC2014 Web Database[12] was used to obtain emission factors for passenger vehicles (regional and local vehicular traffic) and motor coaches (shuttles and artist buses); this database does not contain methane (CH4) emission factors.
- The SCAQMD Off-road Mobile Source Emission Factors (Scenario Years 2007–2025) database[13] was utilized to quantify emissions from water trucks, generators, and heavy-duty equipment; emission factors for methane (CH4) were included for these sources.

Emissions of GHGs from passenger vehicles and heavy-duty off-road equipment usage were quantified using the emission factors provided in the EMFAC2014 Web Database and Off-road Mobile Source Emission Factors (Scenario Years 2007-2025) spreadsheet, respectively.

Emissions of GHGs calculated for the Approved Project utilized 2014 emissions factors provided in the EMFAC2011 Web Database and the 2012 fleet average in the Off-road Mobile Source Emission Factors.

12 http://www.arb.ca.gov/emfac/2014/

13 http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/off-road-mobile-source-emission-factors

3.1.2 Assumptions

The following assumptions identified in the Approved Project were made in preparing emissions of GHGs from the Modified Project:

- Two total trips to the Coachella Valley region would be made by camping vehicles and daily attendance vehicles (including staff and artist vehicles) on the Setup and Breakdown days.
- Six total local trips from overnight accommodations would be made by those attending the festival daily and not camping on the festival grounds (two trips each day for the Performance days).
- Regional VMTs calculated for the Approved Project were multiplied by a factor of 1.26 to represent the expansion of the Higher Attendance Festivals from 99,000 persons to 125,000 persons.[14]
- Shuttle counts calculated for the Approved Project were multiplied by a factor of 1.26 to represent the expansion of the Higher Attendance Festivals from 99,000 persons to 125,000 persons.[15]
- Emissions from a single Higher Attendance Festival weekend were multiplied by a factor of 4.5 to arrive at an approximation of annual GHG emissions.[16]
- It was assumed that the 8,000 staff and support personnel for the Approved Project would remain unchanged under the Modified Project.

Emissions of GHGs were estimated separately for the Setup and Breakdown days and the Performance days and then combined to determine total annual emissions. Emissions of GHGs associated with the Setup and Breakdown days were primarily generated by regional travel to Coachella Valley. Emissions of GHGs associated with the Performance days were primarily attributed to generator units and daily commutes to the festival locally.

Consistent with the Approved Technical Report, on-site sources of GHGs (i.e., on-site vehicle traffic, heavy equipment, generators, and on-site transportation services) accounted for approximately 24 percent of the total annual GHG emissions. Regional travel to the Coachella Valley and local daily commutes to the festival grounds accounted for approximately 76 percent of GHG emissions generated by the Modified Project.

3.2 Greenhouse Gas Emission Results

The greenhouse gas emissions identified in the Approved Technical Report are provided in **Table 9, Approved Project GHG Emissions.** As indicated in **Table 9**, the Approved Project would generate 8,204.2 MTCO2e per year, or approximately 1.1 MTCO2e per year per serviceperson.

14 Total vehicles increased by approximately 8,000 vehicles for the Modified Project.

15 Shuttles increased by approximately 195 shuttles for the Modified Project.

16 To provide consistency with the Approved Project, the GHG analysis was estimated by multiplying the GHG emissions from a single 125,000 event by a factor of 4.5 to account for the two smaller 85,000 person events and the three 125,000 person events.

Table 9
Approved Project GHG Emissions

	CO2 (MTCO2e/yr.)	CH4 (MTCO2e/yr.)	Total (MTCO2e/yr.)
Setup /Breakdown (Thursday, Monday)	42.65	0.023	42.67
Festival Operations (Friday, Saturday, Sunday)	2,243.52	2.86	2,246.38
Travel to and from the Future Festival Site	5,914.92	—	5,914.92
Total Emissions	**8,201.09**	**3.09**	**8,204.18**
Emissions per Serviceperson			1.1
SCAQMD Performance Standard			4.8
Exceed Performance Standard			**NO**

See Appendix 4.1 in the Final EIR for GHG emission calculations.

The greenhouse gas emissions generated by the Modified Project are provided in **Table 10, Modified Project GHG Emissions.** As indicated in **Table 10**, the Modified Project would generate 12,728.7 MTCO2e per year. The increase in the amount of GHG emissions is directly related to the increase in the number of generators onsite and the increase in the number of cars traveling and the total miles traveled to the Modified Festival Site. Dividing the total annual emissions of 12,728.7 MTCO2e by the service population of 8,000 yielded an emissions-per-service-population metric of 1.6, or an increase of 0.5 $MTCO_2E$ per service person when compared to the Approved Project. This value is below the applicable SCAQMD service population GHG thresholds for project-level analysis of 4.8 by 2020 and 3.0 by 3035.

Table 10
Modified Project GHG Emissions

	CO2 (MTCO2e/yr.)	CH4 (MTCO2e/yr.)	Total (MTCO2e/yr.)
Setup/Breakdown (Thursday, Monday)	886.1	1.4	887.5
Festival Operations (Friday, Saturday, Sunday)	6,023.2	3.5	6,026.7
Travel to and from the Future Festival Site	5,814.5	—	5,814.5
Total Emissions	**12,723.8**	**4.9**	**12,728.7**
Emissions per Serviceperson			1.6
SCAQMD Performance Standard			4.8
Exceed Performance Standard?			**NO**

*See **Appendix C** for GHG emission calculations.*

4.0 CONCLUSIONS

4.1 Air Quality

All emissions presented for both the Approved Project and the Modified Project incorporate festival plan features FPF AQ-1 through FPF AQ-7 and mitigation measures AQ-1 and MM AQ-2. As shown in **Table 5**, the maximum 1-hour NO2 concentration resulting from localized emissions during the Modified Higher Attendance Festival under the Modified Project was 179.43 ug/m3. The highest localized emission during a Higher Attendance Festival for the Approved Project was 221.43 ug/m3 for NO2 (1-hour). The lower modeled concentration under the Modified Project is attributed to CARB reducing the Tier 4 emissions standards since the Approved Technical Report was authored in 2012. The Modified Project would result in a concentration below the applicable SCAQMD LST of 339 ug/m3 and below the emissions generated during the Approved Project. Based on this analysis, emissions of NOx during the Higher Attendance Festival will not result in a significant air quality impact. Results of the air dispersion modeling analysis confirm that emissions of NOx will not result in a locally significant air quality impact.

Referring to **Table 5**, the maximum 24-hour PM10 concentration resulting from localized emissions during the Higher Attendance Festival under the Modified Project was 9.87 ug/m3. The highest localized emission during a Higher Attendance Festival for the Approved Project was 10.2 ug/m3 for PM10 (24-hour) and 9.4 ug/m3 for PM2.5 (24-hour). The lower modeled concentration under the Modified Project is attributed to CARB reducing the Tier 4 emissions standards since the Approved Technical Report was authored in 2012. The Modified Project would result in a concentration below the applicable SCAQMD LST of 10.4 ug/m3 and below the emissions generated by the Approved Project. Results of the air dispersion modeling analysis confirm that emissions of PM10 and PM2.5 will not result in a locally significant air quality impact.

The applicable AAQS threshold would not be exceeded at any sensitive-receptor location with implementation of mitigation measures identified in the design of the Approved Project. Localized impacts will remain less than significant with mitigation.

Table 7 presents results and significance determinations of the total daily emissions analysis for the Higher Attendance Festival under the Modified Project. Regional daily emissions of PM10 and PM2.5 would total 38.3 lb./day and 30.9 lb./day, respectively, and are below the SCAQMD regional daily thresholds. No lead emissions would occur with the Modified Project. Regional daily emissions of NOx total 1,986.8 lb./day, VOC total 235.8 lb./day, and CO total 5,917.7 lb./day; and all exceed their respective applicable SCAQMD mass daily thresholds.

As shown in **Table 6**, regional daily emissions generated by the Approved Project totaled 41.0 lb./day of PM10 and 37.6 lb./day of PM2.5, and were below the SCAQMD regional daily thresholds. No lead

emissions would occur with the Approved Project. Regional daily emissions generated by the Approved Project totaled 2,160.1 lb./day of NOx, 332.3 lb./day of VOC, and 6,949.3 lb./day of CO; and each of these compounds exceeded their respective applicable SCAQMD mass daily thresholds.

The Modified Project would incrementally reduce all emissions due to more stringent emission standards imposed by CARB; however, the Modified Project would continue to result in significant unavoidable regional impacts for NOx, VOCs, and CO. Emissions of NOx, VOCs, and CO generated by the Approved Project already exceeded the SCAQMD thresholds of significance. The Modified Project would not result in new significant impacts or substantial increases in the severity of previously identified impacts for any air pollutants.

4.2 Greenhouse Gases

Annual emissions of GHGs that will be generated by the Modified Project were analyzed under the SCAQMD Tier 4, Option 2 service population efficiency target. As shown in **Table 10**, total annual GHG emissions from the Modified Project were estimated to be 12,728.7 MTCO2e per year. When compared to the Approved Project, the Modified Project would increase GHG emissions by approximately 4,526.8 MTCO2e per year. With an estimated service population of 8,000 staff for the Modified Project, the GHG emissions per serviceperson were calculated to be 1.6 MTCO2e per serviceperson. When compared to the Approved Project, the Modified Project would increase the GHG emissions by approximately 0.5 MTCO2e per service person. The GHG emissions generated by the Modified Project would be increased when compared to the Approved Project; however, the per serviceperson value is substantially below the SCAQMD threshold of 4.8 MTCO2e per serviceperson by 2020 and 3.0 MTCO2e per serviceperson by 2035. Results of the analysis determined that GHG impacts would remain less than significant under the Modified Project and no additional mitigation is required.

APPENDIX A

Localized Emissions

Lot	Type	Model ID	Cars	
1a	DP	GAP1	2000	
1b	DP	GAP1	2400	
1c	DROPOFF		1000	
2a	DP	GAP2	2500	
2b	Shuttle		150 (shuttles)	
3a	DP	SACP1	420 V/50 Bus	
3b	BUS	SACP2	16 bus (artist)	
3c	CP	SACP3	90	
4	CC	CAMP1	1850	
5	SC	CAMP2	770	
6a	IPD	SACP6	200	
6b	RV	SACP6	150 RV	
6c	BBC	SACP6	400	
6d	DP/Staff	SACP6	200	Lot 6 Total (cars)
6e	DP/Staff	SACP6	100	900
6l	DP/Staff	SACP5	100 cars (16 sanitation trucks)	
7	CC	CAMP3	1725	
LED	TC	CAMP3	250 tent/100 TIPI (assume 350 cars)	
8	CC	CAMP4	3800	
9	BBC			
10a	CC	CAMP5	4200	
10b	Boneyard			
11a	Storage			
11b	DP	SACP8	1400	
12a	SEC	CAMP6	80	
12b	DP	SACP9	1000	
12c	Employee	SACP9	200	
12d	TC (Art)	SACP9	500	
13a	DROPOFF	GAP3	400	
13b	STAFF	SACP11	400	
14a	DP	GAP4	300	
14b	DP	GAP4	300	
14c	DP	GAP4	150	
14d	DP	GAP4	500	Lot 14 Total
14e	DP	GAP4	500	1750
15a	DP	GAP5	700	
15b	DP	GAP5	275	
15c	DP	GAP5	375	Lot 15 Total
15d	DP	GAP5	1275	2625
16	DP	GAP6	1575	

EMFAC2014 (v1.0.7) Emission Rates
Region Type: Sub-Area
Region: Riverside (SC)
Calendar Year: 2016
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	% VMT	g/mile NOx_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
Riverside (SC)	2016	LDA	Aggregated	5	GAS	34055.9248	0.695116062	0.152474569	0.142291725	0.199356242	1.972408075	1036.709869	0.010617522	0.009771508
Riverside (SC)	2016	LDA	Aggregated	5	DSL	282.9999142	0.005776316	0.24379862	0.244540993	0.278393663	3.202813663	750.2819713	0.066440915	0.063566711
Riverside (SC)	2016	LDT1	Aggregated	5	GAS	2862.299996	0.058422454	0.466225326	0.395794936	0.545737131	5.863458182	1199.283904	0.022127524	0.020381197
Riverside (SC)	2016	LDT1	Aggregated	5	DSL	2.130224646	4.34801E-05	0.867903659	0.895112521	1.019026094	3.862485245	960.6351838	0.655580211	0.627220101
Riverside (SC)	2016	LDT2	Aggregated	5	GAS	11774.04879	0.240320311	0.266553482	0.179270978	0.253199606	2.576078133	1379.696665	0.010636885	0.009789561
Riverside (SC)	2016	LDT2	Aggregated	5	DSL	15.74527203	0.000321377	0.168855783	0.263760774	0.300274105	2.02108495	919.0841703	0.025498715	0.024395652
							composite	0.198784026	0.166651264	0.233056935	2.352011983	1126.938928	0.011649897	0.010737975

EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Riverside
Calendar Year: 2016
EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Riverside
Calendar Year: 2016
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	NOx_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
Riverside	2016	Motor Coach	Aggregated	5	DSL	9.78448566	22.23277754	2.328634286	2.650972876	5.148117818	3488.709638	0.218860617	0.209392803
Riverside	2016	Motor Coach	Aggregated	10	DSL	4.582066728	18.58976101	1.816449191	2.067889134	4.203248015	3116.317366	0.185727858	0.177693353
Riverside	2016	Motor Coach	Aggregated	20	DSL	30.96560199	10.64793583	0.659188433	0.750435853	2.067576698	2264.356111	0.098156166	0.093909973
Riverside	2016	Motor Coach	Aggregated	25	DSL	158.9631044	9.295590033	0.481692939	0.548370743	1.568903687	2063.145171	0.082621665	0.079047489
Riverside	2016	Motor Coach	Aggregated	30	DSL	347.8971456	8.535790921	0.367570693	0.418451254	1.226791463	1932.254442	0.073641231	0.070455544
Riverside	2016	Motor Coach	Aggregated	35	DSL	433.1557954	7.989408554	0.282048109	0.321090302	0.969996916	1828.756344	0.067739362	0.064808987

EMFAC2014 (v1.0.7) Emission Rates
Region Type: Sub-Area
Region: Riverside (SC)
Calendar Year: 2016
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	%	NOx_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
Riverside (SC)	2016	MH	Aggregated	5	GAS	108.8842549	0.791294759	1.23140916	1.023858593	1.391527873	17.28271788	3948.828909	0.014231644	0.013154973
Riverside (SC)	2016	MH	Aggregated	5	DSL	28.718394	0.208705241	17.41006033	1.185737753	1.349883598	2.450503781	2112.626275	0.464397394	0.444307768
							composite	4.607978452	1.057643622	1.382836494	14.18715706	3565.603796	0.108183595	0.103138821

SCAB Fleet Average Emission Factors (Diesel)

2016

Air Basin	SC

Default Heavy Duty Equipment Emission Factors from CARB OFFROAD2007 Database

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Aerial Lifts	15	0.0101	0.0528	0.0631	0.0001	0.0025	8.7	0.0009
	25	0.0150	0.0479	0.0887	0.0001	0.0043	11.0	0.0014
	50	0.0430	0.1592	0.1637	0.0003	0.0116	19.6	0.0039
	120	0.0413	0.2355	0.3021	0.0004	0.0219	38.1	0.0037
	500	0.0951	0.4103	1.1062	0.0021	0.0331	213	0.0086
	750	0.1771	0.7417	2.0748	0.0039	0.0611	385	0.0160
Aerial Lifts Composite		0.0397	0.1800	0.2482	0.0004	0.0150	34.7	0.0036
Air Compressors	15	0.0104	0.0461	0.0642	0.0001	0.0037	7.2	0.0009
	25	0.0219	0.0665	0.1224	0.0002	0.0066	14.4	0.0020
	50	0.0667	0.2281	0.1982	0.0003	0.0165	22.3	0.0060
	120	0.0624	0.3150	0.3994	0.0006	0.0333	47.0	0.0056
	175	0.0824	0.5006	0.6378	0.0010	0.0346	88.5	0.0074
	250	0.0838	0.2741	0.8308	0.0015	0.0257	131	0.0076
	500	0.1387	0.4734	1.2719	0.0023	0.0422	232	0.0125
	750	0.2164	0.7315	2.0431	0.0036	0.0668	358	0.0195
	1000	0.3315	1.1175	4.1882	0.0049	0.1137	486	0.0299
Air Compressors Composite		0.0704	0.3207	0.4729	0.0007	0.0318	63.6	0.0064
Bore/Drill Rigs	15	0.0120	0.0632	0.0754	0.0002	0.0029	10.3	0.0011
	25	0.0193	0.0658	0.1219	0.0002	0.0046	16.0	0.0017
	50	0.0220	0.2223	0.2106	0.0004	0.0058	31.0	0.0020
	120	0.0349	0.4671	0.3308	0.0009	0.0125	77.1	0.0031
	175	0.0566	0.7540	0.4376	0.0016	0.0156	141	0.0051
	250	0.0628	0.3425	0.3887	0.0021	0.0114	188	0.0057
	500	0.1033	0.5511	0.6252	0.0031	0.0186	311	0.0093
	750	0.2045	1.0889	1.2440	0.0062	0.0369	615	0.0185
	1000	0.3273	1.6484	4.6465	0.0093	0.1011	928	0.0295
Bore/Drill Rigs Composite		0.0623	0.5016	0.5340	0.0017	0.0160	165	0.0056
Cement and Mortar Mixers	15	0.0074	0.0386	0.0462	0.0001	0.0019	6.3	0.0007
	25	0.0243	0.0771	0.1432	0.0002	0.0070	17.6	0.0022
Cement and Mortar Mixers Composite		0.0088	0.0418	0.0542	0.0001	0.0023	7.2	0.0008
Concrete/Industrial Saws	25	0.0199	0.0678	0.1256	0.0002	0.0047	16.5	0.0018
	50	0.0703	0.2673	0.2562	0.0004	0.0186	30.2	0.0063
	120	0.0809	0.4724	0.5783	0.0009	0.0436	74.1	0.0073
	175	0.1226	0.8668	1.0454	0.0018	0.0525	160	0.0111
Concrete/Industrial Saws Composite		0.0756	0.3936	0.4589	0.0007	0.0336	58.5	0.0068

Default Heavy Duty Equipment Emission Factors from CARB OFFROAD2007 Database

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Cranes	50	0.0779	0.2655	0.2159	0.0003	0.0185	23.2	0.0070
	120	0.0744	0.3533	0.4476	0.0006	0.0378	50.1	0.0067
	175	0.0862	0.4783	0.6099	0.0009	0.0346	80.3	0.0078
	250	0.0875	0.2634	0.7534	0.0013	0.0259	112	0.0079
	500	0.1325	0.4431	1.0723	0.0018	0.0387	180	0.0120
	750	0.2244	0.7448	1.8635	0.0030	0.0663	303	0.0202
	9999	0.8246	2.7017	8.7644	0.0098	0.2555	971	0.0744
Cranes Composite		0.1137	0.4263	0.9387	0.0014	0.0388	129	0.0103
Crawler Tractors	50	0.0944	0.3015	0.2386	0.0003	0.0215	24.9	0.0085
	120	0.1073	0.4739	0.6379	0.0008	0.0533	65.8	0.0097
	175	0.1427	0.7361	1.0097	0.0014	0.0567	121	0.0129
	250	0.1496	0.4452	1.2431	0.0019	0.0468	166	0.0135
	500	0.2183	0.7903	1.7438	0.0025	0.0669	259	0.0197
	750	0.3930	1.4137	3.2045	0.0047	0.1213	465	0.0355
	1000	0.5970	2.2313	6.3308	0.0066	0.1930	658	0.0539
Crawler Tractors Composite		0.1335	0.5549	0.9315	0.0013	0.0546	114	0.0120
Crushing/Proc. Equipment	50	0.1234	0.4493	0.3877	0.0006	0.0310	44.0	0.0111
	120	0.1054	0.5594	0.6775	0.0010	0.0555	83.1	0.0095
	175	0.1513	0.9539	1.1428	0.0019	0.0620	167	0.0136
	250	0.1553	0.5071	1.4547	0.0028	0.0453	245	0.0140
	500	0.2240	0.7541	1.9256	0.0037	0.0648	374	0.0202
	750	0.3524	1.1817	3.1408	0.0059	0.1031	589	0.0318
	9999	0.9152	2.9318	10.8280	0.0131	0.2940	1,308	0.0826
Crushing/Proc. Equipment Composite		0.1337	0.6461	0.8965	0.0015	0.0538	132	0.0121
Dumpers/Tenders	25	0.0093	0.0314	0.0587	0.0001	0.0024	7.6	0.0008
Dumpers/Tenders Composite		0.0093	0.0314	0.0587	0.0001	0.0024	7.6	0.0008
Excavators	25	0.0198	0.0677	0.1253	0.0002	0.0047	16.4	0.0018
	50	0.0581	0.2621	0.2166	0.0003	0.0147	25.0	0.0052
	120	0.0833	0.5070	0.5292	0.0009	0.0395	73.6	0.0075
	175	0.0972	0.6648	0.6563	0.0013	0.0355	112	0.0088
	250	0.1054	0.3389	0.7862	0.0018	0.0263	159	0.0095
	500	0.1496	0.4851	1.0236	0.0023	0.0366	234	0.0135
	750	0.2493	0.8037	1.7546	0.0039	0.0618	387	0.0225
Excavators Composite		0.0988	0.5213	0.6603	0.0013	0.0332	120	0.0089
Forklifts	50	0.0284	0.1489	0.1276	0.0002	0.0080	14.7	0.0026
	120	0.0313	0.2133	0.2116	0.0004	0.0149	31.2	0.0028
	175	0.0454	0.3320	0.3050	0.0006	0.0167	56.1	0.0041
	250	0.0493	0.1572	0.3531	0.0009	0.0118	77.1	0.0044
	500	0.0693	0.2150	0.4532	0.0011	0.0165	111	0.0062
Forklifts Composite		0.0427	0.2190	0.2816	0.0006	0.0137	54.4	0.0039

Default Heavy Duty Equipment Emission Factors from CARB OFFROAD2007 Database

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Generator Sets	15	0.0130	0.0652	0.0899	0.0002	0.0048	10.2	0.0012
	25	0.0241	0.0811	0.1494	0.0002	0.0076	17.6	0.0022
	50	0.0630	0.2393	0.2532	0.0004	0.0174	30.6	0.0057
	120	0.0814	0.4767	0.6102	0.0009	0.0431	77.9	0.0073
	175	0.1006	0.7336	0.9416	0.0016	0.0432	142	0.0091
	250	0.1003	0.4059	1.2339	0.0024	0.0342	213	0.0091
	500	0.1437	0.6411	1.7299	0.0033	0.0509	337	0.0130
	750	0.2399	1.0349	2.8965	0.0055	0.0840	544	0.0216
	9999	0.6052	2.2398	8.4480	0.0105	0.2114	1,049	0.0546
Generator Sets Composite		0.0581	0.2862	0.4370	0.0007	0.0241	61.0	0.0052
Graders	50	0.0816	0.3003	0.2476	0.0004	0.0196	27.5	0.0074
	120	0.1002	0.5196	0.6220	0.0009	0.0499	75.0	0.0090
	175	0.1215	0.7310	0.8624	0.0014	0.0476	124	0.0110
	250	0.1250	0.3936	1.0444	0.0019	0.0359	172	0.0113
	500	0.1579	0.5525	1.2394	0.0023	0.0446	229	0.0142
	750	0.3362	1.1682	2.7050	0.0049	0.0960	486	0.0303
Graders Composite		0.1197	0.5883	0.8866	0.0015	0.0441	133	0.0108
Off-Highway Tractors	120	0.1806	0.6988	1.0550	0.0011	0.0892	93.7	0.0163
	175	0.1782	0.8166	1.2825	0.0015	0.0723	130	0.0161
	250	0.1415	0.4155	1.1803	0.0015	0.0482	130	0.0128
	750	0.5701	2.3586	4.7515	0.0057	0.1903	568	0.0514
	1000	0.8608	3.6939	8.8128	0.0082	0.2875	814	0.0777
Off-Highway Tractors Composite		0.1803	0.7067	1.4108	0.0017	0.0670	151	0.0163
Off-Highway Trucks	175	0.1164	0.7552	0.7647	0.0014	0.0417	125	0.0105
	250	0.1179	0.3651	0.8678	0.0019	0.0290	167	0.0106
	500	0.1855	0.5796	1.2524	0.0027	0.0448	272	0.0167
	750	0.3026	0.9397	2.1025	0.0044	0.0741	442	0.0273
	1000	0.4576	1.4117	4.8929	0.0063	0.1360	625	0.0413
Off-Highway Trucks Composite		0.1816	0.5831	1.3322	0.0027	0.0459	260	0.0164
Other Construction Equipment	15	0.0118	0.0617	0.0737	0.0002	0.0029	10.1	0.0011
	25	0.0159	0.0544	0.1008	0.0002	0.0038	13.2	0.0014
	50	0.0530	0.2447	0.2274	0.0004	0.0143	28.0	0.0048
	120	0.0747	0.5170	0.5495	0.0009	0.0384	80.9	0.0067
	175	0.0729	0.5862	0.5856	0.0012	0.0291	107	0.0066
	500	0.1243	0.4868	1.0415	0.0025	0.0350	254	0.0112
Other Construction Equipment Composite		0.0720	0.3602	0.5680	0.0013	0.0234	123	0.0065
Other General Industrial Equipı	15	0.0066	0.0391	0.0466	0.0001	0.0018	6.4	0.0006
	25	0.0185	0.0632	0.1170	0.0002	0.0044	15.3	0.0017
	50	0.0700	0.2449	0.2003	0.0003	0.0171	21.7	0.0063
	120	0.0895	0.4343	0.5394	0.0007	0.0461	62.0	0.0081
	175	0.0993	0.5671	0.7059	0.0011	0.0398	95.9	0.0090
	250	0.0990	0.2950	0.8757	0.0015	0.0279	136	0.0089
	500	0.1832	0.5599	1.4849	0.0026	0.0511	265	0.0165
	750	0.3043	0.9228	2.5436	0.0044	0.0861	437	0.0275
	1000	0.4283	1.3244	4.9259	0.0056	0.1385	560	0.0386
Other General Industrial Equipmen Composit		0.1267	0.4731	1.0122	0.0016	0.0425	152	0.0114

Default Heavy Duty Equipment Emission Factors from CARB OFFROAD2007 Database

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Other Material Handling Equipr	50	0.0970	0.3384	0.2785	0.0004	0.0237	30.3	0.0088
	120	0.0869	0.4228	0.5267	0.0007	0.0450	60.7	0.0078
	175	0.1251	0.7182	0.8969	0.0014	0.0504	122	0.0113
	250	0.1046	0.3141	0.9355	0.0016	0.0298	145	0.0094
	500	0.1305	0.4029	1.0706	0.0019	0.0367	192	0.0118
	9999	0.5874	1.7492	6.5148	0.0073	0.1827	741	0.0530
Other Material Handling Equipment Composit		0.1202	0.4608	0.9913	0.0015	0.0411	141	0.0108
Pavers	25	0.0230	0.0774	0.1448	0.0002	0.0061	18.7	0.0021
	50	0.1117	0.3339	0.2694	0.0004	0.0252	28.0	0.0101
	120	0.1164	0.4930	0.7030	0.0008	0.0591	69.2	0.0105
	175	0.1524	0.7678	1.1274	0.0014	0.0627	128	0.0138
	250	0.1758	0.5369	1.5485	0.0022	0.0587	194	0.0159
	500	0.1956	0.7646	1.6718	0.0023	0.0641	233	0.0177
Pavers Composite		0.1269	0.5135	0.7128	0.0009	0.0489	77.9	0.0114
Paving Equipment	25	0.0152	0.0520	0.0963	0.0002	0.0036	12.6	0.0014
	50	0.0953	0.2829	0.2297	0.0003	0.0216	23.9	0.0086
	120	0.0912	0.3862	0.5522	0.0006	0.0468	54.5	0.0082
	175	0.1188	0.6004	0.8857	0.0011	0.0492	101	0.0107
	250	0.1077	0.3302	0.9703	0.0014	0.0360	122	0.0097
Paving Equipment Composite		0.0965	0.4198	0.6393	0.0008	0.0436	68.9	0.0087
Plate Compactors	15	0.0050	0.0263	0.0314	0.0001	0.0012	4.3	0.0005
Plate Compactors Composite		0.0050	0.0263	0.0314	0.0001	0.0012	4.3	0.0005
Pressure Washers	15	0.0062	0.0312	0.0431	0.0001	0.0023	4.9	0.0006
	25	0.0098	0.0329	0.0606	0.0001	0.0031	7.1	0.0009
	50	0.0222	0.0943	0.1139	0.0002	0.0069	14.3	0.0020
	120	0.0217	0.1404	0.1798	0.0003	0.0114	24.1	0.0020
Pressure Washers Composite		0.0121	0.0579	0.0764	0.0001	0.0044	9.4	0.0011
Pumps	15	0.0106	0.0474	0.0660	0.0001	0.0038	7.4	0.0010
	25	0.0296	0.0897	0.1651	0.0002	0.0088	19.5	0.0027
	50	0.0765	0.2823	0.2874	0.0004	0.0206	34.3	0.0069
	120	0.0851	0.4842	0.6196	0.0009	0.0453	77.9	0.0077
	175	0.1044	0.7350	0.9440	0.0016	0.0448	140	0.0094
	250	0.1005	0.3911	1.1887	0.0023	0.0338	201	0.0091
	500	0.1566	0.6672	1.7955	0.0034	0.0542	345	0.0141
	750	0.2663	1.1031	3.0795	0.0057	0.0916	571	0.0240
	9999	0.8096	2.9411	11.0444	0.0136	0.2798	1,355	0.0730
Pumps Composite		0.0562	0.2785	0.3830	0.0006	0.0239	49.6	0.0051
Rollers	15	0.0074	0.0386	0.0461	0.0001	0.0018	6.3	0.0007
	25	0.0161	0.0549	0.1017	0.0002	0.0039	13.3	0.0015
	50	0.0798	0.2680	0.2323	0.0003	0.0191	26.0	0.0072
	120	0.0795	0.3971	0.5112	0.0007	0.0416	59.0	0.0072
	175	0.1033	0.6152	0.7968	0.0012	0.0431	108	0.0093
	250	0.1042	0.3463	0.9961	0.0017	0.0333	153	0.0094
	500	0.1391	0.5319	1.2666	0.0022	0.0442	219	0.0126
Rollers Composite		0.0792	0.3944	0.5273	0.0008	0.0353	67.0	0.0071

Default Heavy Duty Equipment Emission Factors from CARB OFFROAD2007 Database

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Rough Terrain Forklifts	50	0.0840	0.3459	0.2954	0.0004	0.0216	33.9	0.0076
	120	0.0729	0.4231	0.4742	0.0007	0.0369	62.4	0.0066
	175	0.1081	0.7236	0.7797	0.0014	0.0423	125	0.0098
	250	0.1107	0.3592	0.9207	0.0019	0.0302	171	0.0100
	500	0.1590	0.5205	1.2089	0.0025	0.0428	257	0.0143
Rough Terrain Forklifts Composite		0.0775	0.4549	0.5104	0.0008	0.0372	70.3	0.0070
Rubber Tired Dozers	175	0.1852	0.8280	1.3073	0.0015	0.0740	129	0.0167
	250	0.2099	0.6066	1.7084	0.0021	0.0707	183	0.0189
	500	0.2794	1.1678	2.2384	0.0026	0.0915	265	0.0252
	750	0.4216	1.7523	3.4334	0.0040	0.1388	399	0.0380
	1000	0.6575	2.8291	6.5404	0.0060	0.2169	592	0.0593
Rubber Tired Dozers Composite		0.2591	0.9834	2.0891	0.0025	0.0858	239	0.0234
Rubber Tired Loaders	25	0.0204	0.0697	0.1291	0.0002	0.0048	16.9	0.0018
	50	0.0901	0.3349	0.2783	0.0004	0.0218	31.1	0.0081
	120	0.0773	0.4063	0.4828	0.0007	0.0387	58.9	0.0070
	175	0.1022	0.6242	0.7295	0.0012	0.0402	106	0.0092
	250	0.1056	0.3357	0.8897	0.0017	0.0302	149	0.0095
	500	0.1592	0.5594	1.2576	0.0023	0.0449	237	0.0144
	750	0.3283	1.1450	2.6587	0.0049	0.0937	486	0.0296
	1000	0.4397	1.5570	4.9948	0.0060	0.1424	594	0.0397
Rubber Tired Loaders Composite		0.0983	0.4557	0.7114	0.0012	0.0375	109	0.0089
Scrapers	120	0.1566	0.6775	0.9295	0.0011	0.0781	93.9	0.0141
	175	0.1771	0.9000	1.2619	0.0017	0.0709	148	0.0160
	250	0.1911	0.5689	1.6086	0.0024	0.0607	209	0.0172
	500	0.2736	1.0107	2.2183	0.0032	0.0851	321	0.0247
	750	0.4747	1.7423	3.9270	0.0056	0.1488	555	0.0428
Scrapers Composite		0.2383	0.9053	1.9017	0.0027	0.0783	262	0.0215
Signal Boards	15	0.0072	0.0377	0.0450	0.0001	0.0018	6.2	0.0006
	50	0.0832	0.3134	0.3032	0.0005	0.0219	36.2	0.0075
	120	0.0873	0.5072	0.6231	0.0009	0.0466	80.2	0.0079
	175	0.1169	0.8288	1.0085	0.0017	0.0498	155	0.0106
	250	0.1318	0.4998	1.4477	0.0029	0.0424	255	0.0119
Signal Boards Composite		0.0161	0.0921	0.1172	0.0002	0.0060	16.7	0.0014
Skid Steer Loaders	25	0.0184	0.0594	0.1107	0.0002	0.0053	13.8	0.0017
	50	0.0323	0.2089	0.1953	0.0003	0.0094	25.5	0.0029
	120	0.0295	0.2695	0.2411	0.0005	0.0138	42.8	0.0027
Skid Steer Loaders Composite		0.0305	0.2184	0.2044	0.0004	0.0106	30.3	0.0028
Surfacing Equipment	50	0.0376	0.1300	0.1219	0.0002	0.0093	14.1	0.0034
	120	0.0779	0.4123	0.5363	0.0007	0.0403	63.8	0.0070
	175	0.0734	0.4695	0.6130	0.0010	0.0308	85.8	0.0066
	250	0.0833	0.3013	0.8507	0.0015	0.0280	135	0.0075
	500	0.1260	0.5485	1.2555	0.0022	0.0425	221	0.0114
	750	0.2006	0.8594	2.0266	0.0035	0.0677	347	0.0181
Surfacing Equipment Composite		0.1045	0.4506	0.9731	0.0017	0.0353	166	0.0094

Default Heavy Duty Equipment Emission Factors from CARB OFFROAD2007 Database

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Sweepers/Scrubbers	15	0.0124	0.0729	0.0870	0.0002	0.0034	11.9	0.0011
	25	0.0237	0.0808	0.1495	0.0002	0.0056	19.6	0.0021
	50	0.0662	0.3084	0.2720	0.0004	0.0182	31.6	0.0060
	120	0.0774	0.5017	0.5324	0.0009	0.0392	75.0	0.0070
	175	0.1100	0.8005	0.7999	0.0016	0.0429	139	0.0099
	250	0.0979	0.3255	0.7954	0.0018	0.0258	162	0.0088
Sweepers/Scrubbers Composite		0.0810	0.4988	0.5192	0.0009	0.0332	78.5	0.0073
Tractors/Loaders/Backhoes	25	0.0192	0.0653	0.1216	0.0002	0.0048	15.9	0.0017
	50	0.0623	0.2949	0.2536	0.0004	0.0162	30.3	0.0056
	120	0.0524	0.3460	0.3526	0.0006	0.0253	51.7	0.0047
	175	0.0788	0.5850	0.5574	0.0011	0.0293	101	0.0071
	250	0.1025	0.3534	0.7914	0.0019	0.0260	172	0.0092
	500	0.1985	0.6964	1.4092	0.0039	0.0496	345	0.0179
	750	0.2995	1.0443	2.1837	0.0058	0.0758	517	0.0270
Tractors/Loaders/Backhoes Composite		0.0610	0.3689	0.4070	0.0008	0.0258	66.8	0.0055
Trenchers	15	0.0099	0.0517	0.0617	0.0001	0.0024	8.5	0.0009
	25	0.0397	0.1355	0.2509	0.0004	0.0094	32.9	0.0036
	50	0.1305	0.3813	0.3141	0.0004	0.0293	32.9	0.0118
	120	0.1080	0.4563	0.6653	0.0008	0.0551	64.9	0.0097
	175	0.1678	0.8496	1.2809	0.0016	0.0700	144	0.0151
	250	0.1991	0.6260	1.8052	0.0025	0.0691	223	0.0180
	500	0.2560	1.0680	2.2757	0.0031	0.0874	311	0.0231
	750	0.4852	2.0082	4.3873	0.0059	0.1665	587	0.0438
Trenchers Composite		0.1200	0.4479	0.5719	0.0007	0.0453	58.7	0.0108
Welders	15	0.0089	0.0396	0.0551	0.0001	0.0032	6.2	0.0008
	25	0.0171	0.0519	0.0956	0.0001	0.0051	11.3	0.0015
	50	0.0717	0.2483	0.2262	0.0003	0.0181	26.0	0.0065
	120	0.0494	0.2581	0.3291	0.0005	0.0265	39.5	0.0045
	175	0.0852	0.5411	0.6939	0.0011	0.0362	98.2	0.0077
	250	0.0700	0.2427	0.7386	0.0013	0.0223	119	0.0063
	500	0.0912	0.3361	0.9056	0.0016	0.0292	168	0.0082
Welders Composite		0.0482	0.1951	0.2173	0.0003	0.0168	25.6	0.0044

CARB Tier 4 Interim Standards, Heavy-Duty Off-road Equipment (CalEEMod Appendix D)						
Low Hp	High HP	CO (g/bhp-hr)	Nox (g/bhp-hr)	PM10 (g/bhp-hr)	PM2.5 (g/bhp-hr)	ROG (g/bhp-hr)
25	49	4.1	4.55	0.128	0.128	0.12
50	74	3.7	2.74	0.112	0.112	0.12
75	119	3.7	2.14	0.008	0.008	0.11
120	174	3.7	2.15	0.008	0.008	0.06
175	299	2.6	1.29	0.008	0.008	0.08
300	599	2.6	1.29	0.008	0.008	0.08
600	750	2.6	1.29	0.008	0.008	0.08
751	2000	2.6	2.24	0.048	0.048	0.12

link to source: http://www.aqmd.gov/docs/default-source/caleemod/caleemod-appendixd.pdf?sfvrsn=2

Cars (from Lot Capacities)	Area (acres)	Area (sq mile)	Miles/car Square root of area	VMT # Cars x miles/car	Area (sq m)	**Composite EF (g/mi)** (from 2016EMFAC tab) 0.198784026 **NOx** AVG ER (g/s/m2) (VMT x Comp EF)/ (24*3600*Area)	0.166651264 **ROG** AVG ER (g/s/m2) (VMT x Comp EF)/ (24*3600*Area)	0.233056935 **TOG** AVG ER (g/s/m2) (VMT x Comp EF)/ (24*3600*Area)	2.352011983 **CO** AVG ER (g/s/m2) (VMT x Comp EF)/ (24*3600*Area)	1126.938928 **CO2** AVG ER (g/s/m2) (VMT x Comp EF)/ (24*3600*Area)	0.011649897 **PM10** AVG ER (g/s/m2) (VMT x Comp EF)/ (24*3600*Area)	0.010737975 **PM2.5** AVG ER (g/s/m2) (VMT x Comp EF)/ (24*3600*Area)
1850	34.282	0.054	0.231	428.166	138733.5	7.101E-09	5.953E-09	8.325E-09	8.402E-08	4.025E-05	4.161E-10	3.836E-10
770	12.973	0.020	0.142	109.629	52501.0	4.804E-09	4.028E-09	5.633E-09	5.684E-08	2.724E-05	2.816E-10	2.595E-10
2075	29.964	0.047	0.216	448.984	121262.0	8.519E-09	7.142E-09	9.987E-09	1.008E-07	4.829E-05	4.992E-10	4.602E-10
3800	37.492	0.059	0.242	919.733	151724.5	1.395E-08	1.169E-08	1.635E-08	1.650E-07	7.907E-05	8.174E-10	7.534E-10
4200	62.635	0.098	0.313	1313.919	253477.0	1.193E-08	9.998E-09	1.398E-08	1.411E-07	6.761E-05	6.989E-10	6.442E-10
80	11.063	0.017	0.131	10.518	44772.5	5.405E-10	4.531E-10	6.337E-10	6.395E-09	3.064E-06	3.168E-11	2.920E-11

(see Fugitive Dust tab for Calcs)

Fugitive Dust PM10 only modeled	PM10 (g/s/m2)
Lot 4	2.31E-08
Lot 5	1.56E-08
Lot 7	2.30E-08
Lot 8	4.54E-08
Lot 10a	3.88E-08
Lot 12a	1.76E-09

Running Emissions (g/s/m2)

						composite EF (g/mile)	0.198784026	0.166651264	0.233056935	2.352011983	1126.938928	0.011649897	0.010737975
Model ID	Desc.	Cars	Area (m2)	Area (sq mi)	Dist/car (mi)	VMT	**NOx_RUNEX g/(s*m2)**	**ROG_RUNEX g/(s*m2)**	**TOG_RUNEX g/(s*m2)**	**CO_RUNEX g/(s*m2)**	**CO2_RUNEX g/(s*m2)**	**PM10_RUNEX g/(s*m2)**	**PM2_5_RUNEX g/(s*m2)**
GAP1	Lot 1(a,b)	4400	182171	0.070336293	0.265209904	1166.92358	1.47377E-08	1.23554E-08	1.72787E-08	1.74377E-07	8.35506E-05	8.63717E-10	7.96108E-10
GAP2	Lot 2a	2500	92041.5	0.035537259	0.188513285	471.2832129	1.17806E-08	9.87627E-09	1.38117E-08	1.39388E-07	6.67859E-05	6.90409E-10	6.36366E-10
GAP3	Lot 13a	400	33954	0.013109653	0.114497391	45.79895634	3.10336E-09	2.60171E-09	3.63842E-09	3.6719E-08	1.75935E-05	1.81875E-10	1.67638E-10
GAP4	Lot 14(a,b,c,d,e)	1750	63877.5	0.024663127	0.157044985	274.8287243	9.89879E-09	8.29868E-09	1.16055E-08	1.17122E-07	5.61178E-05	5.80126E-10	5.34716E-10
GAP5	Lot 15(a,b,c,d,e)	2625	155619.5	0.060084749	0.245121906	643.4450045	9.51295E-09	7.97521E-09	1.11531E-08	1.12557E-07	5.39305E-05	5.57514E-10	5.13873E-10
GAP6	Lot 16	1575	49664	0.01917529	0.13847487	218.09792	1.01036E-08	8.47042E-09	1.18456E-08	1.19546E-07	5.72791E-05	5.92132E-10	5.45781E-10
LQ	La Quinta	800	30624	0.011823938	0.108737934	86.99034695	6.53547E-09	5.47903E-09	7.66227E-09	7.73277E-08	3.70506E-05	3.83017E-10	3.53035E-10

	Fugitive Dust	**PM10 (g/s*m2)**
GAP1	Lot 1(a,b)	4.79E-08
GAP2	Lot 2a	3.83E-08
GAP3	Lot 13a	1.01E-08
GAP4	Lot 14(a,b,c,d,e)	3.22E-08
GAP5	Lot 15(a,b,c,d,e)	3.09E-08
GAP6	Lot 16	3.28E-08
LQ	La Quinta	2.12E-08

Running Emissions (g/s/m2)

							RV EF	4.607978452	1.057643622	1.382836494	14.18715706	3565.603796	0.108183595	0.103138821
							composite EF (g/mile)	0.198784026	0.166651264	0.233056935	2.352011983	1126.938928	0.011649897	0.010737975
Model ID	**Desc.**	**Cars**	**RVs**	**Area (m2)**	**Area (sq mi)**	**Dist/car (mi)**	**VMT**	**NOx_RUNEX**	**ROG_RUNEX**	**TOG_RUNEX**	**CO_RUNEX**	**CO2_RUNEX**	**PM10_RUNEX**	**PM2_5_RUNEX**
SACP1	Lot 3a	420	50	51165	0.019754826	0.140551863	59.03178255	9.97987E-09	3.90675E-09	5.31047E-09	5.39615E-08	2.0717E-05	3.2755E-10	3.07352E-10
SACP2	Lot 3b		16	18973.5	0.007325676	0.085590161	1.369442577	3.8494E-09	8.83531E-10	1.15519E-09	1.18516E-08	2.97862E-06	9.03741E-11	8.61598E-11
SACP3	Lot 3c	90		7785.5	0.003005985	0.05482686	4.934417382	1.4582E-09	1.22249E-09	1.70961E-09	1.72534E-08	8.26677E-06	8.5459E-11	7.87695E-11
SACP5	Lot 6l	100		39805	0.015368726	0.123970665	12.39706654	7.16554E-10	6.00726E-10	8.40097E-10	8.47827E-09	4.06226E-06	4.19942E-11	3.8707E-11
SACP6	Lot 6(a,b,c,d,e)	900		140271	0.054158687	0.232720191	209.4481718	3.43539E-09	2.88007E-09	4.0277E-09	4.06476E-08	1.94758E-05	2.01334E-10	1.85574E-10
SACP8	Lot 11(a,b)	1400		131871.5	0.050915637	0.225644936	315.9029102	5.51151E-09	4.62059E-09	6.46176E-09	6.52121E-08	3.12456E-05	3.23006E-10	2.97722E-10
SACP9	Lot 12(b,c,d)	1700		74124	0.028619305	0.169172412	287.5931006	8.92663E-09	7.48367E-09	1.04657E-08	1.0562E-07	5.06065E-05	5.23152E-10	4.82201E-10
SACP11	Lot 13b	400		21753.5	0.008399035	0.091646248	36.65849915	3.87716E-09	3.25043E-09	4.54563E-09	4.58745E-08	2.19802E-05	2.27224E-10	2.09437E-10

Fugitive Dust	**PM10 (g/s/m2)**
Lot 3a	9.6579E-09
Lot 3b	1.5217E-09
Lot 3c	4.7410E-09
Lot 6l	2.3297E-09
Lot 6(a,b,c,d,e)	1.1169E-08
Lot 11(a,b)	1.7919E-08
Lot 12(b,c,d)	2.9023E-08
Lot 13b	1.2606E-08

EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Riverside
Calendar Year: 2016
EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Riverside
Calendar Year: 2016
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Trip Length (m)	Trip Length (mi)	Shuttles/Day	VMT (mi/day)
1296	0.805299067	2820	2270.943368

g/mile

Region	CalYr	VehClass	MdlYr	Speed	Fuel	NOx_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
Riverside	2016	Motor Coach	Aggregated	10	DSL	18.58976101	1.816449191	2.067889134	4.203248015	3116.317366	0.185727858	0.177693353

Line source

g/s

NOx_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
0.488614519	0.047743672	0.054352536	0.110478451	81.90949371	0.004881683	0.004670504

Fugitive Dust (PM10)

Shuttle Area (m2)	Shuttle Area (mi2)	distance	Fug Dust (lb/day)	g/s/m2
88031	0.033988803	0.184360525	0.740759417	4.41775E-08

						composite EF (g/mile)	0.198784026	0.166651264	0.233056935	2.352011983	1126.938928	0.011649897	0.010737975
Uber area (m2)	Uber Area (mi2)	distance/car	Fug Dust (lb/day)	Fug Dust (g/s/m2)	Ubers/Taxis	VMT	NOx_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
33821	0.013058301	0.114272924	0.366341395	5.68668E-08	2250	257.114079	1.74907E-08	1.46634E-08	2.05063E-08	2.0695E-07	9.91576E-05	1.02506E-09	9.44818E-10
						composite EF (g/mile)	0.198784026	0.166651264	0.233056935	2.352011983	1126.938928	0.011649897	0.010737975
Mad-50 area (m2)	Mad-50 area (sq mi)	distance/car	Fug Dust (lb/day)	Fug Dust (g/s/m2)	Cars	VMT	NOx_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
28952	0.011178378	0.105727851	0.150643203	2.73168E-08	1000	105.7278505	8.40192E-09	7.04378E-09	9.85052E-09	9.94115E-08	4.76319E-05	4.92401E-10	4.53857E-10

Higher Attendance Festival Setup/Breakdown Inventory

Item	In	Out	Days	quantity	HP*	load	HRS/DAY	Tier 4 Interim Emission Factor (g/bhp-hr) CO	NOX	PM10	PM2.5	ROG	Equipment Emissions (g/s) NOX	PM10
Boom Lifts	1-Apr	10-Apr	9	11	34	0.31	8	4.1	4.6	0.13	0.13	0.1	0.0488451	0.0013741
Fork Lifts	2-Apr	4-May	32	33	83	0.4	8	3.7	2.1	0.008	0.008	0.11	0.2170911	0.0008116
Scissors & Single Man Lifts	31-Mar	5-May	24	8	34	0.31	8	4.1	4.6	0.13	0.13	0.1	0.0355237	0.0009993
Compressor 175-195 CFm/w 60lb breaker & hose	31-Mar	5-May	35	5	78	0.74	8	3.7	2.1	0.008	0.008	0.11	0.0571856	0.0002138
Forklift - Straight Mast - Rough Terr - 5,000 (without glass if possible, 6' forks)	2-Apr	4-May	32	1	83	0.4	8	3.7	2.1	0.008	0.008	0.11	0.0065785	0.0000246
Forklift - Straight Mast - Rough Terr - 8000	2-Apr	4-May	32	1	83	0.4	8	3.7	2.1	0.008	0.008	0.11	0.0065785	0.0000246
Genie GTH-5519 Telehandler Compact Rough Terrain (Sample)	2-Apr	4-May	32	1	83	0.4	8	3.7	2.1	0.008	0.008	0.11	0.0065785	0.0000246
Boom 34' - 4WD - Telescopic - All Terrain	1-Apr	10-Apr	9	1	34	0.31	8	4.1	4.6	0.13	0.13	0.1	0.0044405	0.0001249
Water Truck 2000-3000 Gal	31-Mar	5-May	35	11	381	0.38	8	2.6	1.3	0.008	0.008	0.08	0.1902248	0.0011797
												Performance Area (sq m)	407376	407376
												Model emissoins (g/s/m2)	1.40668E-06	1.17267E-08

Generator Parameters				Meeting CARB Tier 4 Interim Engine Standards					Unit Emission Rates (g/s)					
bhp	load	hrs/day	quantity	CO	NOX	PM1 0	PM2.5	ROG	CO	NOX	PM1 0	PM2.5	ROG	TOG
1490	0.74	16	8	2.6	2.2	0.05	0.05	0.1	0.530881	0.457375	0.009801	0.009801	0.024502	0.108398
619	0.74	16	2	2.6	1.3	0.008	0.008	0.08	0.220547	0.109425	0.000679	0.000679	0.006786	0.018708
500	0.74	16	5	2.6	1.3	0.008	0.008	0.08	0.178148	0.088389	0.000548	0.000548	0.005481	0.012206
381	**0.38**	8	9	2.6	1.3	0.008	0.008	0.08	0.034854	0.017293	0.000107	0.000107	0.001072	0.000467
320	0.74	16	7	2.6	1.3	0.008	0.008	0.08	0.114015	0.056569	0.000351	0.000351	0.003508	0.005000
256	0.74	16	9	2.6	1.3	0.008	0.008	0.08	0.091212	0.045255	0.000281	0.000281	0.002807	0.003200
126	0.74	16	3	3.7	2.2	0.008	0.008	0.06	0.063887	0.037123	0.000138	0.000138	0.001036	0.001103
97.9	0.74	16	18	3.7	2.1	0.008	0.008	0.11	0.049639	0.028710	0.000107	0.000107	0.001476	0.000666
67.1	0.74	16	6	3.7	3	0.11	0.11	0.1	0.034022	0.025195	0.001030	0.001030	0.001103	0.000313
35.9	0.74	16	10	4.1	4.6	0.13	0.13	0.1	0.020170	0.022384	0.000630	0.000630	0.000590	0.000099
12	0.74	7	**200**	4.1	4.6	0.13	0.13	0.1	0.002950	0.003273	0.000092	0.000092	0.000086	0.000002

Water Trucks + <126 HP generators	1.702126404	0.033791161
ea of entire modified project site (sq m)	2822683.5	2822683.5
Emission rate for model (g/s/m2)	6.03017E-07	1.19713E-08

		Camping Lots (Thursday/Monday)						GA Day Parking Lots (Friday/Saturday/Sunday)							Staff Support and Artist Lots								Shuttles and Drop-off		
Parking lot Area	**sample/ lot**	**4**	**5**	**7**	**8**	**10A**	**12a**	**1**	**2a**	**13a**	**14**	**15**	**16**	**LQ**	**Lot 3a**	**Lot 3b**	**Lot 3c**	**Lot 6l**	**Lot 6(a,b,c,d,e)**	**Lot 11(a,b)**	**Lot 12(b,c,d)**	**Lot 13b**	**Shuttle**	**Uber/Taxi**	**Mad/50 Dropoff**
Overview																									
Source Category	Unpaved Roads																								
Source Description	Industrial unpaved road																								
Length, miles	2	0.231441	0.142375	0.216378	0.242035	0.312838	0.131479	0.26521	0.188513	0.114497	0.157045	0.245122	0.138475	0.108738	0.140551863	0.08559	0.054827	0.123971	0.232720191	0.2256449	0.169172412	0.091646	0.1843605	0.1142729	0.105727851
Location	Western US																								
Activity Data																									
Vehicles/day	2000	1850	770	1725	3800	4200	80	4400	2500	400	1750	2625	1575	800	470	16	90	100	900	1400	1700	400	2820	2250	1000
Wet days/yr	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Number of 8-hour workdays/yr	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of emission days/yr (workdays without rain)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Emission Factors																									
PM10 Emission Factor Equation (lb/VMT)	**$E = 1.5\ (s/12)^{0.9}\ (W/3)^{0.45}$**																								
Reference for PM10 EF Equation	**AP-42**																								
PM2.5/PM10 ratio	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Reference for PM2.5/PM10 Ratio	**MRI, 2006**																								
AP-42 Emission Factor Parameters																									
s--silt content (%)	15	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
W--vehicle weight (tons)	15	2	2	2	2	2	2	2	2	2	2	2	2	2	2	20	2	2	2	2	2	2	2	2	2
Control Methods and Efficiencies																									
Control Measure	Watering	Watering	Watering	Watering	Watering	Watering	Watering	Watering	Watering	Watering	Watering	Watering	Watering	Watering	Watering	Watering	Watering	Watering	Watering	Watering	Watering	Watering	Watering	Watering	Watering
Control Application/Frequency	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily
Economic Life of Control System (yr)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Control Efficiency	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%	55%
Reference	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2002	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001
Uncontrolled Emissions																									
PM10 (lbs/day)	41	1.356	0.347	1.182	2.912	4.160	0.033	3.695	1.492	0.145	0.870	2.037	0.691	0.275	0.209	0.012	0.016	0.039	0.663	1.000	0.911	0.116	1.646	0.814	0.335
PM2.5 (lbs/day)	4.1	0.1356	0.0347	0.1182	0.2912	0.4160	0.0033	0.3695	0.1492	0.0145	0.0870	0.2037	0.0691	0.0275	0.0209	0.0012	0.0016	0.0039	0.0663	0.1000	0.0911	0.0116	0.1646	0.0814	0.0335
Controlled Emissions																									
PM10 (lbs/day)	19	0.610	0.156	0.532	1.310	1.872	0.015	1.663	0.671	0.065	0.392	0.917	0.311	0.124	0.094	0.005	0.007	0.018	0.298	0.450	0.410	0.052	0.741	0.366	0.151
PM2.5 (lbs/day)	1.9	0.061	0.016	0.053	0.131	0.187	0.001	0.166	0.067	0.007	0.039	0.092	0.031	0.012	0.009	0.001	0.001	0.002	0.030	0.045	0.041	0.005	0.074	0.037	0.015

0.53042	0.281104
0.377027	0.17118
0.228995	0.109654
0.31409	0.247941
0.490244	0.46544
0.27695	0.45129
0.217476	0.338345
	0.183292

	Th/M	F/Sa/Su
	9.957	12.056
	0.996	1.233
	4.481	5.548
	0.448	0.555

Sources

MRI, 2006. Background Document for Revisions to Fine Fraction Ratios Used for AP-42 Fugitive Emission Factors, prepared for the WRAP by Midwest Research Institute, Project No. 110397, February 1.

MRI, April 2001. *Particulate Emission Measurements from Controlled Construction Activities,* EPA/600/R-01/031.

CARB, April 2002. California Air Resources Board. *Evaluation of Air Quality Performance Claims for Soil-Sement Dust Suppressant.*

Appendix B

Regional Emissions

LOCAL EMISSIONS

Setup and Breakdown Sources

Tier 4 Interim Heavy Equipment (see HeavyEquip Tab)

	Daily Emissions (lb/day)							Usage (Days)	Total Emissions (lbs)						
	CO	NOX	PM10	PM2.5	ROG	CO2	CH4		CO	NOX	PM10	PM2.5	ROG	CO2	CH4
Boom Lifts	8.38366843	9.30382716	0.261734039	0.26173404	0.245375661	1725.923001	0.34109266	9	75.45301587	83.7344444	2.35560635	2.35560635	2.20838095	15533.307	3.06983395
Fork Lifts	71.49417989	41.3506878	0.154582011	0.15458201	2.125502646	8243.376453	0.7455549	32	2287.813757	1323.22201	4.94662434	4.94662434	68.0160847	263788.046	23.8577567
Scissors & Single Man Lifts	6.097213404	6.76641975	0.190352028	0.19035203	0.178455026	1255.216728	0.24806739	24	146.3331217	162.394074	4.56844868	4.56844868	4.28292063	30125.2015	5.95361736
Compressor 175-195 CFm/w 60lb breaker & hose	15.06624339	8.71398942	0.032575661	0.03257566	0.447915344	1502.407311	0.18026254	35	527.3185185	304.98963	1.14014815	1.14014815	15.677037	52584.2559	6.30918891
Forklift - Straight Mast - Rough Terr - 5,000 (without glass if possible, 6' forks)	2.1664903	1.25305115	0.004684303	0.0046843	0.064409171	249.7992864	0.02259257	32	69.32768959	40.0976367	0.14989771	0.14989771	2.06109347	7993.57717	0.72296232
Forklift - Straight Mast - Rough Terr - 8000	2.1664903	1.25305115	0.004684303	0.0046843	0.064409171	249.7992864	0.02259257	32	69.32768959	40.0976367	0.14989771	0.14989771	2.06109347	7993.57717	0.72296232
Genie GTH-5519 Telehandler Compact Rough Terrain (Sample)	2.1664903	1.25305115	0.004684303	0.0046843	0.064409171	249.7992864	0.02259257	32	69.32768959	40.0976367	0.14989771	0.14989771	2.06109347	7993.57717	0.72296232
Boom 34' - 4WD - Telescopic - All Terrain	0.762151675	0.84580247	0.023794004	0.023794	0.022306878	156.902091	0.03100842	9	6.859365079	7.61222222	0.21414603	0.21414603	0.2007619	1412.11882	0.27907581
Water Truck 2000-3000 Gal	73.02835979	36.2333016	0.224702646	0.22470265	2.247026455	23965.37462	1.47316372	35	2555.992593	1268.16556	7.86459259	7.86459259	78.6459259	838788.112	51.5607303
	Daily Totals (lb/day)								April Festival Totals (lbs) (3 Higher Attendance Festivals)						
	181.3312875	**106.973182**	**0.901793298**	**0.9017933**	**5.459809524**	**37598.59806**	**3.08692735**	**Equipment Totals**	**5807.753439**	**3270.41085**	**21.5392593**	**21.5392593**	**175.214392**	**1226211.77**	**93.19909**

Annual Total Emissions (lbs)							
CO	NOX	PM10	PM2.5	ROG	TOG	CO2	CH4
9679.58907	**5450.68474**	**35.8987654**	**35.8987654**	**292.023986**	**0**	**2043686.29**	**155.331817**

Camping Lots (see CampingEmissions Tab)

	Daily Emissions (lb/day)							Usage (Days)	Festival Total Emissions (lbs)							
	CO	NOX	PM10	PM2.5	ROG	TOG	CO2	CH4	CO	NOX	PM10	PM2.5	ROG	TOG	CO2	CH4
Lot 4	2.22013305	0.18763807	0.621056826	0.0711419	0.157307013	0.219989272	1063.750686	2	4.440266099	0.37527614	1.24211365	0.14228381	0.31461403	0.43997854	2127.50137	0
Lot 5	0.568448487	0.04804333	0.159016962	0.01821535	0.040277286	0.05632661	272.3654189	2	1.136896974	0.09608665	0.31803392	0.03643071	0.08055457	0.11265322	544.730838	0
Lot 7	2.328075533	0.196761	0.543347726	0.06381033	0.164955253	0.230685112	1115.470059	2	4.656151065	0.393522	1.08669545	0.12762067	0.32991051	0.46137022	2230.94012	0
Lot 8	4.769008057	0.40306029	1.334075454	0.15281801	0.337906961	0.472553034	2285.014221	2	9.538016115	0.80612057	2.66815091	0.30563602	0.67581392	0.94510607	4570.02844	0
Lot 10a	6.812949453	0.57580724	1.905844702	0.21831403	0.482729961	0.675083777	3264.344782	2	13.62589906	1.15161449	3.8116894	0.43662807	0.96545992	1.35016755	6528.689566	0
Lot 12a	0.054539639	0.0046095	0.01525684	0.00174767	0.003864394	0.005404242	26.13202788	2	0.109079279	0.00921901	0.03051368	0.00349533	0.00772879	0.01080848	52.2640558	0
	Daily Totals (lb/day)								Single Higher Attendance Festival Totals (lbs) (20% of yearly total)							
	16.7531543	**1.41591943**	**4.57859851**	**0.5260473**	**1.187040867**	**1.660042046**	**8027.077195**	**Camping Totals**	**33.50630859**	**2.83183885**	**9.15719702**	**1.0520946**	**2.37408173**	**3.32008409**	**16054.1544**	**0**

Annual Total Emissions (lbs)							
CO	NOX	PM10	PM2.5	ROG	TOG	CO2	CH4
167.531543	**14.1591943**	**45.7859851**	**5.26047301**	**11.8704087**	**16.6004205**	**80270.772**	**0**

Festival Day Sources

Tier 4 Interim Generators

	Daily Emissions (lb/day)							Usage (Days)	Festival Total Emissions (lbs)							
	CO	NOX	PM10	PM2.5	ROG		CO2	CH4	CO	NOX	PM10	PM2.5	ROG		CO2	CH4
MQ power egc 1000c 1000kW	808.9622575	696.952099	14.93468783	14.9346878	37.33671958		134221.4512	6.98969922	3	2426.886772	2090.8563	44.8040635	44.8040635	112.010159		402664.353	20.9690977
Cat sq 400 c15	84.01805996	41.6858836	0.258517108	0.25851711	2.585171076		17401.27679	0.69252907	3	252.0541799	125.057651	0.77555132	0.77555132	7.755513223		52203.8304	2.0775872
cat standby 400ekw 500 kva 60 hz 1800 rpm 480volts	169.664903	84.1798942	0.522045855	0.52204586	5.220458554		26948.22016	1.03757752	3	508.994709	252.539683	1.56613757	1.56613757	15.66137571		80844.6605	3.11273255
Water Truck 2000-3000 Gal	59.75047619	29.6454286	0.183847619	0.18384762	1.83847619		24253.39815	0.93381976	3	179.2514286	88.9362857	0.55154286	0.55154286	5.515428571		72760.1944	2.80145929
MQ Power 1400 amp	152.0197531	75.4251852	0.467753086	0.46775309	4.677530864		37727.5063	1.45260852	3	456.0592593	226.275556	1.40325926	1.40325926	14.03259259		113182.519	4.35782557
mq power ultra-silent 120kw dca1Sousj	156.3631746	77.5801905	0.48111746	0.48111746	4.811174603		48506.79629	1.86763953	3	469.0895238	232.740571	1.44335238	1.44335238	14.43352381		145520.389	5.60291859
500 amp	36.50666667	21.2133333	0.078933333	0.07893333	0.592		6815.005982	0.43582468	3	109.52	63.64	0.2368	0.2368	1.776		20445.0179	1.30747403
mq power ultra-silent 56kw dca70usi	170.1906032	98.4345651	0.367979683	0.36797968	5.059720635		22449.43212	2.11467862	3	510.5718095	295.303695	1.10393905	1.10393905	15.1791619		67348.2964	6.34403587
dca45usi	38.88249735	28.7940656	1.176983704	1.1769837	1.261053968		7483.144039	0.70489287	3	116.6474921	86.3821968	3.53095111	3.53095111	3.7831619		22449.4321	2.11467862
mq power whisper watt 25kw dca25usi	38.41996473	42.6367901	1.199452557	1.19945256	1.124486772		4899.677837	0.90947681	3	115.2598942	127.91037	3.59835767	3.59835767	3.37346032		14699.0335	2.72843042
Light towers	112.3703704	124.703704	3.508148148	3.50814815	3.288888889		1.644309089	10.2796878	3	337.1111111	374.111111	10.5244444	10.5244444	9.86666667		4.93292727	30.8390633
	Daily Totals (lb/day)								Single Higher Attendance Festival Totals (lbs) (20% of yearly total)							
	1827.148727	**1321.25114**	**23.17946638**	**23.1794664**	**67.79568113**		**330707.5531**	**27.4184344**	**5481.44618**	**3963.75342**	**69.5383992**	**69.5383992**	**203.387043**		**992122.659**	**82.2553031**

Annual Total Emissions (lbs)							
CO	NOX	PM10	PM2.5	ROG	TOG	CO2	CH4
27407.2309	**19818.7671**	**347.691996**	**347.691996**	**1016.93522**	**0**	**4960613.3**	**411.276516**

General Admission Day Parking (see GADayEmission tab)

	Daily Emissions (lb/day)								Usage (Days)	Festival Total Emissions (lbs)								
	CO	NOX	PM10	PM2.5	ROG	TOG	CO2	CH4		CO	NOX	PM10	PM2.5	ROG	TOG	CO2	CH4	
Lot 1(a,b)	6.050745685	0.51138838	1.692626894	0.19388999	0.428724184	0.599558272	2899.143758		3	18.15223705	1.53416513	5.07788068	0.58166996	1.28617255	1.79867482	8697.43127	0	
Lot 2a	2.443703184	0.20653345	0.683598014	0.07830598	0.173148023	0.242142462	1170.871691		3	7.331109551	0.61960036	2.05079404	0.23491794	0.51944407	0.72642739	3512.61507	0	
Lot 13a	0.23747728	0.02007077	0.066431553	0.00760972	0.016826398	0.023531227	113.7844506		3	0.712431839	0.06021231	0.19929466	0.02282915	0.05047919	0.07059368	341.353352	0	
Lot 14(a,b,c,d,e)	1.42504509	0.12043995	0.398640064	0.04566412	0.10097124	0.141205335	682.7936245		3	4.27513527	0.36131984	1.19592019	0.13699236	0.30291372	0.42361601	2048.38087	0	
Lot 15(a,b,c,d,e)	3.336398503	0.28198101	0.933319318	0.10691149	0.236399743	0.330598149	1598.596173		3	10.00919551	0.84594304	2.79995795	0.32073448	0.70919923	0.99179445	4795.78852	0	
Lot 16	1.130883865	0.09557844	0.316351826	0.03623802	0.080128514	0.112057391	541.8497272		3	3.392651596	0.28673533	0.94905548	0.10871407	0.24038554	0.33617217	1625.54918	0	
																	0	
	Daily Totals (lb/day)									Single Higher Attendance Festival Totals (lbs) (20% of yearly total)								
	14.62425361	**1.23599201**	**4.090967668**	**0.46861932**	**1.036198102**	**1.449092837**	**7007.039423**	**0**		**43.87276082**	**3.70797602**	**12.272903**	**1.40585797**	**3.10859431**	**4.34727851**	**21021.1183**	**0**	

Annual Total Emissions (lbs)							
CO	NOX	PM10	PM2.5	ROG	TOG	CO2	CH4
219.363804	**18.5398801**	**61.364515**	**7.02928984**	**15.5429715**	**21.7363925**	**105105.591**	**0**

Staff & Artist Daily Parking (see StaffArtist tab)

	Daily Emissions (lb/day)								Usage (Days)	Festival Total Emissions (lbs)								
	CO	NOX	PM10	PM2.5	ROG	TOG	CO2	CH4		CO	NOX	PM10	PM2.5	ROG	TOG	CO2	CH4	
Lot 3a	0.745693553	0.16865205	0.098991035	0.01400557	0.054460096		0.073178551	257.143826	3	2.23708066	0.50595616	0.29697311	0.0420167	0.16338029	0.21953565	771.431478	0	
Lot 3b	0.084663567	0.02782047	0.010615524	0.00117269	0.006386116		0.008349714	21.52949582	3	0.2569907	0.0834704	0.01845744	0.00353807	0.01915849	0.02504914	64.5884875	0	
Lot 3c	0.025585998	0.00216244	0.00715739	0.00081988	0.00181289		0.002535274	12.25923068	3	0.076757995	0.00648732	0.02147217	0.00245963	0.00543867	0.00760582	36.777692	0	
Lot 6i	0.064281413	0.00543285	0.01798199	0.00205983	0.004556465		0.006369538	37.79968447	3	0.19284424	0.01629854	0.05394597	0.0061795	0.01366393	0.01910861	92.3990534	0	
Lot 6(a,b,c,d,e)	1.086033091	0.09178775	0.303805335	0.03480083	0.076950623		0.107613203	520.3600051	3	3.258099272	0.27536343	0.911416	0.10440248	0.23085187	0.32283961	1561.08002	0	
Lot 11(a,b)	1.638023435	0.13844015	0.45821832	0.05248879	0.116061771		0.162309003	784.8396981	3	4.914070305	0.41532045	1.37465496	0.15746638	0.34818531	0.48692701	2354.51909	0	
Lot 12(b,c,d)	1.491231082	0.12603376	0.417154838	0.04778498	0.105660833		0.147763594	714.5058655	3	4.473693246	0.37810129	1.25146451	0.14335495	0.3169825	0.44329078	2143.5176	0	
Lot 13b	0.190082075	0.01606509	0.053173286	0.00609099	0.013468221		0.018834915	91.07559468	3	0.570246225	0.04819526	0.15951986	0.01827296	0.04004466	0.05650474	273.226784	0	
	Daily Totals (lb/day)									Single Higher Attedance Festival Totals (lbs) (20% of Annual Total)								
	5.326594214	**0.57639762**	**1.362634674**	**0.15922355**	**0.379355244**	**0.526953793**	**2432.5134**	**0**		**15.97978264**	**1.72919285**	**4.08790402**	**0.47767066**	**1.13806573**	**1.58086138**	**7297.5402**	**0**	

Annual Total Emissions (lbs)							
CO	NOX	PM10	PM2.5	ROG	TOG	CO2	CH4
79.8989132	**8.64596423**	**20.4395201**	**2.3883533**	**5.69032865**	**7.90430689**	**36487.701**	**0**

Shuttles

	Daily Emissions (lb/day)							Usage (Days)	Festival Emissions (lb)						
	CO	NOX	PM10	PM2.5	ROG	TOG	CO2	CH4	CO	NOX	PM10	PM2.5	ROG	TOG	CO2	CH4
Local Route	21.04351456	93.0694323	1.670603877	0.92625394	9.094032725	10.35286401	15601.80833		3	63.13054367	279.208297	5.01181163	2.77876182	27.2820982	31.058592	46805.425	
Pickup/Drop-Off																	
Uber/Taxi	1.333190905	0.11267675	0.372944906	0.07935489	0.094462933	0.132103658	638.7827704		3	3.999572716	0.33803024	1.11883472	0.23806466	0.2833888	0.39631097	1916.34831	
Madison & 50	0.548221277	0.04633379	0.153358632	0.03263151	0.038844092	0.05432233	262.6737888		3	1.644663832	0.13900137	0.46007589	0.09789454	0.11653227	0.16296699	788.021366	
	Daily Totals (lb/day)									Single Higher Attendance Festival Totals (lbs) (20% of Annual Total)							
	22.92492674	**93.2284428**	**2.196907415**	**1.03824034**	**9.227333749**	**10.53928999**	**16503.26488**			68.77478022	279.685328	6.59072225	3.11472102	27.6820192	31.61787	49509.7947	

Annual Total Emissions (lbs)							
CO	NOX	PM10	PM2.5	ROG	TOG	CO2	CH4
343.873901	**1398.42664**	**32.9536112**	**15.5736051**	**138.410096**	**158.08935**	**247548.973**	**0**

REGIONAL EMISSIONS

2016 Regional Vehicle Emissions (lb/day)

Thursday/Monday (lb/day)	CO	Nox	PM10	PM2.5	ROG	TOG	CO2
Campers Arrive/Depart	2130.63	343.68	4.28	3.99	85.35	111.17	531188.71
Daily GA Arrive/Depart	3582.28	577.83	7.19	6.71	143.51	186.91	893101.60
Daily Subtotal Th/M (lb/day)	5712.91	921.51	11.46	10.70	228.86	298.07	1424290.31
Friday/Saturday/Sunday (lb/day)							
Daily GA To/From	2323.16	374.73	4.66	4.35	93.07	121.21	579187.56
Shuttles	28.67	199.20	1.72	1.65	8.59	9.78	45162.61
Daily Subtotal F/S/S (lb/day)	2351.83	573.94	6.38	6.00	101.66	130.99	624350.17

Daily Total Mitigated Emissions					
Thursday/Monday (lb/day)	**CO**	**Nox**	**PM10**	**PM2.5**	**ROG**
Campers Arrive/Depart Regional	2130.63	343.68	4.28	3.99	85.35
Daily GA Arrive/Depart Regional	3582.28	577.83	7.19	6.71	143.51
Heavy Equipment On-site	181.33	106.97	0.90	0.90	5.46
Camping Lots On-site	16.75	1.42	4.58	0.53	1.19
Total	**5911.00**	**1029.90**	**16.94**	**12.13**	**235.51**
Friday/Saturday/Sunday (lb/day)	**CO**	**Nox**	**PM10**	**PM2.5**	**ROG**
Generators On-site	1827.15	1321.25	23.18	23.18	67.80
GA Day Parking Lots On-site	15.08	1.27	4.22	0.48	1.07
Staff/Artist Parking Lots On-site	5.33	0.58	1.36	0.16	0.38
Pickup/Dropoff and Uber/Taxi and Local Shuttles	22.92	93.23	2.20	1.04	9.23
Daily Travel To/From Regional	2323.16	374.73	4.66	4.35	93.07
Shuttles Regional	28.67	199.20	1.72	1.65	8.59
	4222.31	**1990.27**	**37.34**	**30.86**	**180.13**

Setup & Breakdown	**Annual GHG (MTCO2e)**	
Campers	2168.5	
Daily	3646.0	Regional
Heavy Equip	834.3	
Camp Lots	36.4	On-Site
Festival Days		
Generators	2025.1	
GA Day Lots	42.9	On-Site
Staff/Artist Lots	14.9	
Local Transport Services	101.1	
Daily Commutes	3546.7	
Regional Shuttles	276.6	6007.3
Annual Total GHG (MTCO2e)	**12692.5**	

MTCO2e = CO2 lb x 0.9072 x 1 ton/2000 lb

MT CO2e = CH4 lb x 0.9072 x 21 (GWP) x 1 ton/2000 lb

	CH4 MTCO2e/year
Setup/Breakdown CH4 (MTCO2e/yr)	1.33
Festival Days	3.53
	4.86

39 percent vehicles camp
61 percent daily vehicles

	% attendees	decimal	No of Vehicles Camping	No of Vehicles Daily	Total Vehicles	
Local	4	0.04	484	750	1234	
Region	52	0.52	6292	9750	16042	
Statewide Area	16	0.16	1936	3000	4936	
US	16.5	0.165	1996.5	3093.75	5090.25	
International	11.5	0.115	1391.5	2156.25	3547.75	
	100	1	12100	18750	30850	**composite EF (l**

Arrive/Depart Camping (2 total trips to region)								**lb/day**
		Miles	Decimal of Vehicles	No of Vehicles	VMT	2016 Vehicles	2016 VMT	**Camping**
Local		22	1	484	21296	605	26620	
Region								
	1 hr	60	0.1	629.2	7550	786.5	94380	
	2 hr	120	0.45	2831.4	305791	3539.25	849420	
	3 hr	180	0.45	2831.4	458687	3539.25	1274130	
Statewide Area								
	PSA	22	0.3	580.8	7667	726	31944	
	Ontario	90	0.35	677.6	42689	847	152460	
	LAX	145	0.35	677.6	68776	847	245630	
US								
	PSA	22	0.3	598.95	7906	748.6875	32942	
	Ontario	90	0.35	698.775	44023	873.46875	157224	
	LAX	145	0.35	698.775	70926	873.46875	253306	
International								
	PSA	22	0.3	417.45	5510	521.8125	22960	
	Ontario	90	0.35	487.025	30683	608.78125	109581	
	LAX	145	0.35	487.025	49433	608.78125	176547	
				12100	1120937			

Arrive/Depart Daily Trips (2 total trips to region)								**lb/day**
		Miles	Decimal of Vehicles	No of Vehicles	VMT	2016 vehicles	2016 vmt	**Daily Parking**
Local		0	1	750	0	938	0	
Region								
	1 hr	60	0.1	975	11700	1219	146250	
	2 hr	120	0.45	4387.5	473850	5484	1316250	
	3 hr	180	0.45	4387.5	710775	5484	1974375	
Statewide Area								
	PSA	22	0.3	900	11880	1125	49500	
	Ontario	90	0.35	1050	66150	1313	236250	
	LAX	145	0.35	1050	106575	1313	380625	
US								

	PSA	22	0.3	928.125	12251.25	1160	51047	
	Ontario	90	0.35	1082.8125	68217.1875	1354	243633	
	LAX	145	0.35	1082.8125	109905.4688	1354	392520	
International								
	PSA	22	0.3	646.875	8538.75	809	35578	
	Ontario	90	0.35	754.6875	47545.3125	943	169805	
	LAX	145	0.35	754.6875	76600.78125	943	273574	
				18750	1703988.75			
Daily Trips for three days (6 total trips)								**lb/day**
		Miles	Decimal of Vehicles	No of Vehicles	VMT	2016 Vehicles	**2016 VMT**	**Local Trips**
Local		11	1	18750	1237500	23438	**1546875**	

Vehicle Classification: EMFAC2011 Categories

Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Fraction VMT
Statewide	2016	LDA	Aggregated	Aggregated	GAS	13515465.31	483688095.5	0.905778041
Statewide	2016	LDA	Aggregated	Aggregated	DSL	108177.3366	4194007.073	0.007853903
Statewide	2016	LDA	Aggregated	Aggregated	ELEC	76171.07296	3834042.223	0.007179815
Statewide	2016	LDT1	Aggregated	Aggregated	GAS	1302818.814	42150819.47	0.078933691
Statewide	2016	LDT1	Aggregated	Aggregated	DSL	2561.408246	57685.17413	0.000108024
Statewide	2016	LDT1	Aggregated	Aggregated	ELEC	1055.204755	33078.17736	6.19438E-05
Statewide	2016	LDT2	Aggregated	Aggregated	GAS	4813832.766	178538866.8	0.334340635
Statewide	2016	LDT2	Aggregated	Aggregated	DSL	5393.343338	246810.496	0.000462189
Statewide	2016	LHD1	Aggregated	Aggregated	GAS	393515.237	12208495.58	0.022862227
Statewide	2016	LHD1	Aggregated	Aggregated	DSL	319690.2655	11244069.44	0.021056196
Statewide	2016	LHD2	Aggregated	Aggregated	GAS	60293.58432	2124050.223	0.003977601
Statewide	2016	LHD2	Aggregated	Aggregated	DSL	97482.99498	3801480.078	0.007118838
Statewide	2016	MCY	Aggregated	Aggregated	GAS	687767.0957	5301451.825	0.009927759

ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
0.000180339	**0.000234921**	**0.004504997**	**0.000726556**	**1.123177697**	**8.90302E-06**	**8.30409E-06**

ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
2.40031173	3.12680068	59.96150804	9.67045889	14949.49514369	0.11849926	0.11052739
8.51019614	11.08592967	212.59080122	34.28617243	53002.75550944	0.42013374	0.39186984
76.59176524	99.77336705	1913.31721097	308.57555191	477024.79958500	3.78120366	3.52682853
114.88764785	149.66005058	2869.97581646	462.86332787	715537.19937750	5.67180549	5.29024279
2.88037408	3.75216081	71.95380964	11.60455067	17939.39417243	0.14219911	0.13263287
13.74723991	17.90804024	343.41590966	55.38535547	85619.83582295	0.67867758	0.63302050
22.14833097	28.85184261	553.28118779	89.23196159	137943.06882586	1.09342499	1.01986637
2.97038577	3.86941584	74.20236619	11.96719288	18500.00024032	0.14664283	0.13677764
14.17684116	18.46766650	354.14765684	57.11614783	88295.45569242	0.69988625	0.65280240
22.84046632	29.75346269	570.57122491	92.02046039	142253.78972667	1.12759452	1.05173719
2.07026887	2.69686558	51.71680068	8.34077079	12893.93956143	0.10220561	0.09532987
9.88082869	12.87140392	246.83018507	39.80822425	61539.25699774	0.48779951	0.45498349
15.91911289	20.73726188	397.67085372	64.13547240	99146.58071859	0.78589921	0.73302895
0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
13.18728740	17.17861003	329.42789445	53.12939943	82132.36907455	0.65103369	0.60723632
118.68558662	154.60749027	2964.85105006	478.16459491	739191.32167097	5.85930319	5.46512685
178.02837994	231.91123540	4447.27657509	717.24689236	1108786.98250646	8.78895478	8.19769027
4.46338958	5.81429878	111.49867197	17.98225827	27798.64799446	0.22034986	0.20552614
21.30254119	27.75006236	532.15275257	85.82441447	132675.36542812	1.05166980	0.98092020
34.32076080	44.70843380	857.35721248	138.27266776	213754.75541198	1.69435690	1.58037144

4.60287051	5.99599562	114.98300547	18.54420384	28667.35574429	0.22723580	0.21194883
21.96824560	28.61725180	548.78252609	88.50642742	136821.47059775	1.08453448	1.01157396
35.39328458	46.10557235	884.14962537	142.59368863	220434.59151860	1.74730556	1.62975805
3.20806126	4.17902725	80.13967048	12.92474813	19980.27824602	0.15837646	0.14772191
15.31120148	19.94535732	382.48479091	61.68629790	95360.41890146	0.75588767	0.70503640
24.66804683	32.13418679	616.22549647	99.38347995	153636.23045236	1.21781903	1.13589197
46.49364148	60.56561228	1161.44449967	187.31519031	289569.24994233	2.29531108	2.14089727

Trips	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX	SOx_RUNEX
84849822.06	0.029708427	0.040840385	1.091143964	0.104711547	322.8089135	0.001875307	0.001726985	0.003240514
658604.9044	0.040971273	0.046643071	0.360413725	0.254193336	306.1981333	0.026371104	0.025230302	0.002923157
495036.422	0	0	0	0	0	0	0	0
7843395.566	0.094503847	0.125413964	2.982118782	0.296631762	375.2514702	0.004054813	0.00374183	0.003796126
12872.32912	0.204689089	0.23302492	1.239144757	1.255884725	400.0671376	0.156478012	0.149708842	0.003819289
6399.678877	0	0	0	0	0	0	0	0
30209682.11	0.038198844	0.05299295	1.465952686	0.185155975	433.2120331	0.001889975	0.001740749	0.004348766
34551.20268	0.0231348	0.026337432	0.170325171	0.092202284	382.8908126	0.009778053	0.009355058	0.003655313
5862790.693	0.125047313	0.179074564	2.585444089	0.541048092	808.1404782	0.002654229	0.002443715	0.00811246
4021301.369	0.194160783	0.221039143	0.98478763	4.642727861	564.1885352	0.040558142	0.038803615	0.005386093
898284.5689	0.069871215	0.101078454	1.467848563	0.383174465	886.6900017	0.001808962	0.001664128	0.00887671
1226213.443	0.154107433	0.175441067	0.770257072	3.340435904	619.6732906	0.030816693	0.029483577	0.005915785
1375396.638	2.617391663	3.137453775	23.71181315	1.188017104	171.3342258	0.001818004	0.001714691	0.002174492

	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
composite EF (lb/mi)	**0.000180339**	**0.000234921**	**0.004504997**	**0.000726556**	**1.123177697**	**8.90302E-06**	**8.30409E-06**

		trips/day
Peak buses	235	25.66666667
Offpeak	150	

Peak buses	offpk buses	min	RT min	Peak trips/hr	Offpeak trips/hr	total trips/day	miles 1way
35.8186033	22.86293828	8	16	9.551627548	6.096783541	15.64841109	3.5
15.3897421	9.823239641	14	28	7.181879648	4.584178499	11.76605815	7.6
19.74789916	12.60504202	16	32	10.53221289	6.722689076	17.25490196	9.3
45.28397566	28.90466531	24	48	36.22718053	23.12373225	59.35091278	13
38.81483628	24.77542741	44	88	56.92842654	36.33729354	93.26572008	26.6
52.8426543	33.72935381	13	26	22.89848353	14.61605332	37.51453685	6.3
6.46913938	4.129237902	18	36	3.881483628	2.477542741	6.359026369	7.2
20.63314981	13.17009562	28	56	19.25760649	12.29208925	31.54969574	16.9
235	150				106.2503622	272.709263	90.4

Speed	Fuel	VMT	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX
25	DSL	18290.5939	0.481692939	0.548370743	1.568903687	9.272022121	2063.145171
30	DSL	24895.12796	0.367570693	0.418451254	1.226791463	8.522821798	1932.254442
35	DSL	24968.08128	0.282048109	0.321090302	0.969996916	7.990855998	1828.756344

2012 No of Shuttles	Miles	2012 VMT		x 1.25 2016 Shuttles	x 1.25 **2016 VMT**	lb/mile ROG_RUNEX	TOG_RUNEX
771	11	8481		964	**10602**	0.000810341	0.000922512
						lb/day	
	One 99,000 Event	Total VMT	4070906.49			**1.52257E-05**	**1.73333E-05**
	Three 99,000 Events		12212719.47				
	Five festivals		19729270.09				

ave speed	EMFAC speed
26.25	25
32.57142857	30
34.875	35
32.5	30
36.27272727	35
29.07692308	30
24	25
36.21428571	35

PM10_RUNEX	PM2_5_RUNEX
0.082621665	0.079047489
0.073641231	0.070455544
0.067739362	0.064808987

CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM2_5_RUNEX
0.002704567	0.01878929	4.259820198	0.000162348	0.000155325
5.08169E-05	**0.000353037**	**0.080038996**	**3.05041E-06**	**2.91845E-06**

Lot	Cars (from Global Plan)	Area (acres)	Area (sq mile)	Miles/car	composite VMT	0.198784026 NOX (lb/day)	0.166651264 ROG (lb/day)	0.233056935 TOG (lb/day)
Lot 4	1850	34.282	0.054	0.231	428.166	0.18763807	0.15730701	0.21998927
Lot 5	770	12.973	0.020	0.142	109.629	0.04804333	0.04027729	0.05632661
Lot 7	2075	29.964	0.047	0.216	448.984	0.19676100	0.16495525	0.23068511
Lot 8	3800	37.492	0.059	0.242	919.733	0.40306029	0.33790696	0.47255303
Lot 10a	4200	62.635	0.098	0.313	1313.919	0.57580724	0.48272996	0.67508378
Lot 12a	80	11.063	0.017	0.131	10.518	0.00460950	0.00386439	0.00540424
					Total	1.41591943	1.18704087	1.66004205

2.352011983	1126.938928	0.011649897	0.010737975
CO (lb/day)	CO2 (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
2.22013305	1063.75068590	0.01099668	0.01013589
0.56844849	272.36541894	0.00281562	0.00259522
2.32807553	1115.47005935	0.01153134	0.01062869
4.76900806	2285.01422146	0.02362167	0.02177263
6.81294953	3264.34478161	0.03374564	0.03110413
0.05453964	26.13202788	0.00027014	0.00024900
16.75315430	8027.07719514	4.57859851	0.52604730

Fugitive PM10 (lb/day)	PM2.5 Fug (lb/day)
0.610060147	0.061006015
0.156201345	0.015620134
0.53181639	0.053181639
1.310453784	0.131045378
1.872099057	0.187209906
0.014986697	0.00149867

							0.198784026	0.166651264	0.233056935
Model ID	Desc.	Cars	Area (m2)	Area (sq mi)	Dist/car (mi)	VMT	NOx (lb/day)	ROG (lb/day)	TOG (lb/day)
GAP1	Lot 1(a,b)	5200	182171	0.070336293	0.265209904	1379.091503	0.60436808	0.506674036	0.708568867
GAP2	Lot 2a	2500	92041.5	0.035537259	0.188513285	471.2832129	0.206533453	0.173148023	0.242142462
GAP3	Lot 13a	400	33954	0.013109653	0.114497391	45.79895634	0.020070769	0.016826398	0.023531227
GAP4	Lot 14(a,b,c,d,e)	1750	63877.5	0.024663127	0.157044985	274.8287243	0.120439948	0.10097124	0.141205335
GAP5	Lot 15(a,b,c,d,e)	2625	155619.5	0.060084749	0.245121906	643.4450045	0.281981015	0.236399743	0.330598149
GAP6	Lot 16	1575	49664	0.01917529	0.13847487	218.09792	0.095578445	0.080128514	0.112057391
						Total	1.32897171	1.114147954	1.558103432

2.352011983	1126.938928	0.011649897	0.010737975
CO (lb/day)	CO2 (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
7.150881264	3426.260805	0.035419475	0.032646936
2.443703184	1170.871691	0.012104058	0.011156586
0.23747728	113.7844506	0.001176263	0.001084189
1.42504509	682.7936245	0.00705848	0.006505961
3.336398503	1598.596173	0.016525723	0.015232135
1.130883865	541.8497272	0.005601451	0.005162985
15.72438919	7534.15647	4.220362442	0.486036491

Fugitive PM10 (lb/c	PM2.5Fug
1.662656569	0.166265657
0.671493955	0.067149396
0.065255289	0.006525529
0.391581584	0.039158158
0.916793595	0.091679359
0.310750375	0.031075037
0.123945624	0.012394562

							RV EF	4.607978452	1.057643622
							composite EF (g/mile)	0.198784026	0.166651264
Model ID	**Desc.**	**Cars**	**RVs**	**Area (m2)**	**Area (sq mi)**	**Dist/car (mi)**	**VMT**	**NOx (lb/day)**	**ROG (lb/day)**
SACP1	Lot 3a	420	50	51165	0.019754826	0.140551863	66.05937571	0.097260964	0.038074097
SACP2	Lot 3b		16	18973.5	0.007325676	0.085590161	1.369442577	0.013911733	0.003193082
SACP3	Lot 3c	90		7785.5	0.003005985	0.05482686	4.934417382	0.002162441	0.00181289
SACP5	Lot 6l	100		39805	0.015368726	0.123970665	12.39706654	0.005432846	0.004554645
SACP6	Lot 6(a,b,c,d,e)	900		140271	0.054158687	0.232720191	209.4481718	0.09178781	0.076950623
SACP8	Lot 11(a,b)	1400		131871.5	0.050915637	0.225644936	315.9029102	0.13844015	0.116061771
SACP9	Lot 12(b,c,d)	1700		74124	0.028619305	0.169172412	287.5931006	0.126033762	0.105660833
SACP11	Lot 13b	400		21753.5	0.008399035	0.091646248	36.65849915	0.016065088	0.013468221
							Total (lb/day)	0.4910948	0.3597762

1.382836494	14.18715706	3565.603796	0.108183595	0.103138821
0.233056935	2.352011983	1126.938928	0.011649897	0.010737975
TOG (lb/day)	**CO (lb/day)**	**CO2 (lb/day)**	**PM10 (lb/day)**	**PM2.5 (lb/day)**
0.051754362	0.525892919	201.9021751	0.003192206	0.002995369
0.004174857	0.042831783	10.76474791	0.000326612	0.000311382
0.002535274	0.025585998	12.25923068	0.000126732	0.000116811
0.006369538	0.064281413	30.79968447	0.000318396	0.000293473
0.107613203	1.086033091	520.3600051	0.005379298	0.004958221
0.162309003	1.638023435	784.8396981	0.008113396	0.007478301
0.147763594	1.491231082	714.5058655	0.007386309	0.006808129
0.018834915	0.190082075	91.07559468	0.000941507	0.000867809
0.5013547	5.0639618	2366.5070015	1.3606320	0.1573142

Fug PM10 (lb/day)	Fug PM2.5 (lb/day)
0.094122749	0.0094123
0.005499256	0.0005499
0.007030659	0.0007031
0.017663594	0.0017664
0.298426037	0.0298426
0.450104924	0.0450105
0.409768528	0.0409769
0.052231779	0.0052232

Area	Dist	composite EF (g/mile)	0.198784026	0.166651264	0.233056935	2.352011983	1126.938928
sq mi	mi/car		**Nox (lb/day)**	**ROG (lb/day)**	**TOG (lb/day)**	**CO (lb/day**	**CO2 (lb/day)**
0.013058	0.114273		0.112676745	0.094462933	0.132103658	1.333190905	638.7827704

Area	Dist	composite EF (g/mile)	0.198784026	0.166651264	0.233056935	2.352011983	1126.938928
sq mi	mi/car		**Nox (lb/day)**	**ROG (lb/day)**	**TOG (lb/day)**	**CO (lb/day**	**CO2 (lb/day)**
0.011178	0.105728		0.046333791	0.038844092	0.05432233	0.548221277	262.6737888

0.011649897	0.010737975
PM10 (lb/day)	**PM2.5 (lb/day)**
0.006603511	0.006086606
Total PM 10	**Total PM2.5**
0.372944906	**0.042720746**
Fug PM10 (lb/day)	FugPM2.5
0.366341395	0.03663414

0.011649897	0.010737975
PM10 (lb/day)	**PM2.5 (lb/day)**
0.002715429	0.002502873
Total PM10	**Total PM2.5**
0.153358632	**0.017567193**
Fug PM10 (lb/day)	FugPM2.5
0.150643203	0.01506432

Shuttles Running

Trip Length (m)	Trip Length (mi)	Shuttle/Day	VMT		NO (g/mi)	ROG (g/mi)	TOG (g/mi)
					18.58976101	1.816449191	2.067889134
1296	0.805299067	2820	2270.94	**lb/day**	**93.06943226**	**9.094032725**	**10.35286401**

Fugitive Dust

Shuttle Area (m2)	Shuttle Area (mi2)	distance	Fug PM10 (lb/day)	Fug PM2.5
88031	0.033988803	0.184360525	0.740759417	0.074075942

CO (g/mi)	CO2 (g/mi)	Pm10 (g/mi)	pm2.5 (g/mi)
4.203248015	3116.317366	0.185727858	0.177693353
21.04351456	**15601.80833**	**0.929844461**	**0.889619801**
	Total	1.670603877	0.963695743

Fug PM10 (lb/day)	Fug PM2.5
0.740759417	0.074075942

				Tier 4 Interim Emission Factors (g/bhp-hr)					2016 Offroad Emission factors (lb/hr)	
quantity	**HP***	**load**	**HRS/DAY**	**CO**	**NOX**	**PM1 0**	**PM2.5**	**ROG**	**CO2**	**CH4**
11	34	0.31	8	4.1	4.6	0.13	0.13	0.1	19.61280000	0.0039
33	83	0.4	8	3.7	2.1	0.008	0.008	0.11	31.22490000	0.0028
8	34	0.31	8	4.1	4.6	0.13	0.13	0.1	19.61280000	0.0039
5	78	0.74	8	3.7	2.1	0.008	0.008	0.11	46.95020000	0.0056
1	83	0.4	8	3.7	2.1	0.008	0.008	0.11	31.22490000	0.0028
1	83	0.4	8	3.7	2.1	0.008	0.008	0.11	31.22490000	0.0028
1	83	0.4	8	3.7	2.1	0.008	0.008	0.11	31.22490000	0.0028
1	34	0.31	8	4.1	4.6	0.13	0.13	0.1	19.61280000	0.0039
11	381	0.38	8	2.6	1.3	0.008	0.008	0.08	272.33380250	0.0167
									Total	

LB/day						
CO	**NOX**	**PM1 0**	**PM2.5**	**ROG**	**CO2**	**CH4**
8.383668	9.303827	0.261734	0.261734	0.245376	1725.926	0.3432
71.49418	41.35069	0.154582	0.154582	2.125503	8243.374	0.7392
6.097213	6.76642	0.190352	0.190352	0.178455	1255.219	0.2496
18.8328	10.89249	0.04072	0.04072	0.559894	1878.008	0.224
2.16649	1.253051	0.004684	0.004684	0.064409	249.7992	0.0224
2.16649	1.253051	0.004684	0.004684	0.064409	249.7992	0.0224
2.16649	1.253051	0.004684	0.004684	0.064409	249.7992	0.0224
0.762152	0.845802	0.023794	0.023794	0.022307	156.9024	0.0312
73.02836	36.2333	0.224703	0.224703	2.247026	23965.37	1.473164
185.0978	109.1517	0.909937	0.909937	5.571788	37974.2	3.127564

Generator Parameters				Emission Factors (g/bhp-hr) for Offroad Equipment Meeting CARB Tier 4 Interim Engine Standards (CalEEMod Appendix D, Table 3.5)					2016 Offroad Generator Sets Emission Factors (lb/hr)		
bhp	load	hrs/day	quantity	CO	NOX	PM1 0	PM2.5	ROG	CO2	CH4	CO
1490	0.74	16	8	2.6	2.2	0.05	0.05	0.1	1,049	0.0546	808.9623
619	0.74	16	2	2.6	1.3	0.008	0.008	0.08	544	0.0216	84.01806
500	0.74	16	5	2.6	1.3	0.008	0.008	0.08	337	0.0130	169.6649
381	**0.38**	8	9	2.6	1.3	0.008	0.008	0.08	337	0.0130	59.75048
320	0.74	16	7	2.6	1.3	0.008	0.008	0.08	337	0.0130	152.0198
256	0.74	16	9	2.6	1.3	0.008	0.008	0.08	337	0.0130	156.3632
126	0.74	16	3	3.7	2.2	0.008	0.008	0.06	142	0.0091	36.50667
97.9	0.74	16	18	3.7	2.1	0.008	0.008	0.11	77.9	0.0073	170.1906
67.1	0.74	16	6	3.7	3	0.11	0.11	0.1	77.9	0.0073	38.8825
35.9	0.74	16	10	4.1	4.6	0.13	0.13	0.1	30.6	0.0057	38.41996
12	0.74	7	**200**	4.1	4.6	0.13	0.13	0.1	0.0	0.0073	112.3704

Daily Emissions (lb/day)					
NOX	PM1 0	PM2.5	ROG	CO2	CH4
696.9521	14.93469	14.93469	37.33672	134221.5	6.989699
41.68588	0.258517	0.258517	2.585171	17401.28	0.692529
84.17989	0.522046	0.522046	5.220459	26948.22	1.037578
29.64543	0.183848	0.183848	1.838476	24253.4	0.93382
75.42519	0.467753	0.467753	4.677531	37727.51	1.452609
77.58019	0.481117	0.481117	4.811175	48506.8	1.86764
21.21333	0.078933	0.078933	0.592	6815.006	0.435825
98.43457	0.36798	0.36798	5.059721	22449.43	2.114679
28.79407	1.176984	1.176984	1.261054	7483.144	0.704893
42.63679	1.199453	1.199453	1.124487	4899.678	0.909477
124.7037	3.508148	3.508148	3.288889	1.644309	10.27969

		Camping Lots (Thursday/Monday)						
Parking lot Area	**sample/ lot**	**4**	**5**	**7**	**8**	**10A**	**12a**	**1**
Overview								
Source Category	Unpaved Roads							
Source Description	Industrial unpaved road							
Length, miles	2	0.231441	0.142375	0.216378	0.242035	0.312838	0.131479	0.26521
Location	Western US							
Activity Data								
Vehicles/day	2000	1850	770	1725	3800	4200	80	4400
Wet days/yr	20	20	20	20	20	20	20	20
Number of 8-hour workdays/yr	1	1	1	1	1	1	1	1
Number of emission days/yr (workdays without rain)	1	1	1	1	1	1	1	1
Emission Factors								
PM10 Emission Factor Equation (lb/VMT)	**$E = 1.5\ (s/12)^{0.9}\ (W/3)^{0.45}$**							
Reference for PM10 EF Equation	**AP-42**							
PM2.5/PM10 ratio	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Reference for PM2.5/PM10 Ratio	**MRI, 2006**							
AP-42 Emission Factor Parameters								
s--silt content (%)	15	11	11	11	11	11	11	11
W--vehicle weight (tons)	15	2	2	2	2	2	2	2
Control Methods and Efficiencies								
Control Measure	Watering	Watering	Watering	Watering	Watering	Watering	Watering	Watering
Control Application/Frequency	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily
Economic Life of Control System (yr)	10	10	10	10	10	10	10	10
Control Efficiency	55%	55%	55%	55%	55%	55%	55%	55%
Reference	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2002	MRI, 2001
Uncontrolled Emissions								
PM10 (lbs/day)	41	1.356	0.347	1.182	2.912	4.160	0.033	3.695
PM2.5 (lbs/day)	4.1	0.1356	0.0347	0.1182	0.2912	0.4160	0.0033	0.3695
Controlled Emissions								
PM10 (lbs/day)	19	0.610	0.156	0.532	1.310	1.872	0.015	1.663
PM2.5 (lbs/day)	1.9	0.061	0.016	0.053	0.131	0.187	0.001	0.166

Sources

MRI, 2006. Background Document for Revisions to Fine Fraction Ratios Used for AP-42 Fugitive Emission Factors, prepared for the WRAP by Midwest Resear

MRI, April 2001. *Particulate Emission Measurements from Controlled Construction Activities,* EPA/600/R-01/031.

CARB, April 2002. California Air Resources Board. *Evaluation of Air Quality Performance Claims for Soil-Sement Dust Suppressant.*

		GA Day Parking Lots (Friday/Saturday/Sunday)					
Parking lot Area	**sample/ lot**	**2a**	**13a**	**14**	**15**	**16**	**LQ**
Overview							
Source Category	Unpaved Roads						
Source Description	Industrial unpaved road						
Length, miles	2	0.188513	0.114497	0.157045	0.245122	0.138475	0.108738
Location	Western US						
Activity Data							
Vehicles/day	2000	2500	400	1750	2625	1575	800
Wet days/yr	20	20	20	20	20	20	20
Number of 8-hour workdays/yr	1	1	1	1	1	1	1
Number of emission days/yr (workdays without rain)	1	1	1	1	1	1	1
Emission Factors							
PM10 Emission Factor Equation (lb/VMT)	**$E = 1.5\ (s/12)^{0.9}\ (W/3)^{0.45}$**						
Reference for PM10 EF Equation	**AP-42**						
PM2.5/PM10 ratio	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Reference for PM2.5/PM10 Ratio	**MRI, 2006**						
AP-42 Emission Factor Parameters							
s--silt content (%)	15	11	11	11	11	11	11
W--vehicle weight (tons)	15	2	2	2	2	2	2
Control Methods and Efficiencies							
Control Measure	Watering	Watering	Watering	Watering	Watering	Watering	Watering
Control Application/Frequency	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily
Economic Life of Control System (yr)	10	10	10	10	10	10	10
Control Efficiency	55%	55%	55%	55%	55%	55%	55%
Reference	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001
Uncontrolled Emissions							
PM10 (lbs/day)	41	1.492	0.145	0.870	2.037	0.691	0.275
PM2.5 (lbs/day)	4.1	0.1492	0.0145	0.0870	0.2037	0.0691	0.0275
Controlled Emissions							
PM10 (lbs/day)	19	0.671	0.065	0.392	0.917	0.311	0.124
PM2.5 (lbs/day)	1.9	0.067	0.007	0.039	0.092	0.031	0.012

Sources

MRI, 2006. Background Document for Revisions to Fine Fraction Ratios Usech Institute, Project No. 110397, February 1.
MRI, April 2001. *Particulate Emission Measurements from Controlled Constr*
CARB, April 2002. California Air Resources Board. *Evaluation of Air Quality F*

		Staff Support and Artist Lots					
Parking lot Area	**sample/ lot**	**Lot 3a**	**Lot 3b**	**Lot 3c**	**Lot 6l**	**Lot 6(a,b,c,d,e)**	**Lot 11(a,b)**
Overview							
Source Category	Unpaved Roads						
Source Description	Industrial unpaved road						
Length, miles	2	0.140551863	0.08559	0.054827	0.123971	0.232720191	0.2256449
Location	Western US						
Activity Data							
Vehicles/day	2000	470	16	90	100	900	1400
Wet days/yr	20	20	20	20	20	20	20
Number of 8-hour workdays/yr	1	1	1	1	1	1	1
Number of emission days/yr (workdays without rain)	1	1	1	1	1	1	1
Emission Factors							
PM10 Emission Factor Equation (lb/VMT)	**$E = 1.5\ (s/12)^{0.9}\ (W/3)^{0.45}$**						
Reference for PM10 EF Equation	**AP-42**						
PM2.5/PM10 ratio	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Reference for PM2.5/PM10 Ratio	**MRI, 2006**						
AP-42 Emission Factor Parameters							
s--silt content (%)	15	11	11	11	11	11	11
W--vehicle weight (tons)	15	2	20	2	2	2	2
Control Methods and Efficiencies							
Control Measure	Watering	Watering	Watering	Watering	Watering	Watering	Watering
Control Application/Frequency	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily
Economic Life of Control System (yr)	10	10	10	10	10	10	10
Control Efficiency	55%	55%	55%	55%	55%	55%	55%
Reference	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001
Uncontrolled Emissions							
PM10 (lbs/day)	41	0.209	0.012	0.016	0.039	0.663	1.000
PM2.5 (lbs/day)	4.1	0.0209	0.0012	0.0016	0.0039	0.0663	0.1000
Controlled Emissions							
PM10 (lbs/day)	19	0.094	0.005	0.007	0.018	0.298	0.450
PM2.5 (lbs/day)	1.9	0.009	0.001	0.001	0.002	0.030	0.045

Sources

MRI, 2006. Background Document for Revisions to Fine Fraction Ratios Use
MRI, April 2001. *Particulate Emission Measurements from Controlled Constru*
CARB, April 2002. California Air Resources Board. *Evaluation of Air Quality F*

				Shuttles and Drop-off		
Parking lot Area	**sample/ lot**	**Lot 12(b,c,d)**	**Lot 13b**	**Shuttle**	**Uber/Taxi**	**Mad/50 Dropoff**
Overview						
Source Category	Unpaved Roads					
Source Description	Industrial unpaved road					
Length, miles	2	0.169172412	0.091646	0.18436052	0.1142729	0.105727851
Location	Western US					
Activity Data						
Vehicles/day	2000	1700	400	2820	2250	1000
Wet days/yr	20	20	20	20	20	20
Number of 8-hour workdays/yr	1	1	1	1	1	1
Number of emission days/yr (workdays without rain)	1	1	1	1	1	1
Emission Factors						
PM10 Emission Factor Equation (lb/VMT)	**$E = 1.5\ (s/12)^{0.9}\ (W/3)^{0.45}$**					
Reference for PM10 EF Equation	**AP-42**					
PM2.5/PM10 ratio	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Reference for PM2.5/PM10 Ratio	**MRI, 2006**					
AP-42 Emission Factor Parameters						
s--silt content (%)	15	11	11	11	11	11
W--vehicle weight (tons)	15	2	2	2	2	2
Control Methods and Efficiencies						
Control Measure	Watering	Watering	Watering	Watering	Watering	Watering
Control Application/Frequency	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily	Twice Daily
Economic Life of Control System (yr)	10	10	10	10	10	10
Control Efficiency	55%	55%	55%	55%	55%	55%
Reference	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001	MRI, 2001
Uncontrolled Emissions						
PM10 (lbs/day)	41	0.911	0.116	1.646	0.814	0.335
PM2.5 (lbs/day)	4.1	0.0911	0.0116	0.1646	0.0814	0.0335
Controlled Emissions						
PM10 (lbs/day)	19	0.410	0.052	0.741	0.366	0.151
PM2.5 (lbs/day)	1.9	0.041	0.005	0.074	0.037	0.015

Sources

MRI, 2006. Background Document for Revisions to Fine Fraction Ratios Use
MRI, April 2001. *Particulate Emission Measurements from Controlled Constru*
CARB, April 2002. California Air Resources Board. *Evaluation of Air Quality F*

Parking lot Area	sample/ lot
Overview	
Source Category	Unpaved Roads
Source Description	Industrial unpaved road
Length, miles	2
Location	Western US

Activity Data	
Vehicles/day	2000
Wet days/yr	20
Number of 8-hour workdays/yr	1
Number of emission days/yr (workdays without rain)	1

Emission Factors	
PM10 Emission Factor Equation (lb/VMT)	**$E = 1.5\ (s/12)^{0.9}\ (W/3)^{0.45}$**
Reference for PM10 EF Equation	**AP-42**
PM2.5/PM10 ratio	**0.1**
Reference for PM2.5/PM10 Ratio	**MRI, 2006**

AP-42 Emission Factor Parameters	
s--silt content (%)	15
W--vehicle weight (tons)	15

Control Methods and Efficiencies	
Control Measure	Watering
Control Application/Frequency	Twice Daily
Economic Life of Control System (yr)	10
Control Efficiency	55%
Reference	MRI, 2001

Uncontrolled Emissions		Th/M	F/Sa/Su
PM10 (lbs/day)	41	9.957	12.056
PM2.5 (lbs/day)	4.1	0.996	1.233

Controlled Emissions			
PM10 (lbs/day)	19	4.481	5.548
PM2.5 (lbs/day)	1.9	0.448	0.555

0.53042	0.281104
0.377027	0.17118
0.228995	0.109654
0.31409	0.247941
0.490244	0.46544
0.27695	0.45129
0.217476	0.338345
	0.183292

Sources

MRI, 2006. Background Document for Revisions to Fine Fraction Ratios Use
MRI, April 2001. *Particulate Emission Measurements from Controlled Constru*
CARB, April 2002. California Air Resources Board. *Evaluation of Air Quality F*

APPENDIX B

Biological Resources Study

BIOLOGICAL ASSESSMENT
and
IMPACT ANALYSIS UPDATE

of the

INDIO MUSIC FESTIVALS SITE

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April 25, 2015

Long-term use of an approximately 651-acre site located in Indio, Riverside County, California, necessitated a biological resources analysis. This document is an updated revision of the original report completed in 2012. The site is being used for annual music festivals.

The protected western burrowing owl and other migratory avian species have been observed on the project site. Specifically, portions of the site are considered suitable habitat for the burrowing owl. Because of this finding, and as stipulated in the California Department of Fish & Game's *Staff Report on Burrowing Owl Mitigation*, pre-disturbance surveys are necessary each year prior to music festival events. Functionally, the burrowing owl is not covered under the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP).

The loggerhead shrike has been observed on the project site. The California Department of Fish & Game considers this a Species of Special Concern. Spring breeding surveys should be done each year for this species prior to music festival events. The loggerhead shrike is not a covered species under the CVMSHCP.

Field surveys were first initiated on July 6, 2012. Specific dates of biological surveys in 2012 were July 6, 9, 10, 14 and 16; August 2-10. Night surveys were conducted on the evenings of August 3, 5 and 6. Additional surveys were conducted in 2014, specifically on March 22, 23, 24, 27, 28 and 29. These surveys focused on the burrowing owl and loggerhead shrike though any species considered sensitive were noted. Surveys for this updated report were conducted on March 20, 21, 22, 27, 28, 29 and April 1 and 2, 2015.

Survey dates included the period when ephemeral plant species would be in bloom. The survey dates also encompassed the most favorable seasons when animal species would likely be observed. Reducing the likelihood that all species would be detected was the existence of dry winters in 2012, 2013, 2014 and 2015. Precipitation in January, February and March of 2015 was less than half the long-term average. Extended drought suppresses reproduction, numbers and activity of all species.

As of 2015 no native plant associations or "communities" were found on the site. The mesquite hummock located on the site in 2012 has been covered with turf. Plant life existing on the project site consists of ornamental landscaping, turf, a date grove and vacant lots some of which have become dominated by invasive "weed" species.

No evidence of the endangered Casey's June beetle was found within, or adjacent to, the project site. Additionally, this species has not yet been recorded from the lower Coachella Valley. For these reasons formal surveys for the beetle are not necessary or required.

No evidence of the officially threatened desert tortoise was found on or near the project site. This species is not expected in moderately disturbed areas, such as the project site, and has never been recorded from the floor of the Coachella Valley.

The project site lies within the jurisdictional boundaries of the CVMSHCP. The project site boundaries do not abut conservation areas described in the CVMSHCP. Therefore,

recommendations for projects that come in contact with conservation areas do not apply to this site.

No blue-line stream corridors (streams or dry washes) are shown on U.S. Geological Survey maps for the project site nor are there botanical indicators of such corridors. Thus, there are no biological reasons for requiring streambed alteration permits from state or federal government agencies.

An intensive plant and animal survey was conducted within the Indio musical festival site. The 2012 surveys revealed the presence of two sensitive species within the project boundaries: the burrowing owl and loggerhead shrike.

I. FINDINGS AND RECOMMENDATIONS

Burrowing Owl

In 2012, the burrowing owl was observed twice within the project site boundaries though no active burrows were found. Pockets of suitable habitat are scattered over and around the site and include active rodent burrows that provide potential nest sites. Because of these factors it is concluded that burrowing owls may take up residency within the project site boundaries at any time. The inability to detect the owl since 2012 may reflect a decline in regional owl numbers due to four years of successive drought. Prolonged drought reduces the food base on which the owls depend which can be expected to result in an owl population decline.

Detailed guidelines for burrowing owl mitigation is provided in the Staff Report on Burrowing Owl Mitigation prepared by the California Department of Fish and Wildlife (March 7, 2012). Based on this guidance, the following measures have been identified to mitigate potential impacts to the burrowing owl.

1. A survey of the Future Festival Site to determine the presence of burrowing owls shall be conducted 30 days prior to the first Future Festival event in spring and the first event in fall to determine if active burrows are present on or within vacant areas within 550 yards of the Future Festival Site. A report of the survey results shall be submitted to the City of Indio. If the biologist performing the surveys determines the site no longer contains suitable habitat for residency by burrowing owl due to changes in site conditions over the term the Major Music Festival Event Permit is in effect, this should be noted in the report with a recommendation on whether surveys should be continued.

2. Additional surveys may also be conducted earlier than 30 days prior to the first event in spring or fall to determine if there are any burrowing owls residing on the site to support the preparation of a Burrowing Owl Exclusion Plan for submittal to the California Department of Fish and Wildlife (CDFW) for approval as discussed in the Staff Report on Burrowing Owl Mitigation prepared by the CDFW (March 7, 2012). If a Burrowing Owl Exclusion Plan is approved by the CDFW, this plan may be implemented.

3. If an active burrow is located during the breeding season, the burrow shall be treated as a nest site and temporary fencing shall be installed at a distance of 550 yards from the active burrow to prevent disturbance during Future Festival events, including periods before and after events when the site is being setup and broken down and also to avoid destruction of the burrow by chaining, disking or other direct disturbance. This is the maximum buffer distance recommended in the Staff Report on Burrowing Owl Mitigation prepared by the CDFW (March 7, 2012) when activities result in high level of disturbance. Fencing used shall be a visual screen unless the biological monitor determines a visual screen is not appropriate due to the location of the burrow and the nature of surrounding uses or activities. A biological monitor shall be present to supervise erection and removal of temporary fencing. The monitor is also required to check the fence for breaches daily during each Future Festival.

4. During all Future Festivals, if any active burrows are identified on the Future Festival site, the Festival Operator shall not fumigate, use treated bait or other means of poisoning to control nuisance animals on the site.

5. The biological monitor shall develop materials for distribution to all staff working at Future Festival Events if any occupied burrows are identified during the required surveys to increase the staff's recognition of and commitment to burrowing owl protection.

Loggerhead Shrike

The loggerhead shrike is a state Species of Special Concern. It was recorded on site during surveys in 2012 and continues to be resident in the area in 2015. Therefore, breeding surveys are required and must be conducted 30 days prior to the first Future Festival event each spring. If a nest is found, temporary fencing shall be installed to provide a buffer at a distance of 100 feet from the nest to prevent disturbance during Future Festival events, including the periods before and after the events when the site is being setup and broken down. A biological monitor shall be present to supervise the erection and removal of the temporary fencing. The monitor is also required to check the fence for breaches once each day during Future Festivals.

Mitigation Fees

The project site lies within the jurisdictional boundaries of the CVMSHCP. Normally, the Plan requires that a habitat acquisition fee be paid for each acre of land that is to be developed. Funds collected are used to purchase and preserve land within designated Conservation Areas. However, because the Indio Music Festival does not involve the construction of any new permanent improvements, the payment of habitat acquisition fees is not required.

Following the acceptance and implementation of the recommended mitigation described in this report, continued use of the music festival site is not expected to have significant adverse impacts upon biological resources in the region.

II. CERTIFICATION STATEMENT

I, James W. Cornett, hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements and information presented are true and correct to the best of my knowledge and belief.

April 26, 2015 _____

Date

Principal Investigator

APPENDIX C

Technical Noise Report

Noise Analysis Technical Report Update
Modified Music Festivals Plan Project
Indio, California

Prepared for:

City of Indio
100 Civic Center Mall
Indio, CA 92201

Prepared by:

Meridian Consultants, LLC
910 Hampshire Road, Suite V
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February 2016

Table of Contents

A. INTRODUCTION

This Noise Analysis Technical Report Update ("Noise Update") analyzes potential short term noise and groundborne vibration impacts of the proposed modifications to the Music Festivals Plan Project ("Approved Project"), which the City of Indio approved in April 2013 after certifying a Final Environmental Impact Report (SCH. No. 2012081085) ("Final EIR") for this Project. The Noise Update discusses applicable federal, State, and local noise and vibration regulations, monitoring data collected during the 2015 Festivals, applicable noise and vibration thresholds, the methodology used to analyze potential noise and vibration impacts, and the modeled roadway (located in **Appendix A**) when compared to the 2012 Noise Analysis Technical Report ("2012 Noise Report").

The analysis in this report follows the same format and utilizes the same methodologies as the 2012 Noise Report. As much of the information regarding Festival operations and characteristics is similar to the Approved Project, this report focuses on the changes in background conditions and to the Project, as discussed below. Detailed noise information is contained in the 2012 Noise Report, which is incorporated by reference.

B. PROJECT DESCRIPTION

The Applicant – Coachella Music Festival, LLC/Goldenvoice, LLC – is requesting the approval from the City of Indio ("City") of modifications to the Major Music Festival Event Ordinance, Development Agreement, and Major Music Festival Event Permit ("Modified Project") that collectively make up the Approved Project as evaluated in the Final EIR.

The Modified Project includes updates to the Major Music Festival Event Ordinance that would increase the maximum permitted daily attendance for the Lower Attendance Festivals to 85,000 persons and for the Higher Attendance Festivals to 125,000 persons ("Modified Attendance Levels"). To accommodate the increased attendance, the Approved Festival Site would be expanded by approximately 42 acres within the Approved Overlay Zone.

The Modified Project would include additional Support Areas, Camping Areas, General Admission Parking Areas, an expanded Shuttle Operation, a Dropoff/Pickup Area, and relocation of the Taxi/Uber/Lyft Area, and increase the size of the Performance Area, as shown in **Figure 1, Modified Festival Site.** In addition, the Modified Project would change the use of approximately 98.0 acres within the Approved Festival Site to accommodate the proposed increase in the maximum daily attendance. As shown in **Figure 1**, areas currently designated for the Performance Area, General Admission Parking Area, and Support Areas would be New Support Areas, New Performance Area, New General Admission Parking Areas, and the relocated Taxi/Uber/Lyft Area.

C. ENVIRONMENTAL SETTING

1. Fundamentals of Sound and Vibration

a. Fundamentals of Sound

Sound is the quickly varying pressure wave travelling through a medium. When sound travels through air, the atmospheric pressure varies periodically. The number of pressure variations per second is called the frequency of sound, and is measured in Hertz (Hz) which is defined as cycles per second. Sound and noise will be used interchangeably throughout this section.

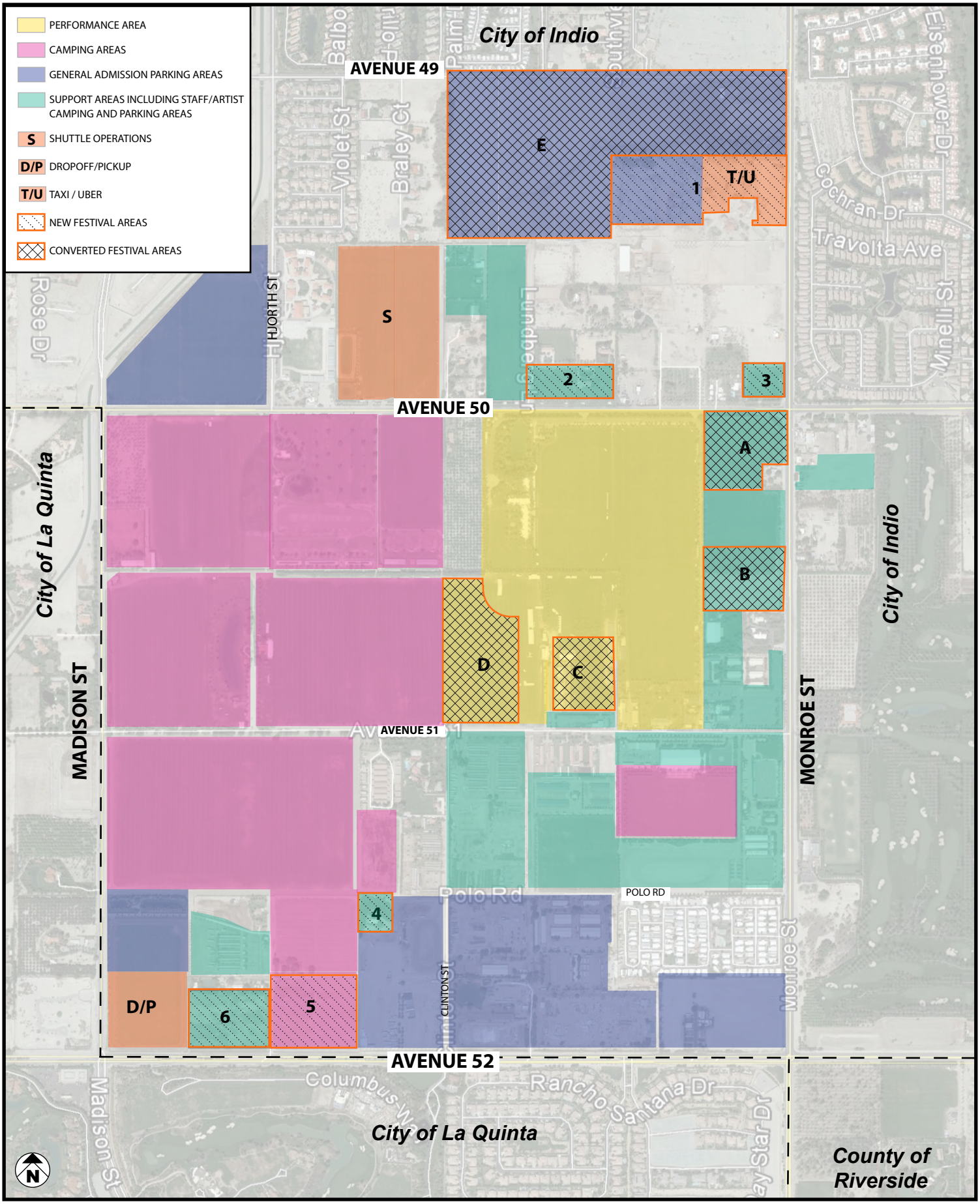
The sounds we hear comprise of various frequencies. A normal human ear is able to hear sounds with frequencies from 20 Hz to 20,000 Hz. The range of 20 Hz to 20,000 Hz is called the audible frequency range. The entire audible frequency range can be divided into 10 or 24 frequency bands, known as octave bands or 1/3 octave bands, respectively.1 A particular sound or noise can be seen to have different strengths or sound pressure levels in the frequency bands. The higher the frequency, the more high-pitched a sound is perceived. For example, the sounds produced by drums have much lower frequencies than those produced by a whistle.

One single sound pressure level is often used to describe a sound. This can be done by adding the contribution from all octave bands or 1/3 octave bands together to yield one single sound pressure level. Sound Pressure Level (SPL) alone is not a reliable indicator of loudness because the human ear does not respond uniformly to sounds at all frequencies. For example, the human ear is less sensitive to low and high frequencies than to the medium frequencies that more closely correspond to human speech. In response to this sensitivity of the human ear to different frequencies, the A-weighted noise level, referenced in units of dB(A), was developed to better correspond with subjective judgment of sound levels by individuals.

A doubling of sound energy results in a 3 dB(A) increase in sound, which means that a doubling of sound wave energy (e.g., doubling the volume of traffic on a roadway) would result in a barely perceptible change in sound level. In general, changes in a noise level of less than 3 dB(A) are not noticed by the human ear.[2] Changes from 3 to 5 dB(A) may be noticed by some individuals who are extremely sensitive to changes in noise. An increase of greater than 5 dB(A) is readily noticeable, while the human ear perceives a 10 dB(A) increase in sound level to be a doubling of sound volume.

1 There are approximately 31 1/3 octave centers or 30 1/3 octave bands in the human hearing range.

2 U.S. Department of Transportation, Federal Highway Administration, Fundamentals and Abatement of Highway Traffic Noise, (Springfield, Virginia: U.S. Department of Transportation, Federal Highway Administration, September 1980), p. 81.



SOURCE: Coachella Music Festival, LLC / Goldenvoice, LLC - 2016

FIGURE **1**

Meridian Consultants

Modified Festival Site

028-004-15

To support assessing community reaction to noise, scales have been developed that average sound-pressure levels over time and quantifies the result in terms of a single numerical descriptor. Several scales have been developed that address community noise levels. Leq is the average A-weighted sound level measured over a given time interval. Leq can be measured over any period, but is typically measured for 1-minute, 15-minute, 1-hour, or 24-hour periods.

Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dB(A), whereas a solid wall or berm reduces noise levels by 5 to 10 dB(A).3 Vegetative barriers, such as shrubs up to 8 feet in height, typically attenuate noise levels 1 dB(A) and can attenuate noise levels from 1 to 3 dB(A) depending on the type and amount of vegetation.4

Decibel readings are weighted to reflect sensitivities to different frequencies. As discussed above, the A weighting is intended to reflect human sensitivity to higher frequencies, while the C weighting incorporates low frequencies. With a very low frequency transmission, such as sound from a deep bass speaker, this low frequency sound may be felt before it is heard. While this low frequency sound is typically airborne, it can be confused with ground vibration. This is mainly due to the fact that certain parts of the human body can resonate at various low frequencies. Usually, sounds that are characterized as impulsive generally contain low frequencies. Impulsive sounds may induce secondary effects, such as shaking of a structure, rattling of windows, inducing vibrations.

Low frequency noise can travel relatively long distances in comparison to higher frequencies because it has a relatively long wavelength and a low material absorption rate. Low frequency noise also has non directional transmission or propagation characteristics which results in the effect of low frequency sound enveloping the individual without any discernible localized source.

The sound level averages, Leq, were measured as A-weighted, slow time weighted (one minute period) sound level variables, commonly used for measuring environmental sounds. The maximum one minute recorded measurement is commonly referred to as Lmax. The minimum one minute recorded measurement is commonly referred to as Lmin. Sound levels presented in this report represent an average Leq, the Lmax, and Lmin expressed in terms of dB(A).

Table 1, Noise Descriptors, identifies various noise descriptors developed to measure sound levels over different periods of time.

3 State of California Department of Transportation (Caltrans), *Technical Noise Supplement,* 1998, pp. 33-40, 123-131.

4 Caltrans, *Traffic Noise Attenuation as a Function of Ground and Vegetation (Final Report),* 1995, pp. 65.

Table 1
Noise Descriptors

Term	Definition
Decibel (dB)	The unit for measuring the volume of sound equal to 10 times the logarithm (base 10) of the ratio of the pressure of a measure sound to a reference pressure.
A-Weighted Decibel [dB(A)]	A sound measurement scale that adjusts the pressure of individual frequencies according to human sensitivities. The scale accounts for the fact that the region of highest sensitivity for the human ear is between 2,000 and 4,000 cycles per second (hertz).
Hertz (Hz)	The frequency of the pressure vibration which is measured in cycles per second.
Kilo Hertz (kHz)	One thousand cycles per second.
Equivalent Sound Level (Leq)	The sound level containing the same total energy as a time varying signal over a given time period. The Leq is the value that expresses the time averaged total energy of a fluctuating sound level. Leq can be measured over any time period, but is typically measured for 1-minute, 15-minute, 1-hour, or 24-hour periods.
Community Noise Equivalent Level (CNEL)	A rating of community noise exposure to all sources of sound that differentiates between daytime, evening, and nighttime noise exposure. These adjustments add 5 dB(A) for the evening, 7:00 PM to 10:00 PM, and add 10 dB)A) for the night, 10:00 PM to 7:00 AM. The 5 and 10 decibel penalties are applied to account for increased noise sensitivity during the evening and nighttime hours. The logarithmic effect of adding these penalties to the 1-hour L_{eq} measurements typically results in a CNEL measurement that is within approximately 3 dB(A) of the peak-hour L_{eq}.[1]
Nighttime (Lnight)	Lnight is the average noise exposure during the hourly periods from 10:00 PM to 7:00 AM.
sound pressure level	The sound pressure is the force of sound on a surface area perpendicular to the direction of the sound. The sound pressure level is expressed in dB.
Ambient Noise	The level of noise that is all encompassing within a given environment, being usually a composite of sounds from many and varied sources near to and far from the observer. No specific source is identified in the ambient.

Note:
[1] *California Department of Transportation, Technical Noise Supplement; A Technical Supplement to the Traffic Noise Analysis Protocol, (Sacramento, California: November 2009), pp. N51-N54.*

b. Fundamentals of Vibration

Vibration is commonly defined as an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. The peak particle velocity (PPV) or the root-mean-square (RMS) velocity is usually used to describe vibration amplitudes. PPV is defined as the maximum instantaneous peak of the vibration signal, while RMS is defined as the square-root of the average of the squared amplitude of the signal. PPV is typically used for evaluating potential building damage, whereas RMS is typically more suitable for evaluating human response to groundborne vibration. The RMS vibration velocity level can be presented in inches per second or in VdB (a decibel unit referenced to 1 micro-inch per second). Commonly, groundborne vibration generated by man-made activities (i.e., road traffic, construction activity) attenuates rapidly with distance from the source of the vibration.

The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by sources within buildings such as operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground-borne vibration from traffic is barely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings.

2. Existing Conditions

a. Overall Noise Levels

Existing land uses around the Approved Festival Site consist of relatively low-density residential development on a relatively flat landscape and have not significantly changed since the approval of the Music Festivals Plan project. Primary sources of noise throughout the City are caused primarily by motor vehicle traffic on City streets, particularly major roadways.5 Other noise generators in the City include those associated with commercial uses, including mechanical equipment, such as fans, motors, and compressors. These noise sources contribute to the ambient noise environment around the Approved Festival Site. Because the land uses and sources of noise have not significantly changed since certification of the Final EIR, it is reasonable to conclude that the ambient levels around the Festival Site identified in the Final EIR will have remained relatively unchanged.

5 City of La Quinta, *Environmental Impact Report for the City of La Quinta General Plan* (2013).

b. Roadway Noise Levels

Existing land uses around the Approved Festival Site consist of relatively low-density residential development on a relatively flat landscape. The primary noise source is vehicular traffic on surface streets in the area.

Traffic counts were taken on March 2015 at eight representative intersections along key roadway corridors in the surrounding area. As analyzed in the 2012 Noise Report, 37 roadway segments were selected for the existing noise analysis, based on proximity to noise sensitive uses and the volume of traffic near the Approved Festival Site. **Table 2, Existing North/South Roadway Noise Levels,** identifies the existing 24 hour CNEL and nighttime, or "Lnight," noise levels along north/south roadways adjacent to the Approved Festival Site. It should be noted that the lot line of the nearest sensitive receptors were located approximately 75 feet from the centerline of the roadway. Average vehicle speed over the course of 24 hours would be 40 miles per hour.

As shown in **Table 2,** the CNEL at roadways adjacent to the Approved Festival Site range from a high of 70.2 dB(A) along Madison Street between Avenue 52 to Avenue 54 to a low of 60.2 dB(A) along Madison Street south of Avenue 48. Furthermore, the CNEL along roadways in the surrounding area ranged from a high of 75.1 dB(A) along Jefferson Street north of Avenue 48 to a low of 59.6 dB(A) along Jackson Street between Avenue 50 and Avenue 52.

The nighttime roadway noise levels adjacent to the Approved Festival Site range from a high of 54.8 dB(A) along Madison Street between Avenue 52 and Avenue 54 to a low of 44.8 dB(A) along Madison Street south of Avenue 48. In addition, the CNEL along roadways in the surrounding area range from a high of 58.6 dB(A) along Jefferson Street between Avenue 50 and Avenue 52 to a low of 42.3 dB(A) along Jackson Street between Avenue 50 and Avenue 52.

Table 2
Existing North/South Roadway Noise Levels

Roadway Segment	Noise Level in dB(A) at 75 feet from Roadway Centerline	
	CNEL	Lnight
Roadways Adjacent to Approved Festival Site		
Madison St: South of Avenue 48	60.2	44.8
Madison St: North of Avenue 50	61.5	46.1
Madison St: Ave 50 to Ave 52	65.4	50.0
Madison St: Ave 52 to Ave 54	70.2	54.8
Hjorth St: Ave 48 to Ave 49	65.0	53.6
Monroe St: Ave 49 to Ave 50	62.6	45.3
Monroe St: Ave 50 to Ave 52	62.6	45.3

Roadway Segment	Noise Level in dB(A) at 75 feet from Roadway Centerline	
	CNEL	Lnight
Monroe St: Ave 52 to Ave 54	60.5	43.3
Roadways in Surrounding Area		
Monroe St: North of Ave 48	68.6	51.4
Monroe St: Ave 48 to Ave 49	65.0	47.8
Jefferson St: Ave 48 to Ave 49	74.9	53.7
Jefferson St: north of Ave 48	75.1	53.8
Jefferson St: Ave 49 to Ave 50	74.0	52.7
Jefferson St: Ave 50 to Ave 52	74.0	58.6
Jefferson St: Ave 52 to Ave 54	72.7	57.3
Jackson St: Hwy 111 to Ave 48	70.5	53.7
Jackson St: Ave 48 to Ave 50	63.5	46.3
Jackson St: Ave 50 to Ave 52	59.6	42.3
Jackson St: Ave 52 to Ave 54	61.7	50.4

Note:
*Calculations are provided in **Appendix A.***
Right-of-way width for all listed roadways range from a minimum of 84 feet to 124 feet.
CNEL = Community Noise Equivalent Level; Lnight = Average noise exposure during the hourly periods from 10:00 PM to 7:00 AM.

Table 3, Existing East/West Roadway Noise Levels, identifies the existing 24 hour CNEL and nighttime noise levels along east/west roadways adjacent to the Approved Festival Site. As shown in **Table 3**, the CNEL along roadways adjacent to the Approved Festival Site range from a high of 71.9 dB(A) along Avenue 52 between Jefferson Street and Madison Street to a low of 56.5 dB(A) along Avenue 49, west of Monroe. Furthermore, the CNEL along roadways in the surrounding area ranged from a high of73.3 dB(A) along Avenue 48, from Jefferson Street to Madison Street, to a low of 55.4 dB(A) along Avenue 49, from Jefferson Street to Madison Street.

The nighttime roadway noise levels adjacent to the Approved Festival Site range from a high of 56.5 dB(A) CNEL along Avenue 52 between Jefferson Street to Madison Street to a low of 45.2 dB(A) along Avenue 49 west of Monroe Street. In addition, the CNEL along roadways surrounding the area range from a high 57.9 dB(A) along Avenue 48 from Jefferson Street to Madison Street to a low of 44.0 dB(A) along Avenue 49, from Jefferson Street to Madison Street.

Table 3
Existing East/West Roadway Noise Levels

Roadway Segment	Noise Level in dB(A) at 75 feet from Roadway Centerline	
	CNEL	Lnight
Roadways Adjacent to Approved Festival Site		
Avenue 49: West of Monroe	56.5	45.2
Avenue 50: Jefferson to Madison	66.4	49.2
Avenue 50: Madison to Monroe	59.6	48.2
Avenue 50: Monroe to Jackson	61.3	50.0
Avenue 52; Jefferson to Madison	71.9	56.5
Avenue 50: Madison to Monroe	70.7	49.5
Avenue 52: Monroe to Jackson	70.1	48.9
Roadways in Surrounding Area		
Avenue 48: Dune to Jefferson St	71.0	55.6
Avenue 48: Jefferson to Madison	73.3	57.9
Avenue 48: Madison to Monroe	68.3	57.0
Avenue 48: Monroe to Jackson	68.0	50.8
Avenue 48: Jackson to Calhoun	71.4	50.1
Avenue 49: Rancho La Quinta	67.0	55.6
Avenue 49: Jefferson to Madison	55.4	44.0
Avenue 50: Jess Anne to Jefferson	70.7	55.3
Avenue 50: Jackson to Calhoun	65.4	50.0
Avenue 52: Centrino to Jefferson	71.9	56.5
Avenue 52: Jackson to Calhoun	70.1	48.9

Note:
Calculations are provided in ***Appendix A.***
Right-of-way width for all listed roadways range from a minimum of 84 feet to 124 feet.

c. Aircraft Noise Levels

The Approved Project, and prior festival events, have resulted in an increase in air traffic in previous years in the vicinity of the Approved Festival Site by small aircraft towing advertising banners and other aircraft. For the Festival events, the Federal Aviation Administration (FAA) issued a Notice to Airmen (NOTAM) in 2012 that aircraft should not fly below 2,000 feet when within a two mile radius of the site. While there should be no flyovers because of this NOTAM, flyovers may occur if a pilot does not operate in compliance with this restriction, and for this reason noise does occur from occasional flyovers during Festival events.

d. Vibration Conditions

Based on field observations, the primary source of existing groundborne vibration in the vicinity of the Approved Festival Site is vehicle traffic on local roadways. According to the Federal Transit Administration (FTA),6 typical road traffic induced vibration levels are unlikely to be perceptible by people. Trucks and buses typically generate groundborne vibration velocity levels of approximately 63 VdB (at 50 feet distance), and these levels could reach 72 VdB when trucks and buses pass over bumps in the road. A vibration level of 72 VdB is above the 60 VdB level of perceptibility.

D. REGULATORY SETTING

The following regulatory information has been updated since the 2012 Noise Report. Regulatory information that has not changed remains the same and is located in the 2012 Noise Report.

1. Local Regulations

a. City of Indio Noise Ordinance

Section §95C.09 of Indio's Noise Ordinance exempts outdoor gatherings, public dances, shows and sporting and entertainment events authorized by the City through the issuance of a permit or a previously approved development agreement. The Approved Project, as defined by the Major Music Festival Event Permit and the Development Agreement, consists of Festival events over three weekends in the Spring and two weekends in the Fall. Consistent with the Indio's Noise Ordinance, these events are exempt from the standards in the Indio Noise Ordinance. Motor vehicle traffic noise is also exempt from the ordinance.

b. Approved Major Music Festival Event Permit

The Approved Permit allows musical performances to start at 11:00 AM on each day. Musical performances are required to be over by 1:00 AM on Saturday and Sunday and 12:00 AM on Mondays for the Coachella Festivals and 12:00 AM Saturday, Sunday, and Monday for the Stagecoach Festival. Entertainment7 in the camping area are not allowed to continue after 1:30 AM on any night. No sounds checks are allowed to start before 10:00 AM on the day before the event.

(1) Sound Management Program

The Approved Project contains a requirement that an SMP be implemented for each Festival event starting with the 2014 Festivals. The SMP requires sound levels at the boundary of the Festival Site to not exceed 85 decibels over a 10 minute average period during the Festival events at Monroe Street and

6 Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, 2004.

7 Entertainment includes a movie, amplified music and a skating rink or such similar activities.

Avenue 50, Monroe Street and Avenue 51, Monroe Street and Avenue 52, Madison Street and Avenue 51, Madison Street and Avenue 52. The SMP requires that audio technicians make the appropriate adjustments during the events to ensure that the average 10 minute period does not exceed 85 dB(A).

2. Low Frequency Noise Criteria

There are no specific criteria for low frequency noise in the United States. The US EPA has guidelines for the protection of public health with an adequate margin of safety in terms of annual average A weighted day night average sound level, but there are no corrections or adjustments for low frequency noise. The US DOT has A-weighted sound pressure level criteria for highway projects and airports, but these do not have adjustments for low frequency noise.

However, the 2012 Noise Report did identify low frequency criteria to assess potential low frequency impacts that may be associated with the Project. One criteria compares Project operations to exceed 65 dB when the sound pressure levels for the 50 Hz, 63 Hz, 80 Hz, and 100 Hz frequencies are combined together.

3. Vibration Standards

As discussed in the 2012 Noise Report, the FTA groundborne vibration is applicable to the Modified Project as the vibration criteria are based on absolute ground vibration levels depending on the construction characteristics of the affected building (e.g., reinforced concrete, steel, or non-engineered timber buildings).

E. NOISE THRESHOLDS

Based on a review of noise plans, policies, and regulations and their applicability to the sources of noise associated with the Project, a significant noise impact would occur if the following thresholds would be exceeded:

- Project operations cause the exterior noise levels at a lot property line for a noise sensitive use to exceed 65 dB(A) CNEL where ambient noise levels are below 65 dB(A) CNEL. Project operations cause the ambient noise level measured at the property line of the affected noise sensitive uses to increase by 3 dB(A) CNEL where the existing exterior noise level already exceeds the City's exterior noise standard.
- Project operations cause interior noise levels for a noise sensitive use to exceed 45 dB(A) CNEL.
- Project operations cause the exterior average 10 minute noise level (Leq10) to increase 1.0 dB(A) over the ambient noise level measured at the property line of the affected noise sensitive uses when the ambient Leq10 is greater than 45 dB(A) between the hours of 10:00 PM and 7:00 AM and 55 dB(A) between the hours of 7:00 AM and 10:00 PM.

- Project related vehicular traffic causes the exterior noise level measured at the property line of the affected noise sensitive uses to exceed 45 dB(A) between the hours of 10:00 PM and 7:00 AM and 55 dB(A) between the hours of 7:00 AM and 10:00 PM. If existing noise levels already exceed City standards, than an increase of 3 dB(A) on affected noise sensitive receptors would constitute an impact.8
- Project related vehicular traffic causes the exterior noise level measured at the property line of the affected noise sensitive uses to increase by 3 dB(A) CNEL where the existing exterior noise level already exceeds the City's exterior noise standard.
- Cumulative or Project related vehicular traffic causes the exterior noise level measured at the property line of the affected noise sensitive uses to increase by 3 dB(A) CNEL where the existing exterior noise level already exceeds the City's exterior noise standard.
- Project operations cause exterior low frequency noise levels to exceed 65 dB when the sound pressure levels for the 50 Hz, 63 Hz, 80 Hz, and 100 Hz frequencies are combined together.
- Project operation activities cause groundborne vibration levels to exceed 80 VdB at the lot line for a sensitive use.

Furthermore, pursuant to the SMP, a significant noise impacts would occur if the following requirement is exceeded at the five monitoring locations:

- Project operations cause the maximum 10 minute average sound level to exceed 85 dB(A) at any of the five monitor locations during the Festival Events.

F. NOISE METHODOLOGY

1. Traffic Related Noise

Existing roadway noise levels were calculated using the Riverside County version of the Federal Highway Traffic Noise Prediction Model (FHWA-RD-77-108) developed by the Federal Highway Administration. Traffic counts were taken in March 2015 at eight representative intersections in the study area. The results were analyzed by key roadway corridor for each of the three time periods studied: (1) Friday (3:00 PM – 4:00 PM); (2) Saturday (2:00 PM – 3:00 PM); and (3) Monday (8:00 AM – 9:00 AM). When compared to the 2012 Traffic Study, Friday and Monday counts were slightly higher than the projections for the year 2015 and Saturday counts were slightly reduced. Therefore, 2015 traffic counts were used for the Friday and Monday periods, and the 2012 traffic counts were factored to represent the 2015 conditions. These traffic counts were converted to average daily trip (ADT) counts for the northbound, southbound, eastbound, and westbound approaches at each intersection analyzed. The average daily traffic (ADT) volume was used to calculate the noise level along each roadway segment.

8 This threshold assumes an hourly Leq of 45 dB(A) between the hours of 10:00 PM and 7:00 AM and 55 dB(A) between the hours of 7:00 AM and 10:00 PM

The period that would generate the largest increase in hourly vehicle trips within the Modified Festival Site area would be during a Friday from 3:00 PM to 4:00 PM. Other hours or days were not analyzed as traffic levels were lower than for the hours selected. Pursuant to the methodology in the 2012 Noise Study, the distribution of these trips was determined in the Approved Project's Transportation Study and input into the roadway noise model for this Noise Update.

2. Performance Area Layout

As part of the modification of the Approved Permit, the layout of the Performance Area would be modified for both the Modified Higher Attendance Level and Modified Lower Attendance Level, as shown in **Figure 2, Conceptual Modified Higher Attendance Performance Area Layout,** and **Figure 3, Conceptual Modified Lower Attendance Performance Area Layout.**

Figures 1 and **2** show the sound propagation pattern for the Modified Project with the different stage configurations proposed at these two festivals. In both configurations, the Main stage is oriented, and would continue to be oriented for the Festival events, to the south and west. The Outdoor stage oriented to the southwest at the Modified Higher Attendance Events uses a sound system with one fifth of the power of the Main stage system. The smaller performance areas located in tents also use much smaller sound systems than the Main stage. Due to the size of the Main stage sound system, the majority of sound generated during music performances at the Modified Higher Attendance Events would travel in a southerly direction that widens to the west and east the further south the sound travels. The low frequency sound generated by these sound systems is less-directional than the higher frequency sound. The Main stage, Outdoor stage, and smaller sound stages would remain unchanged for the Modified Higher Attendance Events when compared to the Approved Project. The Main stage and smaller stages would remain unchanged for the Modified Lower Attendance Events when compared to the 2012 Noise Report.

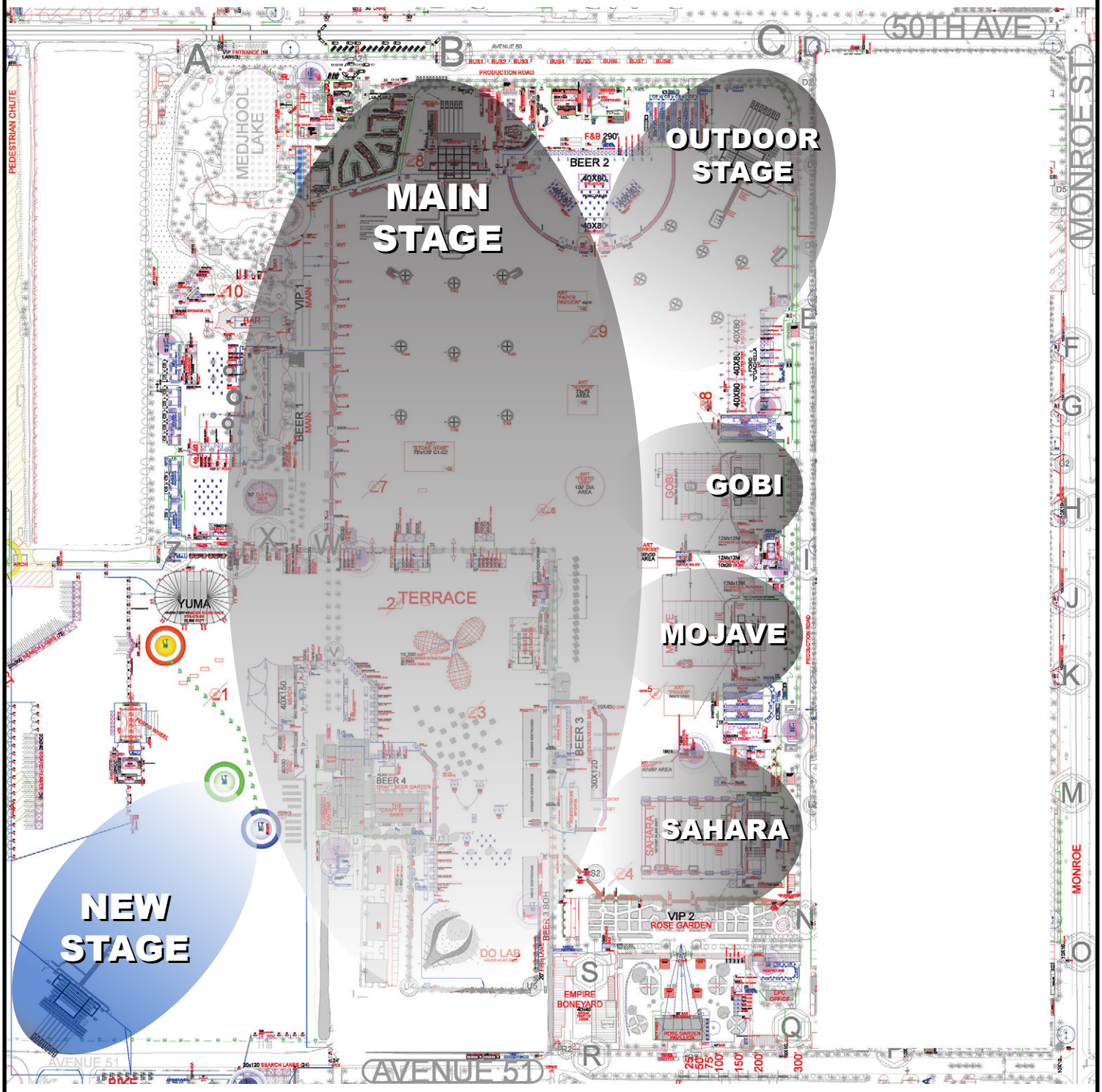
Consistent with the design of the Approved Project layout, loudspeakers would be mounted on the stage decks and delay loudspeaker clusters would be set up in front of the stages in order to provide a more uniform sound field in the Performance Area. All sound systems would be designed and operated to produce a sound level of 105 dB(A) at the front of house (FOH), an equipment area where music is mixed for the audience. The FOH is located approximately 150 feet from the front of the main outdoor stages. Loudspeaker arrays would be suspended from inside tent structures containing the smaller stages (identified as Gobi, Mojave, and Sahara for the Higher Attendance Events and Mustang and Palamino for the Lower Attendance Events on **Figures 2** and **3**). These elements would remain unchanged for the Modified Project.

As illustrated in **Figure 2**, the Performance Area would be expanded for the Higher Attendance Events to the south and would include an additional performance stage similar in size to the Outdoor stage. This new stage would be oriented to the northeast with the five original stages remaining similar to the orientation illustrated for the Approval Festival Site configuration. As discussed in detail below, the sound system from the Main Stage accounts for the majority of the musical performance noise due to the size of the sound system and the minimal amount of sound contribution from the other stages to the overall sound level.

The sound system for the new stage would include a series of distributed loudspeaker arrays from the stage to ensure coverage of the audience area in front of the stage, similar to the Outdoor stage directed to the southwest. The sound system for the new stage would be one-fifth of the power of the Main stage system and contain the same number of loudspeaker arrays as the Outdoor stage. This sound system is designed to serve an audience area that extends approximately 800 feet in front of the stage in order to not interfere with the sound from performances on the Main and Outdoor stages. This audience area is fully contained in the Performance Area and located 2,500 feet west from the edge of the site. As a result, the new stage would not add to the peak noise levels experienced by any surrounding off-site uses.

Similar to the 2012 Noise Report and monitored data from the 2015 Festivals (see Appendix B), performances would not be occurring at maximum sound levels at the same time as performances are scheduled to avoid overlap. The sound system for the new stage would be one-fifth of the power of the Main stage system, contain the same number of loudspeaker arrays as the Outdoor stage, and extend approximately 800 feet in front of the stage in order to not interfere with performances on the Main and/or Outdoor stages. Consequently, due to its location, orientation and the size of the sound system and the focus to the audience area in front of the stage, sound from performances on the new stage would be primarily contained within the Performance Area and would not result in any substantial increase in noise levels off the site to the northeast.

As illustrated in **Figure 3** the new stage for the Modified Lower Attendance Events would be oriented to the northeast with the three original stages to remain similar to the orientation illustrated for the Approved Festival Site configuration. This new stage would have a similar sound stage system as those used for the 2015 Festivals. As mentioned previously, the sound system from the Main stage accounts for the majority of the musical performance noise due to the size of the sound system and the minimal amount of sound contribution from other sages to the overall sound level. The Main stage would remain unchanged for the Modified Lower Attendance Events as described for the Approved Project. Again, due to its location, orientation and the size of the sound system, noise from the new stage would stay within the Modified Lower Attendance Level Performance Area and would not add to the peak noise levels experienced by any surrounding off-site uses.



NOT TO SCALE

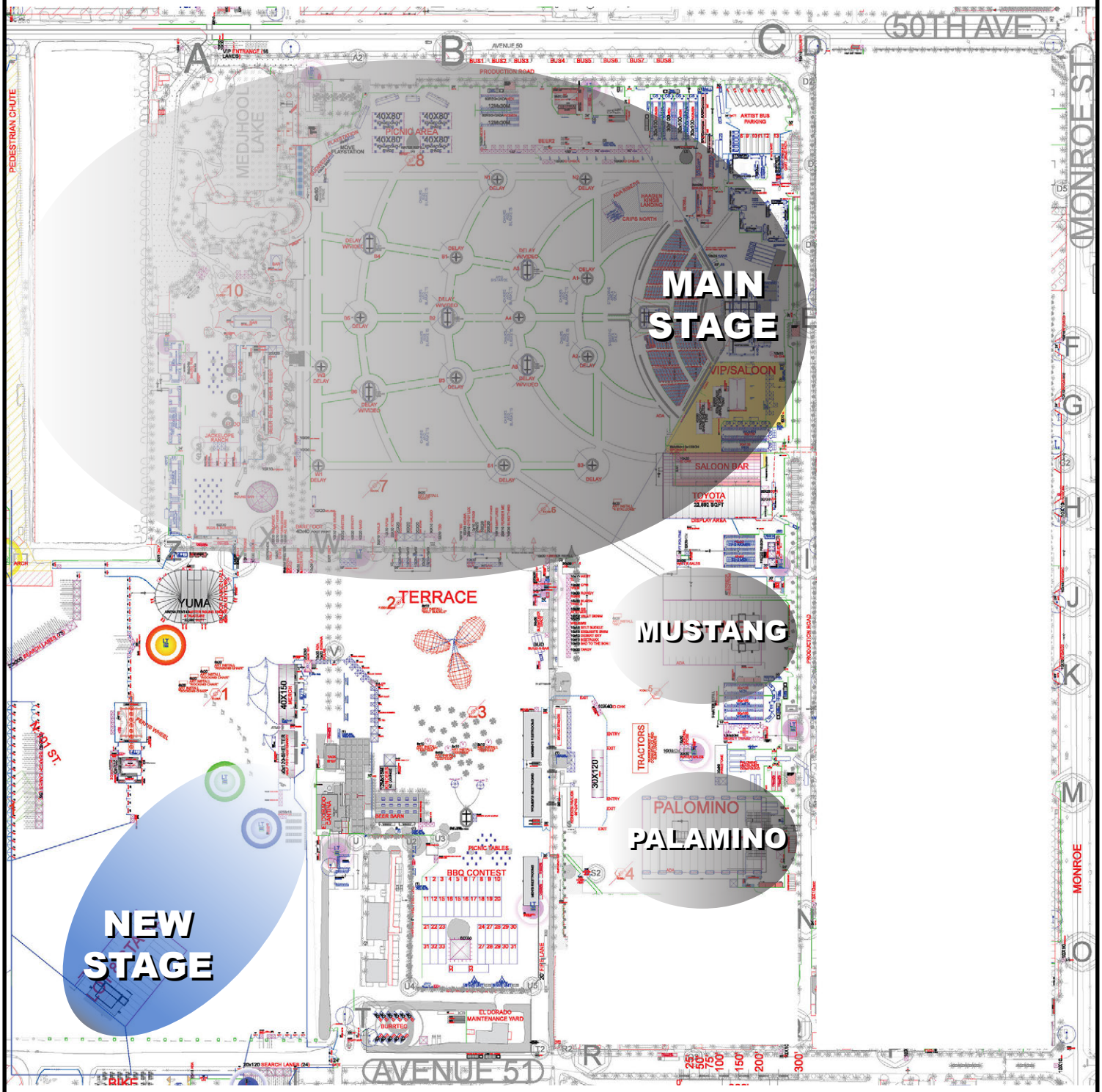
SOURCE: Coachella Music Festival, LLC / Goldenvoice, LLC.

FIGURE **2**

Meridian Consultants

Conceptual Modified Higher Attendance Performance Area Layout

028-004-15



NOT TO SCALE

SOURCE: Coachella Music Festival, LLC / Goldenvoice, LLC.

FIGURE **3**

Meridian Consultants

Conceptual Modified Lower Attendance Performance Area Layout

028-004-15

a. Music Performance Analysis

The methodology to analyze music performance noise levels from the Modified Project follows the methodology utilized in the 2012 Noise Report. As identified in the 2012 Noise Report, the Approved Project considered 2 scenarios to determine potential noise level impacts from music performances. The first scenario analyzed performances on all stages at once, with maximum power. This scenario was rejected as unrealistic because the performances are scheduled to avoid overlap and not all performances occur at maximum sound levels at the same time on a regular basis. The second scenario, which was used to analyze music performance sound levels during Approved Project festivals, was based on the sound produced by the sound system for the Main stage only at the Coachella Festival as it is the largest and the dominant noise source. The Main stage only scenario was confirmed by data in the 2012 Noise Report, and as such, the monitoring data from the 2012 Festivals was used to analyze potential noise impacts from music performances for the Approved Project.

Similar to the methodology in the 2012 Noise Report, the potential noise levels from music performances were analyzed based on the Main stage only scenario for the Modified Project for the following reasons. The Modified Project sound system for the five stages would include the maximum number of main loudspeakers and delay clusters for the size and configuration of the audience areas in front of all the stages, similar to the Approved Project. The new stage would also reflect the maximum number of main loudspeakers and delay clusters for the size and configuration of the audience areas in front of the stage. The number of loudspeakers and delay clusters would be similar to the Outdoor stage directed to the southwest. As discussed previously, the sound system for the Main stage would use the greatest number of speakers and would produce the highest amount of sound energy at the Festival events. The Main stage sound system for the Modified Project would include the same number of loudspeakers and delay clusters as the Main stage for the Approved Project. As a result of the Main stage sound power, the new stage would not impact the sound generated from the Main stage and would not leave the Performance Area. Thus, the new stage would not result in a new impact on off-site sensitive uses.

The sound system from the Approved Project, specifically from the 2015 Festivals, would remain the same for the Modified Project except for the new stage directed to the northeast. Based on the methodology and conclusion that the Main stage would operate under conditions similar to those under the Approved Project, sound generated from the Main stage would continue to be the primary music performance sound to leave the Performance Area and travel to the south. In addition, the low frequency sound generated by the Main stage is less-directional than the higher frequency sound and would be noticed to the northwest, northeast, west, and east as it travels from the stage. This would limit the sound generated from the new stage sound system to the area extending to the northeast (as

shown in **Figure 2** and **3**). Sensitive receptors to the north, northeast, east and southwest of the Performance Area, therefore, would not experience sound generated from the new stage and would continue to notice the sound generated from the Main stage. Consequently, the new stage would not impact measured sound levels at the nearest monitoring locations, Monroe Street and Avenue 50, Monroe Street and Avenue 51, and Monroe Street and Avenue 52. Therefore, the projected overall sound system from the Performance Area for the Modified Project would generate similar off-site sound levels as the Approved Project.

Land uses surrounding the Modified Festival Site and affected by noise due to Festival operations have not significantly changed since the 2012 Noise Report. Existing sensitive uses are located south of Avenue 52, west of Madison Street, north of Avenue 49 and east of Monroe Street. These uses include residential neighborhoods in the City of La Quinta to the south and west; vacant property and residential uses to the north; a private golf club, vacant property, and some single-family homes to the east.

d. Low Frequency Noise

Low frequency noise differentiates itself from noise that consists of a broader frequency spectrum in that it is more difficult to predict both loudness and the associated likely level of annoyance accurately. Even though the A-weighting is useful as an approximate estimation of annoyance for mid to high frequency noise, it underestimates the perceived loudness of low frequency noise. Because the Festival events would include entertainment noise sources and fireworks, these sources are assessed using the 50 to 100 Hz frequency range as opposed to addressing noise impacts in terms of the standard dB(A) level used in general environmental noise analysis and land use planning.

As discussed in the 2012 Noise Report, low frequency noise was analyzed by combining the 50 Hz, 63 Hz, 80 Hz and 100 Hz frequencies. Similar to the methodology in the 2012 Noise Report, the highest 2015 Festival performance day was used to determine potential low frequency impacts during the Modified Project.

G. FESTIVAL PLAN FEATURES

The following festival plan features were identified in the 2012 Noise Report and have been adopted with approval of the Music Festivals Plan Project. These features were taken into account for the analysis of potential impacts.

FPF NOISE-1 The Festival Operator will not allow musical performances to start earlier than 11:00 AM each festival event day and will require musical performances to end by 1:00 AM on Saturday and Sunday and 12:00 midnight on Mondays during the Higher Attendance

Festivals and 12:00 midnight Saturday, Sunday, and Monday for the Lower Attendance Festivals.

FPF NOISE-3 The Festival Operator will not allow entertainment9 in the Camping Areas to continue after 1:30 AM during any Future Festival.

FPF NOISE-4 The Festival Operator will coordinate with the Federal Aviation Administration (FAA) to issue a notice restricting aircraft from flying lower than 2,000 feet within 2 miles of the Future Festival Site.

FPF NOISE-5 The Festival Operator will provide signage along paths and sidewalks around the Future Festival Site which states "Concert patrons please be quiet and respectful of the surrounding neighboring residences," or some other similar language.

Additional instructions will also be provided in the Private Security Plan to instruct private security, or other staff, watching/patrolling neighboring residents to notify patrons to be respectful and quiet along these routes.

The following festival plan feature has been modified for the Modified Project and shall be implemented by the Festival Operator to avoid or reduce potential noise impacts of the Modified Project.

FPF NOISE-2 The Festival Operator will not allow sound checks before 10:00 AM on any day before each Festival event or before 8:00 AM on any day during each Festival event.

H. MITIGATION MEASURE

The following mitigation measure identified in the 2012 Noise Report was adopted with approval of the Music Festivals Plan Project.

MM NOISE-1 The Festival Operator shall implement a Sound Management Program (SMP) to reduce offsite sound propagation while maintaining an appropriate and suitable sound environment for music performances during the Festival events. The SMP was prepared and provided to the City prior to the first Festival in 2014 and would be updated as needed to reflect changes in technology or Future Festival operations.

The initial SMP shall specify changes to the design and operation of the sound system for the primary outdoor stages, and other performance areas, including, but not limited to, the individual measures identified below:

9 Entertainment includes a movie, amplified music and a skating rink or such similar activities.

- Prevent performing artists from adding additional subwoofers to the loudspeaker system as designed and installed in order to maintain more control and predictability over low frequency sound levels.

- Implement a cardioid subwoofer configuration on the main stage for Conceptual Performance Area Layout 1 (Coachella Festival). This involves configuring the subwoofer loudspeaker array in such a way as to introduce cancellation and reduction of low frequencies radiated to the rear sides and rear of the subwoofer array.

- Implement a 'delayed arc' subwoofer configuration for Conceptual Performance Area Layout 2 (Stagecoach Festival) Implement a cardioid subwoofer configuration on the subwoofers in the Sahara dance tent at the Coachella Festival and any similar entertainment area at any Future Festival to create a directional configuration to reduce low frequency sound levels.

- Reduce the level of low frequency energy sent to the main hanging speaker arrays to minimize long distance propagation of low frequency noise.

- Use the latest technology available, such as 3D modeling with laser assisted focusing, to direct the sound system to optimize coverage within the audience area in front of each stage. This technology would utilize lasers and inclinometers in conjunction with measurements of the exact height the hanging speaker arrays on the sides of the outdoor stages to assure precise accuracy in the setup. The accuracy is precise to 0.5 of a degree on the angles between hanging loudspeakers. This will minimize offsite sound levels by aiming and optimizing the sound produced in the audience area and will reduce the overall sound volume needed to produce high quality sound in the audience area.

- Conduct noise monitoring during the Festival events at the intersections of Monroe Street/Avenue 50, Monroe Street/Avenue 51, Monroe Street/Avenue 52, Madison Street/Avenue 50 and Madison Street/Avenue 52. Noise monitoring shall be conducted with equipment that reports live monitoring information remotely and has the capability to make audio recordings.

    - The maximum 10 minute average period shall not exceed 85 dB(A) at any of the five monitor locations during the Future Festivals.

    - Provide for the noise monitoring data to be reported live to the audio technicians operating the sound systems to allow for active monitoring of the sound pressure levels at different sound frequencies being radiated offsite. Active monitoring by the sound engineers would allow for

adjustments to be made during the events to ensure off site sound levels remain lower than 85 dB(A) over 10 minute average periods at all times.

- The audio technicians shall make appropriate adjustments to reduce sound levels to ensure that the average 10 minute period does not exceed 85 dB(A).

- Based on noise monitoring conducted at the 2012 Festivals and 2014 Festivals, determine if the Sound Management Plan resulted in a 6 dB reduction in peak sound levels and a 3 dB reduction in average sound levels during musical performances from the sound levels for the Existing Festivals.

I. RESULTS AND ANALYSIS

1. Modeled Roadway Results and Analysis

Motor vehicle traffic is the largest noise generator throughout the City. The existing noise level already exceeds the City's exterior noise standard of 65 dB(A) CNEL at the property lines, thus an increase of 3 dB(A) CNEL or more over existing levels would result in significant impacts. Model results are shown in **Table 4**, **Modified Festivals (2017) North/South Roadway Noise Levels**. As shown, CNEL increases resulting from the Modified Project related traffic traveling northbound/southbound range from a low of 0.0 dB(A) (along several locations throughout the City) to a high of 1.8 dB(A) (Jackson Street between Avenue 50 and Avenue 52) 75 feet from the middle of the roadway. Modeled sound levels along Jackson between Avenue 50 and 52 would be 64.1 dB(A) CNEL. The sound level generated by outbound traffic along Jackson Street between Avenue 50 and Avenue 52 would not result in a noticeable change in sound volume by residential uses along Jackson Street. Similar to the 2012 Noise Study, Modified Project noise level increases along roadway segments would be less than 3 dB(A) CNEL, and as such, not exceed the identified threshold.

As shown, nighttime (Lnight) noise increases resulting from Modified Project related traffic traveling northbound/southbound range from a low of 0.0 dB(A) (several locations throughout the City) to a high of 1.9 dB(A) (Jackson Street from Avenue 50 to Avenue 52) 75 feet from the middle of the roadway. Modeled sound levels along Jackson between Avenue 50 and 52 would be 44.2 dB(A) Lnight. It is important to note that proposed outbound travel routes would utilize Jefferson Street, Monroe Street, and Jackson Street at an average speed of 25 miles per hour. Noise level increases along roadway segments would be less than 3 dB(A) CNEL, and as such, not exceed the identified threshold.

Modified Project interior noise levels would be attenuated by 25 dB(A) from outdoor noise levels. As such, the indoor noise levels generated by Modified Project traffic would be reduced approximately 25

dB(A). Similar to the 2012 Noise Study, the Modified Project would result in less than significant impacts to Lnight noise levels and no new significant impact would occur.

Table 4
Modified Festivals (2017) North/South Roadway Noise Levels

Roadway Segment	Noise Level in dB(A) at 75 ft. from Roadway Centerline					
	Existing Conditions - CNEL	Project Conditions - CNEL	CNEL Change	Existing Conditions – Lnight	Project Conditions Lnight	Lnight Change
Roadways Adjacent to Modified Festival Site						
Madison St: South of Avenue 48	60.2	60.2	0.0	44.8	44.8	0.0
Madison St: north of Avenue 50	61.5	61.5	0.0	46.1	46.1	0.0
Madison St: Ave 50 to Ave 52	65.4	65.4	0.0	50.0	50.0	0.0
Madison St: Ave 52 to Ave 54	70.2	70.2	0.0	54.8	54.8	0.0
Hjorth St: Ave 48 to Ave 49	65.0	65.0	0.0	53.6	53.6	0.0
Monroe St: Ave 49 to Ave 50	62.6	63.7	1.1	45.3	46.5	1.2
Monroe St: Ave 50 to Ave 52	62.6	63.7	1.1	45.3	46.5	1.2
Monroe St: Ave 52 to Ave 54	60.5	60.7	0.2	43.3	43.5	0.2
Roadways in Surrounding Area						
Monroe St: north of Ave 48	68.6	69.3	0.7	51.4	52.1	0.7
Monroe St: Ave 48 to Ave 49	65.0	66.1	1.1	47.8	48.9	1.1
Jefferson St: north of Ave 48	74.9	75.2	0.3	53.7	54.0	0.3
Jefferson St: Ave 48 to Ave 49	75.1	75.4	0.3	53.8	54.1	0.3
Jefferson St: Ave 49 to Ave 50	74.0	74.3	0.3	52.7	53.1	0.4
Jefferson St: Ave 50 to Ave 52	74.0	74.0	0.0	58.6	58.6	0.0

Roadway Segment	Noise Level in dB(A) at 75 ft. from Roadway Centerline					
	Existing Conditions - CNEL	Project Conditions - CNEL	CNEL Change	Existing Conditions – Lnight	Project Conditions Lnight	Lnight Change
Jefferson St: Ave 52 to Ave 54	72.7	72.7	0.0	57.3	57.3	0.0
Jackson St: Hwy 111 to Ave 48	70.5	71.1	0.6	53.7	53.9	0.2
Jackson St Ave 48 to Ave 50	63.5	65.0	1.5	46.3	47.7	1.4
Jackson St: Ave 50 to Ave 52	59.6	61.4	1.8	42.3	44.2	1.9
Jackson St: Ave 52 to Ave 54	61.7	61.7	0.0	50.4	50.4	0.0

*Calculations are provided in **Appendix A**.*
It should be noted that the right-of-way widths for all listed roadways range from a minimum of 84 feet to 124 feet.

Table 5, Modified Festivals (2017) East/West Roadway Noise Levels, identified the modeled roadway noise along eastbound/westbound roadways within the Modified Festival Site vicinity. As shown, CNEL increases resulting from the Modified Project related traffic traveling eastbound/westbound range from a low of 0.0 dB(A) (along several locations throughout the City) to a high of 1.4 dB(A) (Avenue 50 from Jefferson Street to Madison Street) 75 feet from the middle of the roadway. As shown, nighttime noise increases resulting from the Modified Project related traffic traveling eastbound/westbound range from a low of 0.0 dB(A) (along several locations throughout the City) to a high of 1.6 dB(A) (Avenue 50 from Jefferson Street to Madison Street) 75 feet from the middle of the roadway. The 2012 Noise Report identified a significant CNEL (increase of 4.8 dB(A) CNEL above existing conditions) and nighttime (increase of 7.5 dB(A) Lnight above existing conditions) noise impact along Avenue 50 between Jefferson Street and Madison Street. The sound level generated by outbound traffic along Avenue 50 from Jefferson Street to Madison Street would not result in a noticeable change in sound volume by residential uses along Avenue 50. The sound level generated by outbound traffic from Modified Project traffic would increase CNEL by 1.4 dB(A) and increase Lnight by 1.6 dB(A), below the 3 dB(A) increase above existing conditions threshold. Therefore, the Modified Project would not result in a noticeable change in sound volume by residential uses along Avenue 50 from Jefferson Street to Madison Street. No new significant impacts would occur with the Modified Project.

All other adjacent and surrounding roadways would not exceed 3 dB(A) over ambient conditions and would result in less than significant impacts. The noise reduction from the building insulation would be approximately 25 dB(A), with windows closed, which would result in traffic related interior nighttime noise levels below 35 dB(A) along east/west roadways.

Table 5
Modified Festivals (2017) East/West Roadway Noise Levels

Roadway Segment	Noise Level in dB(A) at 75 ft. from Roadway Centerline					
	Existing Conditions – CNEL	Project Conditions – CNEL	CNEL Change	Existing Conditions – Lnight	Project Conditions – Lnight	Lnight Change
Roadways Adjacent to Modified Festival Site						
Ave 49: west of Monroe	56.5	56.5	0.0	45.2	45.2	0.0
Ave 50: Jefferson to Madison	66.4	67.8	1.4	49.2	50.8	1.6
Ave 50: Madison to Monroe	59.6	59.6	0.0	48.2	48.2	0.0
Ave 50: Monroe to Jackson	61.3	61.3	0.0	50.0	50.0	0.0
Ave 52: Jefferson to Madison	71.9	71.9	0.0	56.5	56.5	0.0
Ave 52: Madison to Monroe	70.7	70.7	0.0	49.5	49.5	0.0
Ave 52: Monroe to Jackson	70.1	71.3	1.2	48.9	50.0	1.1
Roadways in Surrounding Area						
Ave 48: Dune to Jefferson St	71.0	71.0	0.0	55.6	55.6	0.0
Ave 48: Jefferson to Madison	73.3	73.3	0.0	57.9	57.9	0.0
Ave 48: Madison to Monroe	68.3	68.3	0.0	57.0	57.0	0.0
Ave 48: Monroe to Jackson	68.0	68.1	0.1	50.8	50.8	0.0
Ave 48: Jackson to Calhoun	71.4	71.4	0.0	50.1	50.2	0.1
Ave 49: Rancho La Quinta to Jefferson	67.0	67.0	0.0	55.6	55.6	0.0
Ave 49: Jefferson to Madison	55.4	55.4	0.0	44.0	44.0	0.0
Ave 50: Jess	70.7	70.7	0.0	55.3	55.3	0.0

Roadway Segment	Noise Level in dB(A) at 75 ft. from Roadway Centerline					
	Existing Conditions – CNEL	Project Conditions – CNEL	CNEL Change	Existing Conditions – Lnight	Project Conditions – Lnight	Lnight Change
Anne to Jefferson						
Ave 50: Jackson to Calhoun	65.4	65.4	0.0	50.0	50.0	0.0
Ave 52: Centrino to Jefferson	71.9	71.9	0.0	56.5	56.5	0.0
Ave 52: Jackson to Calhoun	70.1	71.3	1.2	48.9	50.0	1.1

*Calculations are provided in **Appendix A**.*
It should be noted that the right-of-way widths for all listed roadways range from a minimum of 84 feet to 124 feet.

a. 2015 Monitoring Data

The average sound level at each of the five monitoring locations over each day of the 2015 Festivals is presented in Appendix B. The sound data was collected during the 2015 Festivals over three consecutive weekends from April 10, 2015, through April 26, 2015.

The 2012 Noise Report indicated that the projected average 24 hour CNEL noise levels for the Approved Project ranged from 68.7 dB(A) to 76.4 dB(A). Projected 10 minute averages ranged from 53.4 to 80.6 dB(A) for the Approved Project. The projected low frequency noise levels ranged from 61.5 dB to 66.8 dB for the Approved Project.

As shown in Appendix B, the average 24 hour CNEL over the course of the 2015 Festivals ranged from 65.1 dB(A) to 76.1 dB(A) at all locations. The average 10 minute sound levels over 24 hours at the five stationary meter locations during the 2015 Festivals ranged from a low of 54.1 dB(A) to a high of 79.7 dB(A). The highest recorded 10 minute low frequency averages during the 2015 Festivals occurred on Saturday, April 11, and indicated that the combined 50 Hz, 63 Hz, 80 Hz, and 100 Hz frequencies for each location were below 65 dB. As required by the SMP, the 2015 Festival incorporated changes to the overall sound system to reduce off-site noise levels. The 2015 Festival monitoring data confirms that the projections in the Final EIR were fairly accurate and that overall noise during a Festival Event decreased.

b. 24 Hour CNEL Noise Analysis

As identified in the 2012 Noise Report, the Approved Project resulted in a significant 24 hour CNEL noise level impact to sensitive receptors at the two analyzed monitoring locations: Monroe Street/Avenue 50 and Madison Street/Avenue 52.

As indicated in the 2012 Noise Report, 24 hour noise levels ranged from 72 dB(A) along Avenue 50 to 67 dB(A) along Avenue 52, above the exterior noise levels identified in the City of Indio General Plan of 65 dB(A) CNEL. The changes in a noise level of less than 3 dB(A) are not typically noticed by the human ear.[10] Changes from 3 to 5 dB(A) may be noticed by some individuals who are extremely sensitive to changes in noise. An increase of greater than 5 dB(A) is readily noticeable, while the human ear perceives a 10 dB(A) increase in sound level to be a doubling of sound volume.

As previously discussed, ambient levels have generally remained the same around the Festival Site since certification of the Final EIR. The typical ambient noise levels along the northern portion of the site are 72 dB(A) CNEL. The Approved Project resulted in an increase of 4.4 dB(A) CNEL higher than ambient noise levels at Monroe Street and Avenue 50. The projected overall sound leaving the Performance Area during the Modified Project, with implementation of mitigation already identified in the 2012 Noise Report, would result in similar levels as those projected in the 2012 Noise Report. Therefore, the Modified Project projected noise levels along the northern portion of the site would remain similar to, and consistent with, the Approved Project projected 24 hour CNEL noise level of 76.4 dB(A). Similar to the Approved Project, the projected increase above ambient under the Modified Project would not be substantially greater than under the Approved Project. Furthermore, because the ambient noise levels have remained consistent over the years, the Modified Project would not result in a substantial increase in the severity of the significant impact.

The 2012 Noise Report identified an interior noise level of 51.4 dB(A) CNEL after building insulation with windows closed along the northern portion of the site. The projected overall sound leaving the Performance Area during the Modified Project, with implementation of mitigation already identified in the 2012 Noise Report, would result in similar levels as those projected in the 2012 Noise Report. Therefore, the Modified Project projected noise levels along the northern portion of the site would remain similar to, and consistent with, the Approved Project projected 24 hour CNEL interior noise level of 51.4 dB(A). Therefore, the Modified Project would continue to result in a similar significant interior noise impact and would not result in a substantial increase in the severity of the impact.

Ambient noise levels along the southern portion of the site are 67 dB(A) CNEL. The Approved Project resulted in an increase of 3.9 dB(A) CNEL higher than ambient noise levels at Madison Street and Avenue 52. As previously discussed, the overall sound leaving the Performance Area during the Modified Project, with implementation of mitigation already identified in the 2012 Noise Report, would result in similar levels as those projected in the 2012 Noise Report. Therefore, the Modified Project projected noise levels along the southern portion of the site would remain similar to, and consistent with, the

10 U.S. Department of Transportation, Federal Highway Administration, Fundamentals and Abatement of Highway Traffic Noise, (Springfield, Virginia: U.S. Department of Transportation, Federal Highway Administration, September 1980), p. 81.

Approved Project projected 24 hour CNEL noise levels of 67.5 dB(A). Similar to the Final EIR, the projected increase above ambient under the Modified Project would not be substantially greater than under the Approved Project. Furthermore, because the ambient noise levels have remained consistent over the years, the Modified Project would not result in a substantial increase in the severity of the significant impact.

c. Average 10 Minute Noise Analysis

The 2012 Noise Report identified significant 10 minute average noise level impacts to sensitive receptors at all monitoring locations. As indicated in the 2012 Noise Report, ambient 10 minute average noise levels ranged from 42 to 80 dB(A) and have generally remained the same around the Festival Site since certification of the Final EIR.

As previously discussed, the Modified Project sound system would be set up similar to the Approved Project and the new stage would not add to the peak noise levels experienced by any surrounding off-site uses. Similar to the Approved Project, the Modified Project is projected to exceed ambient by 9 to 15 dB(A) during the day and 7 to 18 dB(A) during the nighttime periods. The Modified Project projected noise increases would be more than 1 dB(A) above ambient, exceed the threshold of 55 dB(A) Leq10 between 7:00 AM and 10:00 PM, and exceed the threshold of 45 dB(A) Leq10 between 10:00 PM and 7:00 AM. Therefore, it is anticipated that significant day and nighttime noise impacts would continue to occur with the Modified Project with implementation of mitigation measure NOISE-1 already identified in the 2012 Noise Report. Similar to the 2012 Noise Report, the projected increase above ambient under the Modified Project would not be substantially greater than under the Approved Project. It should be noted that the implementation of the SMP during the 2015 Festivals did lower 10 minute average noise levels around the Festival site. No new impacts or a substantial increase in the severity of an impact would occur.

d. Low Frequency Sound

Musical performance sound equipment and subwoofers generally produce low frequency noise between 50 Hz and 100 Hz, these frequencies were analyzed to determine if there was a correlation between the musical performance times and the monitored readings. Appendix B includes the highest low frequency noise levels at each of the five monitoring locations on Saturday, April 11, 2015. Subwoofers operate mostly in the 80 Hz frequency and generate the most low frequency noise. Therefore, the most realistic range to analyze potential low frequency noise is the averaged frequency ranges between 50 Hz and 100 Hz. The average person starts to detect low frequency noise levels above

45 dB.11 Exterior low frequency noise levels which exceed 65 dB when the sound pressure levels for the 50 Hz, 63 Hz, 80 Hz, and 100 Hz frequencies are combined together at the noise monitor locations would be perceptible by the average person. The 2012 Noise Report indicated that the Approved Project did exceed the 65 dB threshold at 2 locations, Monroe Street/Avenue 51 and Madison Street/Avenue 52, and projected close to the 65 dB threshold at Monroe Street and Avenue 52. As previously discussed, the Modified Project sound system would be set up similar to the Approved Project and the new stage would not add to the peak noise levels experienced by any surrounding off-site uses. Therefore, it is anticipated that low frequency impacts would continue to occur with the Modified Project with implementation of mitigation measure NOISE-1, similar to the Approved Project. It should be noted that the implementation of the SMP during the 2015 Festivals did lower low frequency noise levels at these three locations. Therefore, a substantial increase in the severity of previously identified impact would not occur.

e. Sound Checks

As part of the Modified Project and discussed in **Section 2.0**, the Festival Operator has requested that FPF Noise 2 be modified allow sound checks after 10:00 AM on any day before each Festival event and after 8:00 AM on any day during each Festival event.

As stated previously, the Main stage has the largest sound system and is the dominant source of noise within the Modified Festival Site. Consequently, sound checks performed at this stage would generate higher noise levels when compared to the other stages. The Festival Operator is not allowed to operate sound checks before 10:00 AM on any day before or during each Festival event. Under the Modified Project, sound checks would be permitted intermittently at one stage at a time after 10:00 AM on any day before each Festival event and after 8:00 AM on any day during each Festival event. As shown in Figure 15 in the 2012 Noise Report, sound check noise levels from the Main Performance Area would attenuate to approximately 69 dB(A) to the residences south of the Festival Site along Avenue 52. Average ambient 10 minute sound levels within the vicinity Monroe Street and Avenue 52 ranged from 42 dB(A) to 80 dB(A). Therefore, noise levels from intermittent sound checks that would occur earlier during Festival event days would be within ambient noise levels currently existing at the Modified Festival Site. No new significant impacts or a substantial increase in previously identified impacts would occur.

11 The threshold of audibility for low frequency noise levels is 45.3 dB when the 50 Hz, 63 Hz, 80 Hz, and 100 Hz frequencies are combined.

f. Generator Noise

As identified in the 2012 Noise Report, the Approved Project included approximately 60 onsite generators and approximately 160 light towers. There would be approximately 63 onsite generators that provide power and would be operating during the Modified Project, an increase of 3 generators. Noise levels associated with the onsite generators would range between 53 to 68 dB(A) at 50 feet. Similar to the Approved Project, these sources would be primarily located internal to the Modified Festival Site within areas needing substantial power, such as the Performance Area. Additionally, there would be approximately 200 light towers powered by small diesel engines located throughout the Modified Festival Site, an increase of 40 light towers. The 53 to 68 dB(A) noise levels would be associated with the light towers located primarily in the Parking Areas and along pedestrian paths within the Modified Festival Site. Overall, these sources are part of the musical performance noise source and as such contribute to the overall noise emanating from the Modified Project. Therefore, similar to the 2012 Noise Report, these sources contribute to a significant noise impact and the increase in generators would not result in a substantial increase in noise levels at off-site sensitive receptors.

g. Aircraft

Although not operated by the Festival Operator, it is anticipated that there would be propeller aircraft flying overhead the Modified Festival Site. The Festival events, have resulted in an increase in air traffic in previous years in the vicinity of the Modified Festival Site by small aircraft towing advertising banners and other aircraft. For the Festival events, the FAA issues a NOTAM that aircraft should not fly below 2,000 feet when within a two mile radius of the site. While there should be no flyovers because of this NOTAM, flyovers may occur if a pilot does not operate in compliance with this restriction, and for this reason noise from occasional flyovers is addressed below.

Aircraft noise would be temporary in nature but would contribute to the average 10 minute Leq which would exceed outdoor noise levels of 45 dB(A). As the Festival Operator does not have control over aircraft flights in the Modified Festival Site area, impacts would be considered significant. The number of aircraft operating during the Modified Project would be similar to the number operating during the Approved Project. Therefore, the increase in the severity of the previously identified significant impact would not be substantial.

h. Pedestrians

The primary pedestrian routes to the Modified Festival Site occur along a segment of Avenue 49, along Avenue 50 at entrances to/from the General Admission Parking and Shuttle areas, and a small segment near both the intersections of Avenue 52/Monroe Street and Avenue 52/Madison Street. Pedestrians associated with the concert are not allowed on Madison Street, Avenue 52, and Monroe Street but

some occasional pedestrians do infringe in these areas and walk along these segments. Shuttle waiting areas are located north of Avenue 50 and east of Hjorth. Sound levels generated by people along the pedestrian routes to the Modified Festival Site and in gathering areas, such as the shuttle waiting areas, would vary depending on the background environments (e.g., amplified music, traffic), and individuals' voice efforts (e.g., loud voice, laughing, shouting). Sound levels generated by an individual's voice vary from 50 dB(A) (Leq at 3.3 feet) for a female speaking in casual voice to 88 dB(A) (Leq at 3.3 feet) for a male person in a shouting voice.12 These sound levels in a quieter noise environment, such as in the early morning hours after the conclusion of a musical performance, could be a source of annoyance to surrounding residents. The nearest sensitive use would be approximately 50 feet from adjacent sidewalks within the public right-of-way. Assuming a noise attenuation of 6 dB for every doubling distance, noise levels would be expected to range from 26 dB(A) to 64 dB(A), consistent with noise levels along the southern boundary of the site. Overall, these sources would be part of the Modified Festival noise source and as such contribute to the overall noise emanating from the Modified Project. The Modified Project would not result in a substantial increase in the severity of the previously identified significant impact.

i. Fireworks

Pursuant to festival plan feature FPF Land Use 1 as adopted with approval of the Music Festivals Plan Project, the Modified Project would be limited to 15 fireworks display shows (once per festival day) and up to five minutes in length. The noise levels projected for the Approved Project would result in similar noise levels for the Modified Project. Accordingly, no new significant impact or a substantial increase in the severity of the impact would occur with implementation of the Modified Project.

j. Other Coachella Valley Events

The Modified Project would increase the size of the Festival Site and the attendance for each Festival event. However, the Modified Project would not coincide with other major special events occurring in Indio. Any such events in the City of Indio would be subject to the issuance of temporary or special event permits as permitted by the applicable zoning and the General Plan. Special events in other communities in the Coachella Valley while the Festival events are taking place would be subject to the issuance of similar permits by these jurisdictions. Specific development projects, which are in accordance with the applicable planning standards, that are planned within the City and adjacent communities are comprised of smaller infill projects within the Cities of Indio and La Quinta, with limited long-term land uses changes occurring in the vicinity of the Modified Festival Site. Accordingly, no

12 Cyril M. Harris, *Handbook of Acoustical Measurements and Noise Control*, Third Edition, (1991) Table 16.1.

significant cumulative noise impacts would occur because many of these projects will be subject to local noise ordinances.

2. Vibration Results and Analysis

The use of heavy equipment, such as fork lifts and booms (or lifts), would be limited to the Performance Area of the site during setup and break down and would result in approximately 76 VdB 50 feet from the source of the equipment, similar to the Approved Project.13 The Modified Project would increase the number of heavy equipment by 14 vehicles when compared to the Approved Project.

Operation of the heavy equipment, shuttle buses, and water trucks generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the site often varies depending on soil type, ground strata, and construction characteristics of the receiver buildings.

Trucks and buses typically generate groundborne vibration velocity levels of around 63 VdB (at 50 feet distance), and these levels could reach 72 VdB when trucks and buses pass over bumps in the road, which would be below the level of perceptibility. Water trucks would travel along the shoulder of the roadways immediately surrounding the Modified Festival Site and within the Parking Areas.

Two of the 14 additional heavy equipment vehicles would include water trucks. A water truck at 50 feet would generate approximately 77 VdB. Similar to the Approved Project, the water trucks would travel within and around the adjacent of the Modified Project Site. The incremental increase in the number of water trucks would continue to result in infrequent events, less than 30 events, during the day of each Festival event. Accordingly, the vibration levels generated by various vehicles during the Festival events would be below the FTA's vibration impact threshold of 80 VdB for residences. Impacts would be less than significant and no new significant impact would occur.

J. CONCLUSION

The Modified Project would not result in a new significant noise or vibration impact or a substantial increase in the severity of an identified impact when compared to the Approved Project.

13 US DOT, *Transit Noise and Vibration Impact Assessment*, May 2006, p. 12-12. It should be noted that there were no vibration levels for forklifts or booms. As such, the loader vibration level as been used for the forklifts and booms.

Appendix A

Roadway Noise Calculations

Music Festivals Plan
On-Site Noise Contours Using Riverside County 24-Hour Traffic Distribution
Existing Conditions - NB/SB

ROADWAY NAME / Segment	Number of Lanes in Each Direction	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor (1)	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	Distance from Center of Roadway: CNEL at 75 Feet	DISTANCE TO CONTOUR: 75 CNEL	70 CNEL	65 CNEL	60 CNEL
ROADWAY NAME												
Jefferson St: Hwy 111 to Ave 48	3	24	29,810	40	0	3.0%	5.0%	74.9	-	229	713	2,215
Jefferson St: Ave 48 to Ave 49	3	24	30,800	40	0	3.0%	5.0%	75.1	76	237	736	2,288
Jefferson St: Ave 49 to Ave 50	3	24	24,200	40	0	3.0%	5.0%	74.0	-	187	581	1,804
Jefferson St: Ave 50 to Ave 52	3	24	24,200	40	0	3.0%	5.0%	74.0	-	187	581	1,804
Jefferson St: Ave 52 to Ave 54	3	24	17,820	40	0	3.0%	5.0%	72.7	-	138	430	1,335
Madison St: Ave 48 to Ave 49	2	12	2,200	40	0	3.0%	5.0%	63.6	-	-	-	170
Madison St: Ave 49 to Ave 50	1	14	2,200	40	0	3.0%	5.0%	63.6	-	-	-	170
Madison St: Ave 50 to Ave 52	1	0	3,300	40	0	3.0%	5.0%	65.4	-	-	82	254
Madison St: Ave 52 to Ave 54	1	0	10,120	40	0	3.0%	5.0%	70.2	-	79	246	765
Hjorth St: Ave 48 to Ave 49	1	0	7,634	40	0	1.8%	0.7%	65.0	-	-	-	231
Monroe St: Hwy 111 to Ave 48	2	12	17,600	40	0	1.8%	0.7%	68.6	-	-	169	525
Monroe St: Ave 48 to Ave 49	2	12	7,700	40	0	1.8%	0.7%	65.0	-	-	-	233
Monroe St: Ave 49 to Ave 50	1	12	4,400	40	0	1.8%	0.7%	62.6	-	-	-	134
Monroe St: Ave 50 to Ave 52	1	12	4,400	40	0	1.8%	0.7%	62.6	-	-	-	134
Monroe St: Ave 52 to Ave 54	1	12	2,750	40	0	1.8%	0.7%	60.5	-	-	-	84
Jackson St: Hwy 111 to Ave 48	2	12	27,500	40	0	1.8%	0.7%	70.5	-	84	262	815
Jackson St Ave 48 to Ave 49	2	12	5,500	40	0	1.8%	0.7%	63.5	-	-	-	167
Jackson St: Ave 50 to Ave 52	2	12	2,200	40	0	1.8%	0.7%	59.6	-	-	-	-
Jackson St: Ave 52 to Ave 54	2	12	3,630	40	0	1.8%	0.7%	61.7	-	-	-	111

ROADWAY NAME / Segment	Traffic Volumes: Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	Ref. Energy Levels: A	MT	HT	Dist Adj	Ld: A	MT	HT	Total	Le: A	MT	HT	Total	Ln: A	MT	HT	Total	DISTANCE TO CONTOUR (2): 75 CNEL	70 CNEL	65 CNEL	60 CNEL
Jefferson St: Hwy 111 to Ave 48	22,520	4,180	3,111	429	715	18	30	447	745	67.4	76.3	81.2	-1.8	66.7	58.7	65.8	69.6	64.4	49.7	56.7	65.2	57.4	60.1	67.1	68.3	74	229	713	2215
Jefferson St: Ave 48 to Ave 49	23,267	4,319	3,214	444	739	18	31	462	770	67.4	76.3	81.2	-1.8	66.8	58.8	65.9	69.8	64.5	49.8	56.9	65.3	57.6	60.2	67.3	68.4	76	237	736	2288
Jefferson St: Ave 49 to Ave 50	18,282	3,393	2,525	348	581	15	24	363	605	67.4	76.3	81.2	-1.8	65.8	57.8	64.8	68.7	63.5	48.8	55.8	64.3	56.5	59.2	66.2	67.4	60	187	581	1804
Jefferson St: Ave 50 to Ave 52	18,282	3,393	2,525	348	581	15	24	363	605	67.4	76.3	81.2	-1.8	65.8	57.8	64.8	68.7	63.5	48.8	55.8	64.3	56.5	59.2	66.2	67.4	60	187	581	1804
Jefferson St: Ave 52 to Ave 54	13,462	2,499	1,859	257	428	11	18	267	446	67.4	76.3	81.2	-1.8	64.5	56.5	63.5	67.4	62.1	47.4	54.5	62.9	55.2	57.8	64.9	66.0	44	138	430	1335
Madison St: Ave 48 to Ave 49	1,662	308	230	32	53	1	2	33	55	67.4	76.3	81.2	-1.8	55.4	47.4	54.4	58.3	53.0	38.4	45.4	53.9	46.1	48.7	55.8	57.0	6	18	55	170
Madison St: Ave 49 to Ave 50	1,662	308	230	32	53	1	2	33	55	67.4	76.3	81.2	-1.8	55.4	47.4	54.4	58.3	53.0	38.4	45.4	53.9	46.1	48.7	55.8	57.0	6	18	55	170
Madison St: Ave 50 to Ave 52	2,493	463	344	48	79	2	3	50	83	67.4	76.3	81.2	-1.8	57.1	49.1	56.2	60.1	54.8	40.1	47.2	55.6	47.9	50.5	57.6	58.7	8	26	82	254
Madison St: Ave 52 to Ave 54	7,645	1,419	1,056	146	243	6	10	152	253	67.4	76.3	81.2	-1.8	62.0	54.0	61.1	64.9	59.7	45.0	52.1	60.5	52.7	55.4	62.4	63.6	25	79	246	765
Hjorth St: Ave 48 to Ave 49	5,767	1,070	797	67	27	3	1	70	28	67.4	76.3	81.2	-1.8	60.9	50.6	51.5	61.8	58.5	41.6	42.5	58.7	53.0	52.0	52.9	57.5	8	24	74	231
Monroe St: Hwy 111 to Ave 48	13,296	2,468	1,837	155	63	6	3	162	65	67.4	76.3	81.2	-1.8	64.6	54.3	55.2	65.4	62.1	45.3	46.2	62.3	56.7	55.7	56.5	61.1	18	54	169	525
Monroe St: Ave 48 to Ave 49	5,817	1,080	803	68	27	3	1	71	28	67.4	76.3	81.2	-1.8	61.0	50.7	51.6	61.8	58.5	41.7	42.6	58.7	53.1	52.1	53.0	57.5	8	24	75	233
Monroe St: Ave 49 to Ave 50	3,324	617	459	39	16	2	1	40	16	67.4	76.3	81.2	-1.8	58.5	48.3	49.1	59.4	56.1	39.3	40.1	56.3	50.7	49.6	50.5	55.1	4	14	43	134
Monroe St: Ave 50 to Ave 52	3,324	617	459	39	16	2	1	40	16	67.4	76.3	81.2	-1.8	58.5	48.3	49.1	59.4	56.1	39.3	40.1	56.3	50.7	49.6	50.5	55.1	4	14	43	134
Monroe St: Ave 52 to Ave 54	2,077	386	287	24	10	1	0	25	10	67.4	76.3	81.2	-1.8	56.5	46.2	47.1	57.3	54.1	37.2	38.1	54.2	48.6	47.6	48.5	53.0	3	9	27	84
Jackson St: Hwy 111 to Ave 48	20,774	3,856	2,870	243	98	10	4	253	102	67.4	76.3	81.2	-1.8	66.5	56.2	57.1	67.3	64.1	47.2	48.1	64.2	58.6	57.6	58.5	63.0	27	84	262	815
Jackson St Ave 48 to Ave 49	4,155	771	574	49	20	2	1	51	20	67.4	76.3	81.2	-1.8	59.5	49.2	50.1	60.3	57.1	40.2	41.1	57.3	51.6	50.6	51.5	56.0	6	17	54	167
Jackson St: Ave 50 to Ave 52	1,662	308	230	19	8	1	0	20	8	67.4	76.3	81.2	-1.8	55.5	45.2	46.1	56.4	53.1	36.2	37.1	53.3	47.6	46.6	47.5	52.1	2	7	22	68
Jackson St: Ave 52 to Ave 54	2,742	509	379	32	13	1	1	33	13	67.4	76.3	81.2	-1.8	57.7	47.4	48.3	58.5	55.3	38.4	39.3	55.5	49.8	48.8	49.7	54.2	4	11	36	111

Notes:
(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site, such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such, as heavily vegetated ground cover.

"-" = contour is located within the roadway lanes or within 75 feet of the roadway centerline.

Noise levels and distances to contours do not assume any natural or constructed barriers that may attenuate noise.

24-Hour Traffic Distribution for Roadways Designated as "Major," "Arterial" Highways or "Expressways" by Riverside County

Source: Riverside County Department of Public Health, 15 January 2004.

	Weighted Traffic Distribution (%)				Riverside County Traffic Distribution			
	Day	Evening	Night	Totals	Day	Evening	Night	Totals
Auto	75.54%	14.02%	10.43%	100.00%	69.50%	12.90%	9.60%	92.00%
Medium-Duty Trucks	48.00%	2.00%	50.00%	100.00%	1.44%	0.06%	1.50%	3.00%
Heavy-Duty Trucks	48.00%	2.00%	50.00%	100.00%	2.40%	0.10%	2.50%	5.00%

Music Festivals Plan
On-Site Noise Contours Using Riverside County 24-Hour Traffic Distribution
Existing Conditions - WB/EB

ROADWAY NAME Segment	Number of Lanes in Each Direction	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor (1)	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	Distance from Center of Roadway CNEL at 75 Feet	DISTANCE TO CONTOUR 75 CNEL	70 CNEL	65 CNEL	60 CNEL	Traffic Volumes Day	Eve	Night
ROADWAY NAME															
Ave 48: Dune to Jefferson St	2	14	12,100	40	0	3.0%	5.0%	71.0	-	94	293	912	9,141	1,697	1,263
Ave 48: Jefferson to Madison	3	14	20,240	40	0	3.0%	5.0%	73.3	-	157	487	1,513	15,290	2,838	2,112
Ave 48: Madison to Monroe	2	12	16,500	40	0	1.8%	0.7%	68.3	-	-	159	493	12,465	2,314	1,722
Ave 48: Monroe to Jackson	2	12	15,400	40	0	1.8%	0.7%	68.0	-	-	148	460	11,634	2,159	1,607
Ave 48: Jackson to Calhoun	3	14	13,200	40	0	3.0%	5.0%	71.4	-	103	320	993	9,972	1,851	1,377
Ave 49: Rancho La Quinta to Jefferson	1	0	12,100	40	0	1.8%	0.7%	67.0	-	-	117	363	9,141	1,697	1,263
Ave 49: Jefferson to Madison	1	0	847	40	0	1.8%	0.7%	55.4	-	-	-	-	640	119	88
Ave 49: Madison to Monroe	1	0	1,100	40	0	1.8%	0.7%	56.5	-	-	-	-	831	154	115
Ave 50: Jess Anne to Jefferson	2	14	11,330	40	0	3.0%	5.0%	70.7	-	89	275	855	8,559	1,589	1,182
Ave 50: Jefferson to Madison	1	12	10,670	40	0	1.8%	0.7%	66.4	-	-	103	321	8,060	1,496	1,113
Ave 50: Madison to Monroe	1	12	2,200	40	0	1.8%	0.7%	59.6	-	-	-	-	1,662	308	230
Ave 50: Monroe to Jackson	1	12	3,300	40	0	1.8%	0.7%	61.3	-	-	-	101	2,493	463	344
Ave 50: Jackson to Calhoun	1	14	3,300	40	0	3.0%	5.0%	65.4	-	-	82	254	2,493	463	344
Ave 52: Centrino to Jefferson	2	14	14,850	40	0	3.0%	5.0%	71.9	-	116	359	1,115	11,218	2,082	1,550
Ave 52: Jefferson to Madison	2	14	14,850	40	0	3.0%	5.0%	71.9	-	116	359	1,115	11,218	2,082	1,550
Ave 52: Madison to Monroe	2	14	11,330	40	0	3.0%	5.0%	70.7	-	89	275	855	8,559	1,589	1,182
Ave 52: Monroe to Jackson	2	14	9,900	40	0	3.0%	5.0%	70.1	-	77	241	748	7,479	1,388	1,033
Ave 52: Jackson to Calhoun	1	14	9,900	40	0	3.0%	5.0%	70.1	-	77	241	748	7,479	1,388	1,033

Notes:

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site, such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such, as heavily vegetated ground cover.

"-" = contour is located within the roadway lanes or within 75 feet of the roadway centerline.

Noise levels and distances to contours do not assume any natural or constructed barriers that may attenuate noise.

24-Hour Traffic Distribution for Roadways Designated as "Major," "Arterial" Highways or "Expressways" by Riverside County

Source: Riverside County Department of Public Health, 15 January 2004.

	Weighted Traffic Distribution (%)				Riverside County Traffic Distribution			
	Day	Evening	Night	Totals	Day	Evening	Night	Totals
Auto	75.54%	14.02%	10.43%	100.00%	69.50%	12.90%	9.60%	92.00%
Medium-Duty Trucks	48.00%	2.00%	50.00%	100.00%	1.44%	0.06%	1.50%	3.00%
Heavy-Duty Trucks	48.00%	2.00%	50.00%	100.00%	2.40%	0.10%	2.50%	5.00%

Music Festivals Plan
On-Site Noise Contours Using Riverside County 24-Hour Traffic Distribution
Existing Conditions - WB/EB

						Ref. Energy Levels			Dist	Ld				Le				Ln				DISTANCE TO CONTOUR (2)			
MTd	HTd	MTe	HTe	MTn	HTn	A	MT	HT	Adj	A	MT	HT	Total	A	MT	HT	Total	A	MT	HT	Total	75 CNEL	70 CNEL	65 CNEL	60 CNEL
174	290	7	12	182	303	67.4	76.3	81.2	-1.8	62.8	54.8	61.8	65.7	60.5	45.8	52.8	61.3	53.5	56.1	63.2	64.4	30	94	293	912
291	486	12	20	304	506	67.4	76.3	81.2	-1.8	65.0	57.0	64.1	67.9	62.7	48.0	55.1	63.5	55.8	58.4	65.4	66.6	50	157	487	1513
146	59	6	2	152	61	67.4	76.3	81.2	-1.8	64.3	54.0	54.9	65.1	61.8	45.0	45.9	62.0	56.4	55.4	56.3	60.8	16	51	159	493
136	55	6	2	142	57	67.4	76.3	81.2	-1.8	64.0	53.7	54.6	64.8	61.5	44.7	45.6	61.7	56.1	55.1	56.0	60.5	15	48	148	460
190	317	8	13	198	330	67.4	76.3	81.2	-1.8	63.2	55.1	62.2	66.1	60.8	46.1	53.2	61.6	53.9	56.5	63.6	64.7	33	103	320	993
107	43	4	2	111	45	67.4	76.3	81.2	-1.8	62.9	52.6	53.5	63.8	60.5	43.6	44.5	60.7	55.0	54.0	54.9	59.5	12	38	117	363
7	3	0	0	8	3	67.4	76.3	81.2	-1.8	51.4	41.1	42.0	52.2	48.9	32.1	33.0	49.1	43.5	42.5	43.4	47.9	1	3	9	26
10	4	0	0	10	4	67.4	76.3	81.2	-1.8	52.5	42.2	43.1	53.3	50.1	33.2	34.1	50.3	44.6	43.6	44.5	49.0	1	4	11	34
163	272	7	11	170	283	67.4	76.3	81.2	-1.8	62.5	54.5	61.5	65.4	60.2	45.5	52.5	61.0	53.2	55.9	62.9	64.1	28	89	275	855
94	38	4	2	98	39	67.4	76.3	81.2	-1.8	62.4	52.1	53.0	63.2	59.9	43.1	44.0	60.1	54.5	53.5	54.4	58.9	11	33	103	321
19	8	1	0	20	8	67.4	76.3	81.2	-1.8	55.5	45.2	46.1	56.4	53.1	36.2	37.1	53.3	47.6	46.6	47.5	52.1	2	7	22	68
29	12	1	0	30	12	67.4	76.3	81.2	-1.8	57.3	47.0	47.9	58.1	54.8	38.0	38.9	55.0	49.4	48.4	49.3	53.8	3	10	32	101
48	79	2	3	50	83	67.4	76.3	81.2	-1.8	57.1	49.1	56.2	60.1	54.8	40.1	47.2	55.6	47.9	50.5	57.6	58.7	8	26	82	254
214	356	9	15	223	371	67.4	76.3	81.2	-1.8	63.7	55.7	62.7	66.6	61.3	46.7	53.7	62.2	54.4	57.0	64.1	65.3	37	116	359	1115
214	356	9	15	223	371	67.4	76.3	81.2	-1.8	63.7	55.7	62.7	66.6	61.3	46.7	53.7	62.2	54.4	57.0	64.1	65.3	37	116	359	1115
163	272	7	11	170	283	67.4	76.3	81.2	-1.8	62.5	54.5	61.5	65.4	60.2	45.5	52.5	61.0	53.2	55.9	62.9	64.1	28	89	275	855
143	238	6	10	149	248	67.4	76.3	81.2	-1.8	61.9	53.9	61.0	64.8	59.6	44.9	52.0	60.4	52.6	55.3	62.3	63.5	25	77	241	748

Music Festivals Plan
On-Site Noise Contours Using Riverside County 24-Hour Traffic Distribution
Existing Conditions - NB/SB

ROADWAY NAME / Segment	Number of Lanes in Each Direction	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor (1)	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	Distance from Center of Roadway: CNEL at 75 Feet	DISTANCE TO CONTOUR: 75 CNEL	70 CNEL	65 CNEL	60 CNEL	Traffic Volumes: Day	Eve	Night
ROADWAY NAME															
Jefferson St: north of Ave 48	3	24	31,986	40	0	3.0%	5.0%	75.2	79	246	764	2,375	24,163	4,485	3,338
Jefferson St: Ave 48 to Ave 49	3	24	33,048	40	0	3.0%	5.0%	75.4	82	254	789	2,452	24,966	4,634	3,448
Jefferson St: Ave 49 to Ave 50	3	24	25,967	40	0	3.0%	5.0%	74.3	-	200	622	1,934	19,616	3,641	2,710
Jefferson St: Ave 50 to Ave 52	3	24	24,200	40	0	3.0%	5.0%	74.0	-	187	581	1,804	18,282	3,393	2,525
Jefferson St: Ave 52 to Ave 54	3	24	17,820	40	0	3.0%	5.0%	72.7	-	138	430	1,335	13,462	2,499	1,859
Madison St: s/o Ave 48	2	12	1,000	40	0	3.0%	5.0%	60.2	-	-	-	78	755	140	104
Madison St: n/o Ave 50	1	14	1,350	40	0	3.0%	5.0%	61.5	-	-	-	105	1,020	189	141
Madison St: Ave 50 to Ave 52	1	0	3,300	40	0	3.0%	5.0%	65.4	-	-	82	254	2,493	463	344
Madison St: Ave 52 to Ave 54	1	0	10,120	40	0	3.0%	5.0%	70.2	-	79	246	765	7,645	1,419	1,056
Hjorth St: Ave 48 to Ave 49	1	0	7,634	40	0	1.8%	0.7%	65.0	-	-	-	231	5,767	1,070	797
Monroe St: n/o Ave 48	2	12	20,645	40	0	1.8%	0.7%	69.3	-	-	198	614	15,596	2,895	2,154
Monroe St: Ave 48 to Ave 49	2	12	10,033	40	0	1.8%	0.7%	66.1	-	-	97	302	7,579	1,407	1,047
Monroe St: Ave 49 to Ave 50	2	12	5,733	40	0	1.8%	0.7%	63.7	-	-	-	174	4,331	804	598
Monroe St: Ave 50 to Ave 52	2	12	5,733	40	0	1.8%	0.7%	63.7	-	-	-	174	4,331	804	598
Monroe St: Ave 52 to Ave 54	1	12	2,893	40	0	1.8%	0.7%	60.7	-	-	-	89	2,185	406	302
Jackson St: Hwy 111 to Ave 48	2	12	31,405	40	0	1.8%	0.7%	71.1	-	96	299	929	23,724	4,404	3,277
Jackson St Ave 48 to Ave 50	2	12	7,645	40	0	1.8%	0.7%	65.0	-	-	-	231	5,775	1,072	798
Jackson St: Ave 50 to Ave 52	2	12	3,344	40	0	1.8%	0.7%	61.4	-	-	-	102	2,526	469	349
Jackson St: Ave 52 to Ave 54	2	12	3,650	40	0	1.8%	0.7%	61.7	-	-	-	112	2,757	512	381

Notes:

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site, such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such, as heavily vegetated ground cover.

"-" = contour is located within the roadway lanes or within 75 feet of the roadway centerline.

Noise levels and distances to contours do not assume any natural or constructed barriers that may attenuate noise.

Inbound Trips for Daily

Outbound Trips for Dai

24-Hour Traffic Distribution for Roadways Designated as "Major," "Arterial" Highways or "Expressways" by Riverside County

Source: Riverside County Department of Public Health, 15 January 2004.

	Weighted Traffic Distribution (%)				Riverside County Traffic Distribution			
	Day	Evening	Night	Totals	Day	Evening	Night	Totals
Auto	75.54%	14.02%	10.43%	100.00%	69.50%	12.90%	9.60%	92.00%
Medium-Duty Trucks	48.00%	2.00%	50.00%	100.00%	1.44%	0.06%	1.50%	3.00%
Heavy-Duty Trucks	48.00%	2.00%	50.00%	100.00%	2.40%	0.10%	2.50%	5.00%

Music Festivals Plan
On-Site Noise Contours Using Riverside County 24-Hour Traffic Distribution
Existing Conditions - NB/SB

						Ref. Energy Levels			Dist	Ld				Le				Ln				DISTANCE TO CONTOUR (2)			
MTd	HTd	MTe	HTe	MTn	HTn	A	MT	HT	Adj	A	MT	HT	Total	A	MT	HT	Total	A	MT	HT	Total	75 CNEL	70 CNEL	65 CNEL	60 CNEL
461	768	19	32	480	800	67.4	76.3	81.2	-1.8	67.0	59.0	66.1	69.9	64.7	50.0	57.1	65.5	57.7	60.4	67.4	68.6	79	246	764	2375
476	793	20	33	496	826	67.4	76.3	81.2	-1.8	67.2	59.1	66.2	70.1	64.8	50.1	57.2	65.6	57.9	60.5	67.6	68.7	82	254	789	2452
374	623	16	26	390	649	67.4	76.3	81.2	-1.8	66.1	58.1	65.2	69.0	63.8	49.1	56.1	64.6	56.8	59.5	66.5	67.7	64	200	622	1934
348	581	15	24	363	605	67.4	76.3	81.2	-1.8	65.8	57.8	64.8	68.7	63.5	48.8	55.8	64.3	56.5	59.2	66.2	67.4	60	187	581	1804
257	428	11	18	267	446	67.4	76.3	81.2	-1.8	64.5	56.5	63.5	67.4	62.1	47.4	54.5	62.9	55.2	57.8	64.9	66.0	44	138	430	1335
14	24	1	1	15	25	67.4	76.3	81.2	-1.8	52.0	43.9	51.0	54.9	49.6	34.9	42.0	50.4	42.7	45.3	52.4	53.5	3	8	25	78
19	32	1	1	20	34	67.4	76.3	81.2	-1.8	53.3	45.2	52.3	56.2	50.9	36.2	43.3	51.7	44.0	46.6	53.7	54.8	4	11	34	105
48	79	2	3	50	83	67.4	76.3	81.2	-1.8	57.1	49.1	56.2	60.1	54.8	40.1	47.2	55.6	47.9	50.5	57.6	58.7	8	26	82	254
146	243	6	10	152	253	67.4	76.3	81.2	-1.8	62.0	54.0	61.1	64.9	59.7	45.0	52.1	60.5	52.7	55.4	62.4	63.6	25	79	246	765
67	27	3	1	70	28	67.4	76.3	81.2	-1.8	60.9	50.6	51.5	61.8	58.5	41.6	42.5	58.7	53.0	52.0	52.9	57.5	8	24	74	231
182	73	8	3	190	76	67.4	76.3	81.2	-1.8	65.3	55.0	55.9	66.1	62.8	46.0	46.9	63.0	57.4	56.3	57.2	61.8	20	64	198	614
89	36	4	1	92	37	67.4	76.3	81.2	-1.8	62.1	51.8	52.7	63.0	59.7	42.8	43.7	59.9	54.2	53.2	54.1	58.6	10	31	97	302
51	20	2	1	53	21	67.4	76.3	81.2	-1.8	59.7	49.4	50.3	60.5	57.2	40.4	41.3	57.4	51.8	50.8	51.7	56.2	6	18	56	174
51	20	2	1	53	21	67.4	76.3	81.2	-1.8	59.7	49.4	50.3	60.5	57.2	40.4	41.3	57.4	51.8	50.8	51.7	56.2	6	18	56	174
26	10	1	0	27	11	67.4	76.3	81.2	-1.8	56.7	46.4	47.3	57.5	54.3	37.4	38.3	54.5	48.8	47.8	48.7	53.2	3	9	29	89
277	112	12	5	289	116	67.4	76.3	81.2	-1.8	67.1	56.8	57.7	67.9	64.6	47.8	48.7	64.8	59.2	58.2	59.1	63.6	31	96	299	929
68	27	3	1	70	28	67.4	76.3	81.2	-1.8	60.9	50.7	51.5	61.8	58.5	41.6	42.5	58.7	53.1	52.0	52.9	57.5	8	24	74	231
30	12	1	0	31	12	67.4	76.3	81.2	-1.8	57.4	47.1	48.0	58.2	54.9	38.1	38.9	55.1	49.5	48.4	49.3	53.9	3	11	33	102
32	13	1	1	34	14	67.4	76.3	81.2	-1.8	57.7	47.4	48.3	58.6	55.3	38.4	39.3	55.5	49.8	48.8	49.7	54.3	4	12	36	112

parking
ly parking

Music Festivals Plan
On-Site Noise Contours Using Riverside County 24-Hour Traffic Distribution
Existing Conditions - WB/EB

Ld				Le				Ln				DISTANCE TO CONTOUR (2)			
A	MT	HT	Total	A	MT	HT	Total	A	MT	HT	Total	75 CNEL	70 CNEL	65 CNEL	60 CNEL
62.8	54.8	61.8	65.7	60.5	45.8	52.8	61.3	53.5	56.1	63.2	64.4	30	94	293	912
65.0	57.0	64.1	67.9	62.7	48.0	55.1	63.5	55.8	58.4	65.4	66.6	50	157	487	1513
64.3	54.0	54.9	65.1	61.8	45.0	45.9	62.0	56.4	55.4	56.3	60.8	16	51	159	493
64.0	53.7	54.6	64.9	61.6	44.7	45.6	61.8	56.1	55.1	56.0	60.6	16	48	150	466
63.2	55.2	62.3	66.1	60.9	46.2	53.3	61.7	54.0	56.6	63.6	64.8	34	104	324	1006
62.9	52.6	53.5	63.8	60.5	43.6	44.5	60.7	55.0	54.0	54.9	59.5	12	38	117	363
51.4	41.1	42.0	52.2	48.9	32.1	33.0	49.1	43.5	42.5	43.4	47.9	1	3	9	26
52.5	42.2	43.1	53.3	50.1	33.2	34.1	50.3	44.6	43.6	44.5	49.0	1	4	11	34
62.5	54.5	61.5	65.4	60.2	45.5	52.5	61.0	53.2	55.9	62.9	64.1	28	89	275	855
63.8	53.5	54.4	64.6	61.3	44.5	45.4	61.5	55.9	54.9	55.7	60.3	15	45	141	439
55.5	45.2	46.1	56.4	53.1	36.2	37.1	53.3	47.6	46.6	47.5	52.1	2	7	22	68
57.3	47.0	47.9	58.1	54.8	38.0	38.9	55.0	49.4	48.4	49.3	53.8	3	10	32	101
57.1	49.1	56.2	60.1	54.8	40.1	47.2	55.6	47.9	50.5	57.6	58.7	8	26	82	254
63.7	55.7	62.7	66.6	61.3	46.7	53.7	62.2	54.4	57.0	64.1	65.3	37	116	359	1115
63.7	55.7	62.7	66.6	61.3	46.7	53.7	62.2	54.4	57.0	64.1	65.3	37	116	359	1115
62.5	54.5	61.5	65.4	60.2	45.5	52.5	61.0	53.2	55.9	62.9	64.1	28	89	275	855
63.1	55.0	62.1	66.0	60.7	46.0	53.1	61.5	53.8	56.4	63.5	64.6	32	100	312	969
63.1	55.0	62.1	66.0	60.7	46.0	53.1	61.5	53.8	56.4	63.5	64.6	32	100	312	969

Music Festivals Plan
Off-Site Noise Contours
Project Conditions - NB/SB

ROADWAY NAME / Segment	Number of Lanes in Each Direction	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor (1)	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	Distance from Center of Roadway: Lnight at 75 Feet	DISTANCE TO CONTOUR: 75 CNEL	70 CNEL	65 CNEL	60 CNEL	Traffic Volumes: Day	Eve	Night
ROADWAY NAME															
Jefferson St: Hwy 111 to Ave 48	3	24	3,338	25	0	3.0%	5.0%	54.0	-	-	-	-	0	0	3,338
Jefferson St: Ave 48 to Ave 49	3	24	3,448	25	0	3.0%	5.0%	54.1	-	-	-	-	0	0	3,448
Jefferson St: Ave 49 to Ave 50	3	24	2,710	25	0	3.0%	5.0%	53.1	-	-	-	-	0	0	2,710
Jefferson St: Ave 50 to Ave 52	3	24	2,525	40	0	3.0%	5.0%	58.6	-	-	-	-	0	0	2,525
Jefferson St: Ave 52 to Ave 54	3	24	1,859	40	0	3.0%	5.0%	57.3	-	-	-	-	0	0	1,859
Madison St: Ave 48 to Ave 49	2	12	104	40	0	3.0%	5.0%	44.8	-	-	-	-	0	0	104
Madison St: Ave 49 to Ave 50	1	14	141	40	0	3.0%	5.0%	46.1	-	-	-	-	0	0	141
Madison St: Ave 50 to Ave 52	1	0	344	40	0	3.0%	5.0%	50.0	-	-	-	-	0	0	344
Madison St: Ave 52 to Ave 54	1	0	1,056	40	0	3.0%	5.0%	54.8	-	-	-	-	0	0	1,056
Hjorth St: Ave 48 to Ave 49	1	0	797	40	0	1.8%	0.7%	53.6	-	-	-	-	0	0	797
Monroe St: Hwy 111 to Ave 48	2	12	2,154	25	0	1.8%	0.7%	52.1	-	-	-	-	0	0	2,154
Monroe St: Ave 48 to Ave 49	2	12	1,047	25	0	1.8%	0.7%	48.9	-	-	-	-	0	0	1,047
Monroe St: Ave 49 to Ave 50	2	12	598	25	0	1.8%	0.7%	46.5	-	-	-	-	0	0	598
Monroe St: Ave 50 to Ave 52	2	12	598	25	0	1.8%	0.7%	46.5	-	-	-	-	0	0	598
Monroe St: Ave 52 to Ave 54	1	12	302	25	0	1.8%	0.7%	43.5	-	-	-	-	0	0	302
Jackson St: Hwy 111 to Ave 48	2	12	3,277	25	0	1.8%	0.7%	53.9	-	-	-	-	0	0	3,277
Jackson St Ave 48 to Ave 50	2	12	798	25	0	1.8%	0.7%	47.7	-	-	-	-	0	0	798
Jackson St: Ave 50 to Ave 52	2	12	349	25	0	1.8%	0.7%	44.2	-	-	-	-	0	0	349
Jackson St: Ave 52 to Ave 54	2	12	381	40	0	1.8%	0.7%	50.4	-	-	-	-	0	0	381

Notes:

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site, such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such, as heavily vegetated ground cover.

"-" = contour is located within the roadway lanes or within 75 feet of the roadway centerline.

Noise levels and distances to contours do not assume any natural or constructed barriers that may attenuate noise.

Inbound Trips for Daily

Outbound Trips for Dai

24-Hour Traffic Distribution for Roadways Designated as "Major," "Arterial" Highways or "Expressways" by Riverside County

Source: Riverside County Department of Public Health, 15 January 2004.

	Weighted Traffic Distribution (%)				Riverside County Traffic Distribution			
	Day	Evening	Night	Totals	Day	Evening	Night	Totals
Auto	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	100.00%	100.00%
Medium-Duty Trucks	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Heavy-Duty Trucks	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

JN: 002-001-12

Prepared by: Chris Hampson
Date: 09/05/12

Music Festivals Plan
Off-Site Noise Contours
Project Conditions - NB/SB

						Ref. Energy Levels			Dist	Ld				Le				Ln				DISTANCE TO CONTOUR (2)			
MTd	HTd	MTe	HTe	MTn	HTn	A	MT	HT	Adj	A	MT	HT	Total	A	MT	HT	Total	A	MT	HT	Total	75 CNEL	70 CNEL	65 CNEL	60 CNEL
0	0	0	0	0	0	59.4	71.1	78.7	-1.8									54.0							
0	0	0	0	0	0	59.4	71.1	78.7	-1.8									54.1							
0	0	0	0	0	0	59.4	71.1	78.7	-1.8									53.1							
0	0	0	0	0	0	67.4	76.3	81.2	-1.8									58.6							
0	0	0	0	0	0	67.4	76.3	81.2	-1.8									57.3							
0	0	0	0	0	0	67.4	76.3	81.2	-1.8									44.8							
0	0	0	0	0	0	67.4	76.3	81.2	-1.8									46.1							
0	0	0	0	0	0	67.4	76.3	81.2	-1.8									50.0							
0	0	0	0	0	0	67.4	76.3	81.2	-1.8									54.8							
0	0	0	0	0	0	67.4	76.3	81.2	-1.8									53.6							
0	0	0	0	0	0	59.4	71.1	78.7	-1.8									52.1							
0	0	0	0	0	0	59.4	71.1	78.7	-1.8									48.9							
0	0	0	0	0	0	59.4	71.1	78.7	-1.8									46.5							
0	0	0	0	0	0	59.4	71.1	78.7	-1.8									46.5							
0	0	0	0	0	0	59.4	71.1	78.7	-1.8									43.5							
0	0	0	0	0	0	59.4	71.1	78.7	-1.8									53.9							
0	0	0	0	0	0	59.4	71.1	78.7	-1.8									47.7							
0	0	0	0	0	0	59.4	71.1	78.7	-1.8									44.2							
0	0	0	0	0	0	67.4	76.3	81.2	-1.8									50.4							

parking

ly parking

Prepared by: Chris Hampson
Date: 09/05/12

Music Festivals Plan
Off-Site Noise Contours
Project Conditions - WB/EB

ROADWAY NAME / Segment	Number of Lanes in Each Direction	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor (1)	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	Distance from Center of Roadway: CNEL at 75 Feet	DISTANCE TO CONTOUR: 75 CNEL	70 CNEL	65 CNEL	60 CNEL	Traffic Volumes: Day	Eve	Night
ROADWAY NAME															
Ave 48: Dune to Jefferson St	2	14	1,263	40	0	0.0%	0.0%	55.6	-	-	-	-	0	0	1,263
Ave 48: Jefferson to Madison	3	14	2,112	40	0	0.0%	0.0%	57.9	-	-	-	-	0	0	2,112
Ave 48: Madison to Monroe	2	12	1,722	40	0	0.0%	0.0%	57.0	-	-	-	-	0	0	1,722
Ave 48: Monroe to Jackson	2	12	1,628	25	0	0.0%	0.0%	50.8	-	-	-	-	0	0	1,628
Ave 48: Jackson to Calhoun	3	14	1,395	25	0	0.0%	0.0%	50.2	-	-	-	-	0	0	1,395
Ave 49: Rancho La Quinta to Jefferson	1	0	1,263	40	0	0.0%	0.0%	55.6	-	-	-	-	0	0	1,263
Ave 49: Jefferson to Madison	1	0	88	40	0	0.0%	0.0%	44.0	-	-	-	-	0	0	88
Ave 49: Madison to Monroe	1	0	115	40	0	0.0%	0.0%	45.2	-	-	-	-	0	0	115
Ave 50: Jess Anne to Jefferson	2	14	1,182	40	0	0.0%	0.0%	55.3	-	-	-	-	0	0	1,182
Ave 50: Jefferson to Madison	1	12	1,530	25	0	0.0%	0.0%	50.6	-	-	-	-	0	0	1,530
Ave 50: Madison to Monroe	1	12	230	40	0	0.0%	0.0%	48.2	-	-	-	-	0	0	230
Ave 50: Monroe to Jackson	1	12	344	40	0	0.0%	0.0%	50.0	-	-	-	-	0	0	344
Ave 50: Jackson to Calhoun	1	14	344	40	0	0.0%	0.0%	50.0	-	-	-	-	0	0	344
Ave 52: Centrino to Jefferson	2	14	1,550	40	0	0.0%	0.0%	56.5	-	-	-	-	0	0	1,550
Ave 52: Jefferson to Madison	2	14	1,550	40	0	0.0%	0.0%	56.5	-	-	-	-	0	0	1,550
Ave 52: Madison to Monroe	2	14	1,182	25	0	0.0%	0.0%	49.5	-	-	-	-	0	0	1,182
Ave 52: Monroe to Jackson	2	14	1,343	25	0	0.0%	0.0%	50.0	-	-	-	-	0	0	1,343
Ave 52: Jackson to Calhoun	1	14	1,343	25	0	0.0%	0.0%	50.0	-	-	-	-	0	0	1,343

Notes:

(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site, such as aspalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such, as heavily vegetated ground cover.

"-" = contour is located within the roadway lanes or within 75 feet of the roadway centerline.

Noise levels and distances to contours do not assume any natural or constructed barriers that may attenuate noise.

Inbound Trips for Daily

Outbound Trips for Dai

24-Hour Traffic Distribution for Roadways Designated as "Major," "Arterial" Highways or "Expressways" by Riverside County

Source: Riverside County Department of Public Health, 15 January 2004.

	Weighted Traffic Distribution (%)				Riverside County Traffic Distribution			
	Day	Evening	Night	Totals	Day	Evening	Night	Totals
Auto	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	100.00%	100.00%
Medium-Duty Trucks	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Heavy-Duty Trucks	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

JN: 002-001-12

Prepared by: Chris Hampson
Date: 09/05/12

Music Festivals Plan
Off-Site Noise Contours
Project Conditions - WB/EB

						Ref. Energy Levels			Dist	Ld				Le				Ln				DISTANCE TO CONTOUR (2)			
MTd	HTd	MTe	HTe	MTn	HTn	A	MT	HT	Adj	A	MT	HT	Total	A	MT	HT	Total	A	MT	HT	Total	75 CNEL	70 CNEL	65 CNEL	60 CNEL
0	0	0	0	0	0	67.4	76.3	81.2	-1.8									55.6							
0	0	0	0	0	0	67.4	76.3	81.2	-1.8									57.9							
0	0	0	0	0	0	67.4	76.3	81.2	-1.8									57.0							
0	0	0	0	0	0	59.4	71.1	78.7	-1.8									50.8							
0	0	0	0	0	0	59.4	71.1	78.7	-1.8									50.2							
0	0	0	0	0	0	67.4	76.3	81.2	-1.8									55.6							
0	0	0	0	0	0	67.4	76.3	81.2	-1.8									44.0							
0	0	0	0	0	0	67.4	76.3	81.2	-1.8									45.2							
0	0	0	0	0	0	67.4	76.3	81.2	-1.8									55.3							
0	0	0	0	0	0	59.4	71.1	78.7	-1.8									50.6							
0	0	0	0	0	0	67.4	76.3	81.2	-1.8									48.2							
0	0	0	0	0	0	67.4	76.3	81.2	-1.8									50.0							
0	0	0	0	0	0	67.4	76.3	81.2	-1.8									50.0							
0	0	0	0	0	0	67.4	76.3	81.2	-1.8									56.5							
0	0	0	0	0	0	67.4	76.3	81.2	-1.8									56.5							
0	0	0	0	0	0	59.4	71.1	78.7	-1.8									49.5							
0	0	0	0	0	0	59.4	71.1	78.7	-1.8									50.0							

parking
ly parking

Prepared by: Chris Hampson
Date: 09/05/12

JN: 002-001-12

Appendix B

2015 Monitoring Data

EXISTING CONDITIONS

Noise monitoring was conducted to comply with the Approved Major Music Festival Event Permit and conditions in the Sound Management Program (SMP) to the Final EIR. The SMP requires that noise monitoring be conducted at five major intersection locations around the Approved Festival Site and that the sound generated by Festival events not exceed 85 dB at these locations. Five locations required for monitoring:

- Monroe Street/Avenue 50
- Monroe Street/Avenue 51
- Monroe Street/Avenue 52
- Madison Street/Avenue 50
- Madison Street/Avenue 52

STATIONARY LOCATION SOUND LEVEL METERS

Sound levels were monitored during each day of the 2015 Festivals using stationary noise meters. The five sound level meters (SLMs) provided real-time reports published directly to a website to allow for noise levels to be monitored during the events. Live readings were updated from each SLM every 10 seconds and a 10 minute Leq was updated for each SLM every 10 minutes. The sound data was collected during the 2015 Festival events over three consecutive weekends from April 10, 2015, through April 26, 2015.

Similar to the noise monitoring methodology in the 2012 Noise Report and as required by the SMP, the sound level meter used to conduct this monitoring is Type 1 (precision) Larson Davis model 831 Sound Level Meters. This meter meets all requirements of ANSI 1.4-1983 and ANSI1.43-1997 Type 1 standards, as well as International Electrotechnical Commission (IEC) IEC61672-1 Ed. 1.0, IEC60651 ED 1.2, and IEC60804 Type 1, Group X standards.

Each sound level meter is factory calibrated as three separate components; the body of the meter itself plus the preamplifier and the microphone, each of which has a Certificate of Calibration. When calibrated, the instrument is certified as meeting factory specifications. Normal elapsed time between factory calibrations should not exceed two years. Laboratory calibration of all of the instruments is performed at least biannually and accuracy can be traced to the US National Institute of Science and Technology standard.

The five SLMs were field calibrated with an external calibrator prior to operation and the start of the each Festival event. The meters were connected to power (either direct or through use of a generator).

Each monitor contained battery backup power which would last approximately 24 hours. The meters were connected to the internet via a modem and wireless internet connection.

The microphones for each meter were located on top of a portable office structure located approximately 10 feet above ground and were covered with a Larson Davis windscreen. The meters were installed prior to each 2015 festival event and recorded data until 2:00 AM at each festival performance day. After the completion of each festival performance, the meters were restarted and recorded data for another 24 hours.

The noise meters were equipped with the Larson Davis NoiseTutor program which provided Internet based remote control, a high speed network connection for the rapid transfer of large files, event alerts and real-time reports published directly to a website. Data was collected by the NoiseTutor at predetermined intervals (e.g. every second, once a day, etc.) after which a graphical report was dispatched to a designated website.

Ambient Noise Levels

Ambient noise levels when the 2015 Festivals were not occurring were measured at the same five locations where noise levels were monitored during these events. Ambient measurements at the five locations were taken from 12:00 PM on Monday through 2:00 AM on Thursday between the first and second weekends of the 2015 Coachella Festival. These noise measurements were conducted outside the concert periods of Friday through Monday, when the overall ambient noise levels would be anticipated to be lower than during concert periods. The 24-hour Community Noise Equivalent Level (CNEL) and the average 10 minute sound level are presented in **Table 1, 2015 Ambient Noise Ranges (dB(A)).**

Table 1
2015 Ambient Noise Ranges (dB(A))

	Monroe St/ Ave 50	Monroe St/ Ave 51	Monroe St/ Ave 52	Madison St/ Ave 50	Madison St/ Ave 52
			April 14 – 15, 2015		
Average 10-minute Leq	50.4 - 71.6	60.9 - 73.6	51.2 – 70.1	43.6 – 72.6	52.5 - 76.8
24-hour CNEL	67.7	72.7	68.1	65.7	66.2
			April 15- 16, 2015		
Average 10-minute Leq	49.9 – 71.9	61.4 - 74.2	51.9 – 71.9	41.8 – 67.5	59.8 – 69.5
24-hour CNEL	66.8	73.0	67.0	64.7	68.7

dB(A) = A-weighted decibels
Ambient measurements were conducted between the first and second Coachella Festivals.

Average 10 minute ambient sound levels for both days within the vicinity of Monroe Street and Avenue 50 ranged from 49.9 to 71.9 dB(A). Average 10 minute ambient sound levels for both days within the vicinity of Monroe Street and Avenue 51 ranged from 60.9 to 74.2 dB(A). Average 10 minute ambient sound levels for both days within the vicinity of Monroe Street and Avenue 52 ranged from 51.2 to 71.9 dB(A). Average 10 minute ambient sound levels for both days within the vicinity of Madison Street and Avenue 50 ranged from 41.8 dB(A) to 72.6 dB(A). Average 10 minute ambient sound levels for both days within the vicinity of Madison Street and Avenue 52 ranged from 52.5 dB(A) to 76.8 dB(A).

The measured 24 hour CNEL along Avenue 50 ranged from 66.8 at Monroe Street to 64.7 dB(A) at Madison Street. The measured 24 hour CNEL along Avenue 52 ranged from 67.0 at Monroe Street to 68.7 dB(A) at Madison Street. The measured 24 hour CNEL at Avenue 51 and Monroe Street was 73.0 dB(A). The measured ambient 24 hour noise levels are above the exterior noise levels identified in the City of Indio General Plan of 65 dB(A) CNEL and above the City of La Quinta Noise Ordinance of 55 dB(A) in the day and 45 dB(A) after 10:00 PM.

Monitoring Data Results

As discussed above, the following monitored sound levels from the 2015 Festivals is appropriate to analyze the Modified Project's potential sound level impacts because the Main stage sound system would include the same number of loudspeakers and delay clusters and is the dominant noise source, similar to the methodology utilized in the 2012 Noise Report. In addition, the new stage would not impact the sound generated form the Main stage and would not leave the Performance Area. Thus, the new stage would not result in a new impact on off-site sensitive uses.

The average sound level at each of the five monitoring locations over each day of the 2015 Festivals is presented in **Table 2, 2015 Festivals 24 Hour dB(A) CNEL Ranges**. As shown in **Table 2**, the average 24 hour CNEL over the course of the 2015 Festivals ranged from 65.1 dB(A) to 76.1 dB(A) at all locations.

Table 2
2015 Festivals 24 Hour dB(A) CNEL Ranges

	Monroe St/ Ave 50	Monroe St/ Ave 51	Monroe St/ Ave 52	Madison St/ Ave 50	Madison St/ Ave 52
Coachella Festival – April 10-12, 2015					
Friday	73.6	76.1	65.1[1]	67.1	72.7
Saturday	71.0	75.5	72.1	66.7	71.7
Sunday	70.6	75.0[2]	69.2	67.2	70.8
Coachella Festival – April 17-19, 2015					
Friday	73.4	76.0	70.0	67.9	70.9
Saturday	72.4	75.7	70.2	67.0	70.2
Sunday	71.4	74.8	69.3	67.2	70.5
Stagecoach Festival – April 24-26, 2015					
Friday	69.7[3]	75.1	68.9	67.2	70.3
Saturday	70.0	74.3	69.2	66.6	70.5
Sunday	69.0	74.5	68.4	67.1	69.8

Note:
dB(A) = A-weighted decibels (dB[A[)
[1] Due to intermittent power to this location, 24-hour CNEL averages are only partial measurements. The recording started at 8:44 AM and ended at 4:10 PM, thus the average is over 7.5 hours.
[2] Due to intermittent power to this location, 24-hour CNEL averages are only partial measurements. The recording started at 10:21 AM and ended at 4:00 AM, thus the average is over 18.5 hours.
[3] Due to intermittent power to this location, 24-hour CNEL averages are only partial measurements. The recording started at 2:00 AM and ended at 12:30 PM, thus the average is over 10.5 hours.

The average 10 minute sound levels over 24 hours at the five stationary meter locations during the 2015 Festivals, are provided in **Table 3, 2015 Festivals 10 Minute Leq dB(A) Ranges**. The range of 10 minute average sound levels, over the course of the 2015 Festivals, ranged from a low of 54.1 dB(A) to a high of 79.7 dB(A).

Table 3

2015 Festivals 10 Minute Leq dB(A) Ranges

	Monroe St/Ave 50		Monroe St/Ave 51		Monroe St/Ave 52		Madison St/Ave 50		Madison St/Ave 52	
	Low	High	Low	High	Low	High	Low	High	Low	High
Coachella Festival – April 10-12, 2015										
Friday	61.3	73.2	65.2	79.7	63.0	67.1	57.6	67.3	63.2	71.8
Saturday	62.0	69.3	66.5	74.5	60.3	76.5	58.0	68.4	63.5	75.4
Sunday	62.6	73.1	67.0	72.4	60.1	71.3	58.5	65.5	62.5	69.2
Coachella Festival – April 17-19, 2015										
Friday	62.4	72.4	65.6	74.0	60.2	71.7	56.6	74.7	62.0	67.9
Saturday	61.8	72.9	66.8	74.8	60.8	69.6	58.2	74.3	61.4	74.0
Sunday	59.9	74.2	64.8	72.7	59.2	75.2	58.3	67.3	61.0	75.2
Stagecoach Festival – April 24-26, 2015										
Friday	59.6	68.2	66.2	73.4	58.6	68.6	58.5	76.7	61.3	72.8
Saturday	58.0	73.1	65.0	74.1	58.5	74.0	54.1	65.6	61.3	69.0
Sunday	58.7	67.9	65.7	73.2	59.2	70.7	55.4	70.7	59.6	71.0

Notes:
dB(A) = A-weighted decibels (dB(A))
All measurements are in dB(A) and consist of un-weighted 10 minute averages over the course of 24 hours.
Low is the lowest recorded un-weighted 10 minute average within the 24 hour period.
High is the highest recorded un-weighted 10 minute average within the 24 hour period.

The music performance sound equipment and subwoofers used generally produce low frequency sound between 50 Hz and 100 Hz. These frequencies were analyzed to determine if there was a correlation between the music performance times and noise levels. The highest recorded 10 minute low frequency averages during the 2015 Coachella Festivals are shown in **Table 4, Low Frequency SPLs During Saturday, April 11, 2015**.

Table 4

2015 Highest Average Low Frequency SPLs During Saturday, April 11, 2015

	Frequency (Hz)				Combined
Location	50	63	80	100	Frequencies
Monroe/Ave 50 (dB)	62.4	56.7	56.0	53.7	64.5
Monroe/Ave 51 (dB)	52.9	49.0	60.5	58.4	63.2
Monroe/Ave 52 (dB)	55.9	50.9	55.1	54.2	60.4
Madison/Ave 50 (dB)	49.4	47.3	52.8	53.8	57.6
Madison/Ave 52 (dB)	50.9	54.3	54.5	52.7	59.3

Note:
The measurements are 10 minute sound averages.

APPENDIX D

Traffic Study

Addendum to the Music Festivals Plan Final EIR

Transportation Study

March 9, 2016

Prepared by

The **Mobility** Group

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I. Introduction

I.1 Purpose of Study

This report analyzes the potential traffic impacts of proposed modifications to the Music Festivals Plan (The Modified Project) as analyzed in the Music Festivals Plan Final EIR which the City of Indio certified in April 2013.

I.2 Summary Project Description

The Final EIR analyzed the environmental effects of the Major Music Festival Event Ordinance and related Major Music Festival Event Permit to allow the Coachella Music and Arts and Stagecoach Country Music Festivals to continue to be held annually each Spring and for two additional music festival events to be held annually in Fall on the Approved Festival Site (The Approved Project). The maximum daily All-Inclusive Attendance[1] analyzed in the Final EIR and allowed by the Major Music Festival Event Ordinance and Major Music Festival Event Permit issued by the City was 75,000 persons for two of these events (Lower Attendance Festivals) and 99,000 persons for the other three events (Higher Attendance Festivals) (collectively, "Approved Attendance Levels"). The Coachella Music and Arts Festival is a Higher Attendance Festival as defined by the Major Music Festival Event Permit and the Stagecoach Country Music Festival is a Lower Attendance Festival.

The Modified Project includes modifications to the Major Music Festival Event Ordinance that would increase the maximum permitted daily attendance for Major Music Festival Events to 125,000 persons, as well as modifications to the Major Music Festival Event Permit that would allow this corresponding increase for Higher Attendance Levels and an increase to 85,000 persons for Lower Attendance Festivals ("Modified Attendance Levels"). The Modified Project also includes the addition of land to the Music Festival Site, including several parcels located adjacent to the Approved Festival Site in the City of Indio. Figure I-1 shows the festival site in the City of Indio on the grounds of the Empire and Eldorado Polo Clubs and adjacent properties located between Avenue 49, Monroe Street, Avenue 52 and Madison Street in the southwestern corner of the City of Indio.

The music festival events occur Friday through Sunday. On-site camping is allowed at both festivals starting the day before the festival (Thursday) and ending the day after the festival (Monday).

[1] All-Inclusive Attendance is defined as the attendance including all patrons, staff, vendors, and artists.

Figure I-1
Project Site Location

Under the Modified Project, the maximum daily All-Inclusive Attendance for the Festivals permitted under the Major Music Festival Event Permit would be amended to be 85,000 persons for two of these events ("Modified Lower Attendance Festivals") and 125,000 persons for the other three events ("Modified Higher Attendance Festivals"). The Festival Operator intends to continue holding the Coachella Festival, or a similar festival, on two consecutive weekends in the Spring and the Stagecoach Festival, or a similar festival, on the following weekend.

The Festival Operator would continue to prepare and submit to the City Operations Plans for the Modified Festivals, which would be similar to those prepared for the Approved Project, and would continue to include a Transportation Management Plan.

I.3 Study Approach

The analysis in this report updates the Music Festival Plan EIR Transportation Study, December 2012. It follows the same format and utilizes the same methodologies as that report. As much of the information regarding festival operations and characteristics remains the same, this report focuses on the changes since that report, both in background conditions and to the Project. Rather than repeat detailed information, the reader is referred back to that report as a companion piece.

This report analyzes the potential traffic impacts of the Modified Project commencing in 2017, which is the projected first year of operation for the expanded festivals.

The original study analyzed 41 intersections, 6 freeway mainline locations, 8 freeway off-ramps, and 8 freeway on-ramps. As the previous report was conducted so recently, and as the transportation operations plan for the festivals have not nor are planned to change substantially, traffic conditions are and will remain very similar to the original study. This report therefore prepares a focused analysis on key locations to evaluate the potential effects of proposed modifications to the Music Festival Plan. It addresses a key subset of 21 intersections locations, 6 freeway mainline locations, and 5 freeway ramps, for potential changes, as shown in Figure I-2.

The analysis addresses the same three key time periods as the previous study:

Friday:	3:00 to 4:00 pm
Saturday:	2:00 to 3:00 pm
Monday:	8:00 to 9:00 am

As per the 2012 Study, the methodology utilized in this study follows the City of Indio methodology for traffic studies, as the City of Indio is the lead agency for the Modified

Project. For analysis locations located in other jurisdictions the analysis is also conducted according to the methodology guidelines for the relevant jurisdiction.

I.4 Changes Since Approval of the Music Festivals Plan

Project Operations

The overall transportation site plan for the Modified Festivals remains very largely the same as for the Approved Festivals, and is illustrated in Figure I-3.

Camping Areas would continue to be located between Avenue 50, Monroe Street, Avenue 52, and Madison Street on the grounds of the Eldorado and Empire Polo Clubs. These areas would be used for Tent Camping, Car Camping, and Recreational Vehicle Camping.

Parking Areas for daily parking by patrons would continue to be located adjacent to the major streets that border the site, including Avenue 52, Madison Street, Monroe Street, Avenue 49, and Avenue 50.

The Shuttle Operations Area would continue to be located on Avenue 50. Shuttle buses would arrive, depart and temporarily park in this area. This large area will accommodate an expanded shuttle operation.

The southwest corner of the Modified Festival Site adjacent to Madison Street and Avenue 52 would continue to be used for drop-off and pick-up of patrons.

A location at the northeast corner of the Modified Festival Site adjacent to Monroe Street and south of Avenue 49 would be used for taxi service and Uber/Lyft car services. The taxi site has been relocated from the location analyzed in the 2012 Traffic Study for the Music Festivals Plan when taxi service operated at the southwest corner of the Approved Festival Site adjacent to Madison Street and Avenue 52. Also, Uber/Lyft car services are a new feature that was not operating at the time of the 2012 Traffic Study.

For the Modified Higher Attendance Festivals, the Modified Festival Site would provide parking for up to approximately 14,320 Car Camping vehicles[2], 1,010 tent camping sites, and 1,700 companion parking vehicles (associated with car camping), 14,320 vehicles in the General Admission Parking Areas, and 5,810 vehicles for staff and artists in the Support Areas.

[2] Car camping vehicles include passenger cars, trucks, and vans. RVs, trailers, and commercial trucks are not permitted.

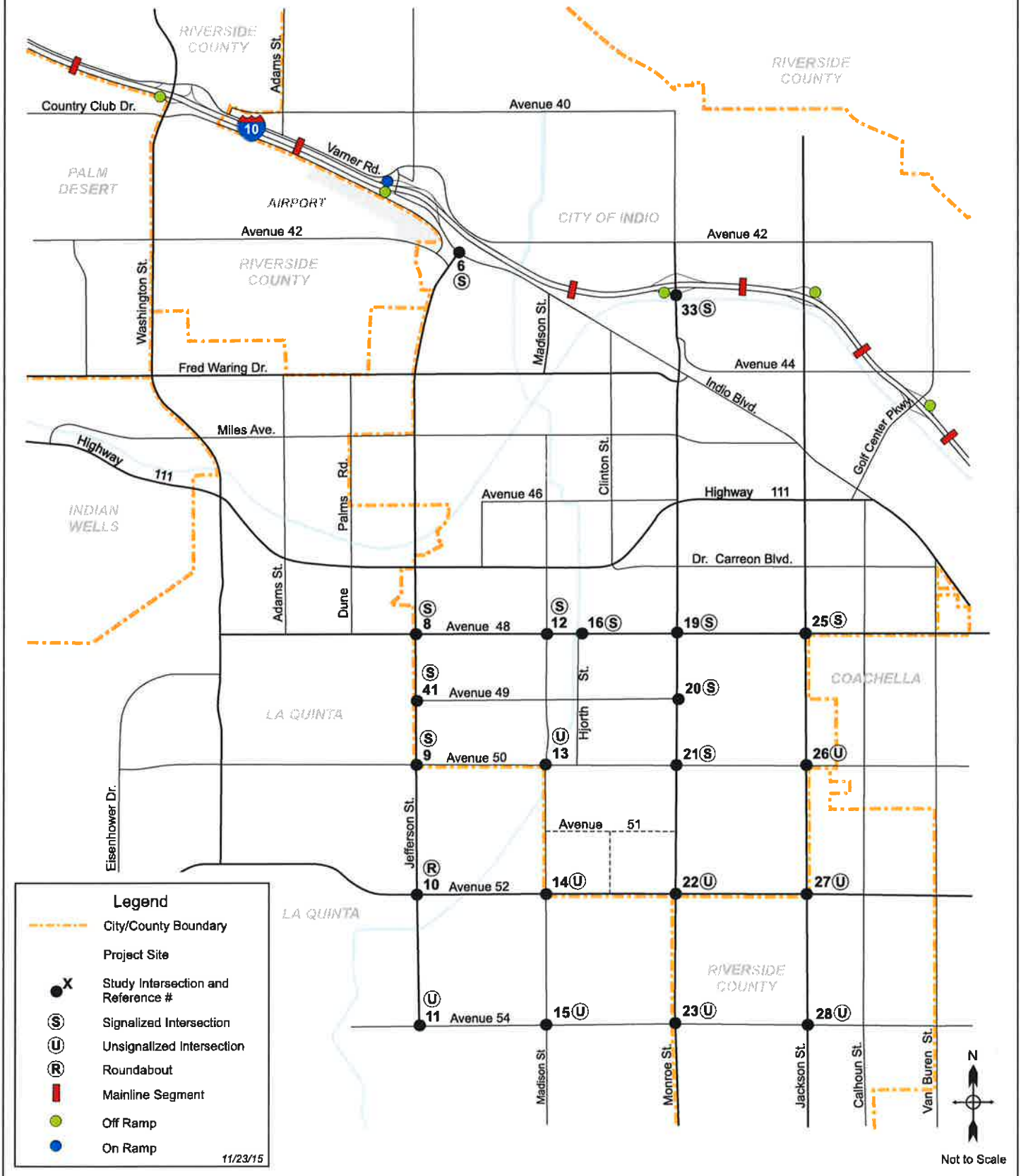

Figure I-2
Study Locations

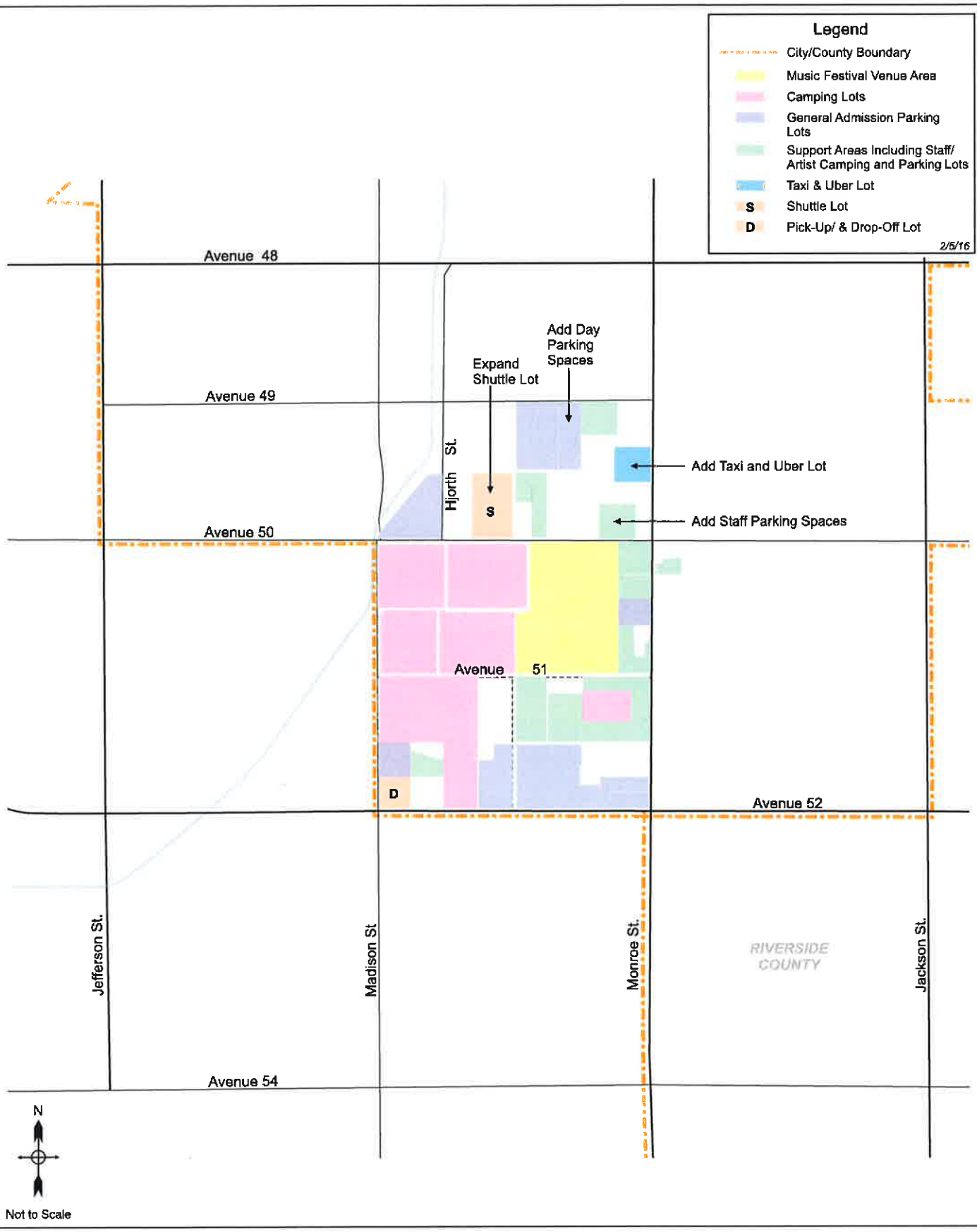

Figure I-3
Modified Festival Plan - Site and Use by Area

For the Modified Lower Attendance Festivals, the Modified Festival Site would provide parking for approximately 3,000 recreational vehicles, 424 tent camping spaces, 848 Car Camping vehicles, and 2,825 Companion Parking spaces in the Camping Areas; 12,970 vehicles in the General Admission Parking Areas, and 5,820 vehicles for staff and artists in the Support Areas.

Roadway System Changes

A number of improvements to the roadway system have been implemented since the 2012 Traffic Study, which have enhanced roadway capacity and operational efficiency on roadways leading to and adjacent to the Festival Site, and which are detailed below.

Monroe Street, Avenue 49 to Avenue 52: Monroe Street has been widened to two lanes in both directions.

Madison Street, Avenue 50 to Avenue 52: Madison Street has been widened to three lanes, one lane in each direction with a central turn lane.

Avenue 52, Monroe Street to Madison Street: One westbound lane has been added.

Monroe Avenue & I-10 Eastbound Ramps: A traffic signal has been installed at this intersection. The eastbound and westbound off-ramps have been widened to include one shared left/though lane and one right turn lane.

Monroe Street & Avenue 49: A traffic signal has been installed at this intersection.

Monroe Street & Avenue 50: The traffic signal has been upgraded at this intersection.

All of the above improvements were being planned at the time of the 2012 Traffic Study and were included in the analysis of 2014 conditions in that study.[3] They are all now in place and have been incorporated into this study.

Jefferson Street & Avenue 52: The roundabout has been reconstructed to include one lane circulating around the roundabout and one by-pass lane for right turns on each approach, and single approach lanes. This improvement was completed in 2015, it has been assumed in this study.

Jefferson Street Interchange / I-10: The Jefferson Street interchange with I-10 is currently being improved and reconstructed and is schedule for completion by early 2017. It is addressed in this study. The interchange will be considerably enhanced with increased capacity with the following key improvements: Indio Boulevard will be extended in a new

[3] See Table IV-1 in *Music Festivals Plan EIR Transportation Study, The Mobility Group, December 12, 2012*

alignment across the freeway to connect to Varner Road; the existing eastbound off-ramp with two lanes and a stop sign will be replaced by a much longer off-ramp with four lanes at a traffic signal with Indio Boulevard; the existing westbound on-ramp will be replaced with enhanced on-ramps from a traffic signal on Indio Boulevard.

Transportation Management Plan Changes

The Final EIR identified development of a Transportation Management Plan (TMP) for the festivals, and that the TMP shall be a dynamic plan and shall be refined and adjusted annually as necessary in response to actual traffic and parking conditions. The TMP generally includes the following:

Road closures
Primary ingress/egress routes
Shuttle, taxi, uber, parent drop-off routes
Parking operations and parking lot ingress/egress routes
Car camping procedures
Traffic signage and operations
Temporary operational measures at various intersection locations
Temporary Traffic Control Procedures and Locations
Temporary traffic lane reassignments (with traffic cones)
Temporary traffic signal timing and deployment of traffic control personnel to direct traffic.
Shuttle Operations Plan
Pedestrian Flow and Control Plan
Bicycle Flow and Control Plan
Neighborhood Resident Plan

This analysis includes all of the features of the latest Transportation Management Plans (which were developed and operated for the 2015 festivals). The Modified Project also includes some further modifications to these plans, which are listed in Chapter II.

II Updates to Traffic Volumes and Projections and the 2012 Study

II.1 The 2012 Study

The 2012 Study comprehensively documented existing traffic volumes and conditions both without and with the festivals in 2012. Traffic volume forecasts were prepared for 2014 for the Future Without Project condition (No Festival), and forecast festival traffic for the Music Festivals Plan expansion to analyze the Future With Project conditions[4] (With Festival).

The 2012 Traffic Study prepared forecasts of traffic volumes to 2014 to analyze impacts of the Music Festival Plan as this was the initial year of operation under the proposed Major Music Festival Event Permit. These forecasts were obtained by first projecting background growths on the roadway system based on the most recent travel forecasts in the City of Indio General Plan and the City of La Quinta General Plan.[5]

The 2012 Coachella Festival provided the basis for evaluating traffic conditions for a 99,000 capacity festival. The background (non-event) traffic growth between 2012 and 2014 (described above) was added to the 2012 Festival Conditions traffic data, and then the incremental growth from the 2012 Coachella Festival (with approximately 90,000 persons attendance) to the proposed 99,000 person capacity was added to determine the projected total traffic volumes for the Future With Project condition. These were then compared to the Future Without Project conditions to identify potential impacts due to the Project.

II.2 The Current Study

The roadway system remains very largely the same as documented in the 2012 Study, with the exception of the improvements to enhance capacity described above in Section I.

The fundamental nature of the transportation operations of the festival also remains largely the same as in the 2012 Study. Both camping and day parking lots are in the same locations, site entry and exit points remain the same, and the Transportation Management Plan is fundamentally the same, with the exception of the relocation of the taxi lot and the

[4] Documented in *Music Festivals Plan EIR Transportation Study. The Mobility Group,. December 12, 2012.*

[5] Both local models were consistent with SCAG sub-regional and regional models. These were therefore the most recent and applicable sources for the traffic forecasts used in this study. These travel forecasts covered the Project study area and provided information for all of the study intersection locations.

introduction of the Uber/Lyft lot, which will be addressed in this study and is described further later in this section.

Because the transportation conditions and operations are fundamentally the same now as in 2012, this current study therefore takes the same approach and utilizes the same methodologies as the 2012 Study. The commencement year was extended to 2017, so the future background traffic growth forecast was extended from 2014 to 2017. The 2014 Festival (Approved Project) projections from the 2012 Study were used as the basis for evaluating a 125,000 capacity festival.

Existing Traffic Volumes

The 2012 Study forecast future traffic volumes to the 2014 base year based on travel forecasts in the City of Indio General Plan and the City of La Quinta General Plan. This study continues to rely upon these travel forecasts by extending the forecasts three years to 2017 (essentially moving three years along the average traffic growth projection from 2012 to 2035 – the General Plan horizon year).

In order to confirm that this methodology would accurately reflect traffic conditions at commencement of the Modified Project in 2017, new traffic counts were taken in March 2015 at a sample of eight representative intersections in the study area. These counts were compared to projected counts for 2015 from the 2012 Traffic Study. The results were analyzed by key roadway corridor, for each of the three time periods studied.

As is typical, some existing 2015 traffic counts were very similar to the projected 2015 counts from the 2012 Study methodology, some were lower, and some were higher. The results are summarized in Appendix A. The traffic counts for Friday 3pm to 4pm were slightly higher than the projections for 2015 from the 2012 methodology. The traffic counts for Saturday 2pm to 3pm were lower than the projections for 2015 from the 2012 methodology. The traffic counts for Monday 8am to 9am were slightly higher than the projections for 2015 from the 2012 methodology.

Based on this information, it was decided for the Friday and Monday time periods to use the 2015 traffic counts where collected and for the remaining study intersections to factor up the 2012 traffic counts to represent the slightly higher background 2015 conditions. This factoring was done on a roadway by roadway basis, using the factors shown in Appendix A. However, while the Saturday time period background 2015 volumes were lower than projected in the 2012 Study, no reduction adjustments were made in this study, so the analysis is somewhat conservative for that time period.

Future Without Modified Project Traffic Volumes (99,000 Festival, No Festival Expansion)

The Future Without Modified Project traffic volumes represent the Approved Festival as the baseline, plus growth in background traffic to 2017. The 2014 Festival forecast from the 2012 Study was used as the starting point. Background traffic growth was then estimated by applying the same background growth factors as used in the 2012 Study for a period of three years from 2014 to 2017, and adding to the 2014 Festival forecast from the 2012 Study.

Future With Modified Project Traffic Volumes (Festival Expansion to 125,000 Person Capacity)

Based on the methodology described earlier, the Future With Modified Project traffic volumes projections were obtained by (1) using the 2014 Festival conditions as a base, (2) adding the background growth in traffic on the roadway system between 2014 and 2017, and (3) adding the projected growth in Festival traffic from a 99,000 attendance to a 125,000 capacity event as described above in this chapter, to obtain total future traffic with a 125,000 capacity festival.

II.3 Expanded Festival Characteristics – 99,000 to 125,000 Person Capacity (Higher Attendance) Festival

Future festivals at the 125,000 person capacity level would have an overall site configuration very similar to the 99,000 person capacity level as described in the 2012 Traffic Study. There would be some on-site changes to performance areas and back of house / production areas, but these would not affect the overall transportation patterns of the festival.

The Modified Project would include an increase in on-site camping and increased use of the existing shuttle service, which would minimize the increase in daily auto trips to day parking. The capacity of on-site camping will be increased, and the capacity of the shuttle service will be expanded to accommodate the increase in attendance and recognizing current event patrons preferences for shuttle use. The day parking capacity will also be increased as necessary, but only to the extent necessary for the remainder of the increase in attendance.

Of the projected increase in total attendance of 26,000 persons, 32% (8,303 persons) would be accommodated in camping, 33% (8,580 persons) on the shuttle service, 31% (8,233 persons) by daily auto (13% by Taxi/Pick-Up/Drop-Off (PUDO) /Uber and 18% by day parking), 2% by walk/bike (429 persons), and 2% by staff (455 persons). The methodology for estimating the projected increases in attendance by mode of arrival and the related changes with regard to transportation, which are defined as Project Design Features, are described in more detail in the following section.

II.3.1 Project Design Features

Parking Capacity

The current and proposed parking supply is shown in Table II-1. The existing on-site parking supply of 31,270 spaces would be increased to approximately 36,240 spaces, and would be comprised by parking type as shown in Table II-1.

Table II-1 Modified Project Parking Supply - 125,000 Person Capacity Festival & Comparison to 99,000 Capacity Festival

Parking Type	*99,000 Capacity Festival*	*125,000 Capacity Festival*
Car Camping	12,500	14,320
Tent Camping	1,010	1,010
Companion Parking	1,700	1,700
Day Parking	10,900	13,400
Staff Parking	5,160	5,810
Total	*31,270*	*36,240*

Camping

The number of persons in camping is projected to increase by about 26% - an equivalent increase to the overall attendance increase of 26.3%. For the Higher Attendance Events, car camping is projected to increase from 28,140 to 35,541 persons. Tent camping and companion camping are expected to increase similarly from 1,193 to 1,507 persons and from 2,236 to 2,824 persons respectively. The total number of people in camping will increase from 31,570 to 39,872.

This will require an additional utilization of 3,180 camping spaces, which would be provided through a combination of additional spaces provided and utilization of spaces that previously went unused in prior festivals. The number of physical camping spaces will be increased by 1,820 spaces from 15,210 to 17,030. In the 2014 festival, approximately 2,441 spaces in the camping supply were unused. Full utilization of those spaces and the increase in physical spaces will yield net additional spaces available of 4,261 spaces – sufficient to accommodate the projected increased need of 3,180 spaces. The additional camping areas will be located adjacent to existing camping areas and will be accessible at the same location as all current camping. The distribution of camping traffic will therefore not change.

Shuttles

As shown in Table II-2, the proportion of patrons using the shuttle system will increase from 18% to 22%. Approximately 39% of the increase in patrons will be accommodated on the shuttle. Shuttle ridership has consistently increased over the years. The number of people using the shuttle system is projected to increase by 58% from 17,745 to 27,951 persons. The additional ridership will be accommodated by providing additional shuttle service and directing patrons to purchase shuttle tickets when purchasing event tickets consistent with current operations. There is ample capacity in Lot 2 on Avenue 50 to expand the on-site shuttle terminal. The shuttle routes will remain the same.

Autos

With the anticipated increase in shuttle service and Uber, the number of people arriving by autos is projected to increase by 20%, less than the attendance increase of 26.3%. Due to the increasing popularity of Uber, the increase in Uber use is expected to be higher than the increase in drive to day parking, as explained below.

Taxi/PUDO/Uber

While Taxi and PUDO were in operation at the festival prior to 2014, Uber was not. Uber first operated at the festival in 2014 and again in 2015. Driveway counts at the PUDO, taxi, and Uber lots were conducted at the 2015 Festival to obtain current data. Based on these data, a growth of 54% in arrivals by taxi/PUDO/Uber is forecast for 2017 (largely in Uber use), from 6,426 in 2014 to 9,896 persons in 2017. An enhanced and larger taxi/Uber Lot will be provided on Monroe Street south of the existing location at Avenue 49 to accommodate the increase. These changes were reflected in the current analysis by removing traffic volumes associated with taxis from the old lot in the southwest corner of the site at Madison Street & Avenue 52, and adding those volumes to/from the new lot on Monroe Street below Avenue 49 (based on taxi traffic counts conducted at the 2015 Festival). Traffic volumes for Uber/Lyft service were based on traffic counts conducted at the 2015 Festival.

Day Parking

The use of day parking is projected to increase by 9%, from 34,082 in 2014 to 37,219 persons. This will require a total of 1,600 additional parking spaces. An additional 552 spaces will be required to replace the amount of spaces that were previously used for day parking in unused camping spaces. As the camping spaces will in the future be fully utilized, those spaces will need to be replaced by adding to the day parking supply, for an overall increase need of 2,152 spaces. The on-site day parking capacity will be expanded by approximately 2,500 spaces at the north end of the site on Lot 1A/1B.

Walk/Bike

As shown in Table II-2, the proportion of patrons using walks/bike will remain at 2%. Approximately 2% of the increase in patrons will be accommodated by walk/bike. The projected increase in walk/bike trips is 26 % (the same as for the overall festival increase) from 1,632 to 2,061 persons.

Staff

A 6% increase in staff is projected, from 7,545 to 8,000. This will require an increase of 224 staff parking spaces. The number of staff parking spaces supplied will be increased from 5,160 to 5,810 spaces, which will be sufficient to meet the increased demand. The additional spaces will be provided in one small lot on Avenue 50 just west of Monroe.

Transportation Management Plan

The Transportation Management Plans (TMP) for the festivals continue to evolve and be enhanced from year to year. This analysis includes all of the features of the latest Transportation Management Plans (which were developed and operated for the 2015 festivals). The Modified Project also includes some further modifications to these plans, which are listed below.

125,000 Capacity Festival

General

Increase the proportion of event attendees using the shuttle to 22%, which would increase shuttle volume and minimize the increase in day parking trips. This would be achieved by continuing and increasing bundling shuttle passes with event tickets at the time of purchase to facilitate use of the shuttles.

Widen the north side of Avenue 52 from Madison Street to Via Bendita to provide two westbound lanes. Include sidewalk and bike lane.

Where the TMP calls for a Traffic Control Officer (TCO) at a signalized intersection, a Traffic Signal Manual Control Device (TSMCD) should be provided to enable the TCO to operate the signal manually.

Friday: 3:00 to 4:00pm

I-10 Eastbound Ramps at Monroe Street:	Add Traffic Control Officer (TCO). Add TSMCD

Saturday: 2:00 to 3:00pm

I-10 Eastbound Ramps at Monroe Street:	Add Traffic Control Officer (TCO) Add TSMCD
Jackson Street & Avenue 50:	Add Traffic Control Officer (TCO) Add TSMCD

Monday: 8:00 to 9am

I-10 Eastbound Ramps at Monroe Street:	Add Traffic Control Officer (TCO) Add TSMCD
Jefferson Street & Indio Blvd:	Add Traffic Control Officer (TCO) Add TSMCD
Jefferson Street & Avenue 48:	Add Traffic Control Officer (TCO) Adjust TMP to sign/direct exiting traffic onto Madison Street to Highway 111 and west to Jefferson Street as an additional and alternative route to west on Avenue 50, to provide a better distribution of traffic leaving the event.

Exiting camping traffic will not be allowed to use Avenue 51 to Monroe Street during this hour. All exiting camping traffic will be directed to Madison Street

II.3.2 Trip Generation – Festival Attendees by Type and Mode of Arrival

This section describes the estimated transportation characteristics of the 125,000 person capacity festival. The increase in capacity to 125,000 persons represents about a 26.3% increase over the 99,000 persons. The trip estimation methodology is the same as used and described in the 2012 Study.

Persons

Based on the proposed site characteristics described above, the breakdown of festival attendees by type and by mode of arrival was estimated for the 125,000 capacity festival and compared to the 99,000 capacity festival, and is shown in Table II-2. There would be an overall increase of 26,000 persons attending the festival.

As shown in Table II-2, 32% of the increase of 26,000 persons would occur in camping. These people only arrive once and depart once (the vast majority arrive on Thursday or early Friday morning, and depart Monday morning), so would not add to daily trips during the festival weekend. About 39% of the increase would occur on the shuttle, which also would not add auto trips. Only about 25% of the increase would occur by auto arrivals (12% by day parking and 13% by Uber/Taxi/Drop-Off - largely an increase in Uber trips).

As also shown in Table II-2, the overall number of vehicle trips that would be generated by the Modified Project would be approximately 36,502 trips, compared to approximately 30,747 trips for the Approved Festival[6], or about a 19% increase.

Vehicle Trips During Analysis Hours

The trip totals were converted to vehicle trip estimates for the three analysis hours. Table II-3 shows the estimated vehicle trips for each of the three analysis hours for the 99,000 capacity Approved Festival from the 2012 Traffic Study. Table II-4 shows the estimated vehicle trips for the 125,000 capacity Modified Festival. Table II-5 shows the number of additional vehicle trips that would occur with the 125,000 capacity Modified Festival compared to the trips for the 99,000 capacity Approved Festival.

As the analysis in Table II-2 showed, an additional 26,000 people would generate 5,754 additional vehicles. Approximately 3,180 additional vehicles (the majority) would be associated with car camping, an additional 1,054 vehicles would be associated with day parking, and 1,223 additional vehicles associated with Taxi/Uber/Drop-Off. These additional vehicles would not all be on the roadway system at the same time because their arrivals are spread out over a number of hours. The following analysis therefore identifies the proportion of the trips that would actually occur during the three peak analysis hours, as described below, and in Tables II-3 to II-5.

These tables show the total daily vehicle trips by each type (except for trips associated with camping, which reflect the total trips for the entire festival, and for the shuttle which represent daily person trips), and the estimated percentage of the daily total that would occur in each of the analysis hours. These hourly estimates were based on scan data from the 2012 Festival showing activity by hour of day where available, on counts where available, or on the operating experience of festival staff and on the observations made by The Mobility Group during the 2012 Festival.

[6] From estimates of mode breakdown for persons attending festival. Represents all camping arrivals, plus day arrivals for highest day. Actual daily vehicle arrivals (non-camping) for highest day estimated at 21,777 vehicles for Modified Festival and 18,658 vehicles for the Approved Festival.

Table II-2 **Festival Attendees - Estimates by Type & Mode of Arrival** 12/16/2015

125,000 Capacity Festival & Comparison to 99,000 Capacity Festival

Type	Approved Project 99,000 Capacity			Modified Project 125,000 Capacity			Net Change (125,000 Cap - 99,000 Cap)			
	Vehicles	Persons	% of Total	Vehicles	Persons[1]	% of Total	Vehicles Increase	Persons Increase	% Person Increase	% of Total Person Increase
Car Camping[2]	10,619	28,140	28%	13,412	35,541	28%	2,793	7,401	26%	28%
Tent Camping[2]	450	1,193	1%	569	1,507	1%	119	314	26%	1%
Sub-Total Camping	11,069	29,333	30%	13,980	37,048	30%	2,911	7,715	26%	30%
Companion Camping[2]	1,021	2,236	2%	1,290	2,824	2%	269	588	26%	2%
Total - Camping	12,090	31,570	32%	15,270	39,872	32%	3,180	8,302	26%	32%
Day Parking[3]	11,452	34,082	34%	12,506	37,219	30%	1,054	3,137	9%	12%
Shuttle[4]	N/A	17,745	18%	N/A	27,951	22%	N/A	10,206	58%	39%
Uber/Taxi/PUDO[5]	2,262	6,426	6%	3,485	9,896	8%	1,223	3,470	54%	13%
Walk/Bike[6]	N/A	1,632	2%	N/A	2,061	2%	N/A	429	26%	2%
Total - Patron		91,455	92%		117,000	94%		25,545	28%	98%
Staff/Security[7]	4,944	7,545	8%	5,242	8,000	6%	298	455	6%	2%
GRAND TOTAL	30,747	99,000	100%	36,502	125,000	100%	5,754	26,000	26%	100%

Table II-3 Vehicle Trips by Key Hour – 99,000 Capacity Coachella Festival **12-16-15**

Type	Total Vehicles	Friday 3-4 pm		Saturday 2-3 pm		Monday 8-9 am	
		%	Total	%	Total	%	Total
Camping	12,090	1.2%	145	0.12%	15	25%	3,023
Day Parking	11,452	16.6%	1,901	15.4%	1,764	0%	0
Shuttle	17,745 pers.	11.6%	172	12.0%	202	0%	0
Taxi/PUDO	2,262	16.6%	750	15.4%	696	0%	0
Staff/Security	4,943	5.0%	494	5.0%	494	1%	99
Total	30,747		3,462		3,171		3,122

Table II-4 Estimated Vehicle Trips by Key Hour – 125,000 Capacity Coachella Festival

Type	Total Vehicles	Friday 3-4 pm		Saturday 2-3 pm		Monday 8-9 am	
		%	Total	%	Total	%	Total
Camping	15,270	1.2%	183	0.12%	18	25%	3,818
Day Parking	12,506	16.6%	2,076	15.4%	1,926	0%	0
Shuttle	27,951 pers.	11.6%	270	12.0%	280	0%	0
Uber	2,126	16.6%	706	15.4%	655	0%	0
Taxi	91	16.6%	30	15.4%	28	0%	0
PUDO	1,269	16.6%	421	15.4%	390	0%	0
Staff/Security	5,242	5.0%	524	5.0%	524	1%	105
Total	36,504		4,210		3,821		3,923

Table II-5 Estimated Vehicle Trips by Key Hour – Increase from 99,000 Cap Festival to 125,000 Cap Festival 12-16-15

Type	Total Vehicles	Friday 3-4 pm				Saturday 2-3 pm				Monday 8-9 am			
		%	In	Out	Total	%	In	Out	Total	%	In	Out	Total
Camping	3,180	1.2%	38	0	38	0.12%	4	0	4	25%	0	795	795
Day Parking	1,054	16.6%	175	0	175	15.4%	162	0	162	0%	0	0	0
Shuttle	10,206 pers.	11.6%	50	49	99	12.0%	51	51	102	0%	0	0	0
Uber	746	16.6%	353	353	706	15.4%	203	204	407	0%	0	0	0
Taxi	32	16.6%	26	25	51	15.4%	28	29	57	0%	0	0	0
PUDO	445	16.6%	-176	-175	-351	15.4%	-43	-44	-87	0%	0	0	0
Staff/Security	298	5.0%	15	15	30	5.0%	15	15	30	2%	6	6	12
Total	5,755		481	267	748		420	255	675		6	801	807

Note:

All trips in one directions, except shuttle, and Uber/Taxi/PUDO which are two directional.
Proportional splits between Taxi, PUDO and Uber trips were based on traffic counts conducted during the 2015 festival.

Table II-3 shows the hourly trips for the Approved Festival, Table II-4 show the projected hourly trips for the Modified Festival, and Table II-5 shows the additional trips that would be generated for the Modified Festival.

Friday 3:00 to 4:00 pm Hour: As shown in Table II-5, the Modified Project would generate a total of approximately 748 additional vehicle trips. These trips would include a small amount of inbound camping arrivals (the vast majority of camping patrons have already arrived by this time), an increase in shuttle buses, an increase in day parking trips, and the majority would be inbound trips to Uber. The trips by shuttle buses, to taxi/Uber/pick-up, drop-off, and staff trips would be comprised of both inbound and outbound trips.

Saturday 2:00 to 3:00 pm Hour: As also shown in Table II-5, the Modified Project would generate a total of approximately 675 additional vehicle trips. This would include a very small number of inbound camping patrons as virtually all camping arrivals have occurred by that time, so the vast majority of these additional trips would be Uber trips and trips inbound to day parking. The trips by shuttle buses, to taxi/Uber/pick-up, drop-off, and staff trips would be comprised of both inbound and outbound trips.

Monday 8:00 to 9:00am Hour: As also shown in Table II-5, the Modified Project would generate a total of approximately 807 additional vehicle trips. The vast majority of these trips would be outbound from the Project Site, being camping patrons leaving the site.

Distribution of Additional Vehicle Trips

The distribution of additional trips was assumed to be the same as used in the 2012 Study for all camping and parking lots, with one exception. The distribution of Taxi/Uber/Lyft trips reflects the Transportation Management Plan, which mandates these vehicles arrive via southbound Monroe Street to the respective lots and leave via southbound Monroe Street, eastbound Avenue 50, and northbound Jackson Street during the hours studied.

II.4 Future Traffic Volumes for 125,000 Person Capacity Festival

The estimated transportation volumes for the Modified Festival of a 125,000 person capacity festival used the 2014 Coachella Festival projections (99,000 person capacity) as a base, and then projected the changes that would occur with the expansion to the 125,000 attendance at that event with the increased capacity for the Project - as described in the preceding section. The impact analysis compares the traffic volume projections for the Modified Festival of 125,000 person capacity festival to the Approved Festival 99,000 person capacity.

Future Without Project Traffic Volumes

The Future Without Project traffic forecasts are shown in Figure II-1, for each time period.

Future With Project Traffic Volumes

The Future With Project traffic volume projections are shown in Figure II-2 for each of the three analysis hours.

II.5 Expanded Festival Characteristics – 75,000 to 85,000 Person Capacity (Lower Attendance) Festival

The Approved Music Festivals Plan increased the permitted capacity of a Lower Level Attendance Festival to 75,000 persons. This analysis of the Modified Festival with 85,000 person capacity follows the same methodology used for the evaluation of the 125,000 Capacity Festival and in the 2012 Study, described in the preceding Section of this chapter.

Future festivals at the 85,000 person capacity level would have an overall site configuration very similar to the 75,000 person capacity level as described in the 2012 Traffic Study. There would be some on-site changes to performance areas and back of house / production areas, but these would not affect the overall transportation patterns of the festival.

As with the Modified Higher Level Attendance Festivals, the Modified Project would include an increase in on-site camping and an increased use of the shuttle service which would minimize the increase in daily auto trips to day parking for the Lower Attendance Festivals. The capacity of on-site recreational vehicle (RV) camping will be increased, and the capacity of the shuttle service will be expanded, to accommodate the increase in attendance. The day parking capacity will also be increased as necessary to accommodate the remainder of the increase in attendance.

Of the projected increase in total attendance of 10,000 persons, 19% would be accommodated in camping, 33% on the shuttle service, 39% by auto (27% by Taxi/PUDO/Uber and 12% by day parking), 2% by walk/bike, and 7% by staff.

These changes with regard to transportation, which are defined as Project Design Features, are described in more detail in the following section.

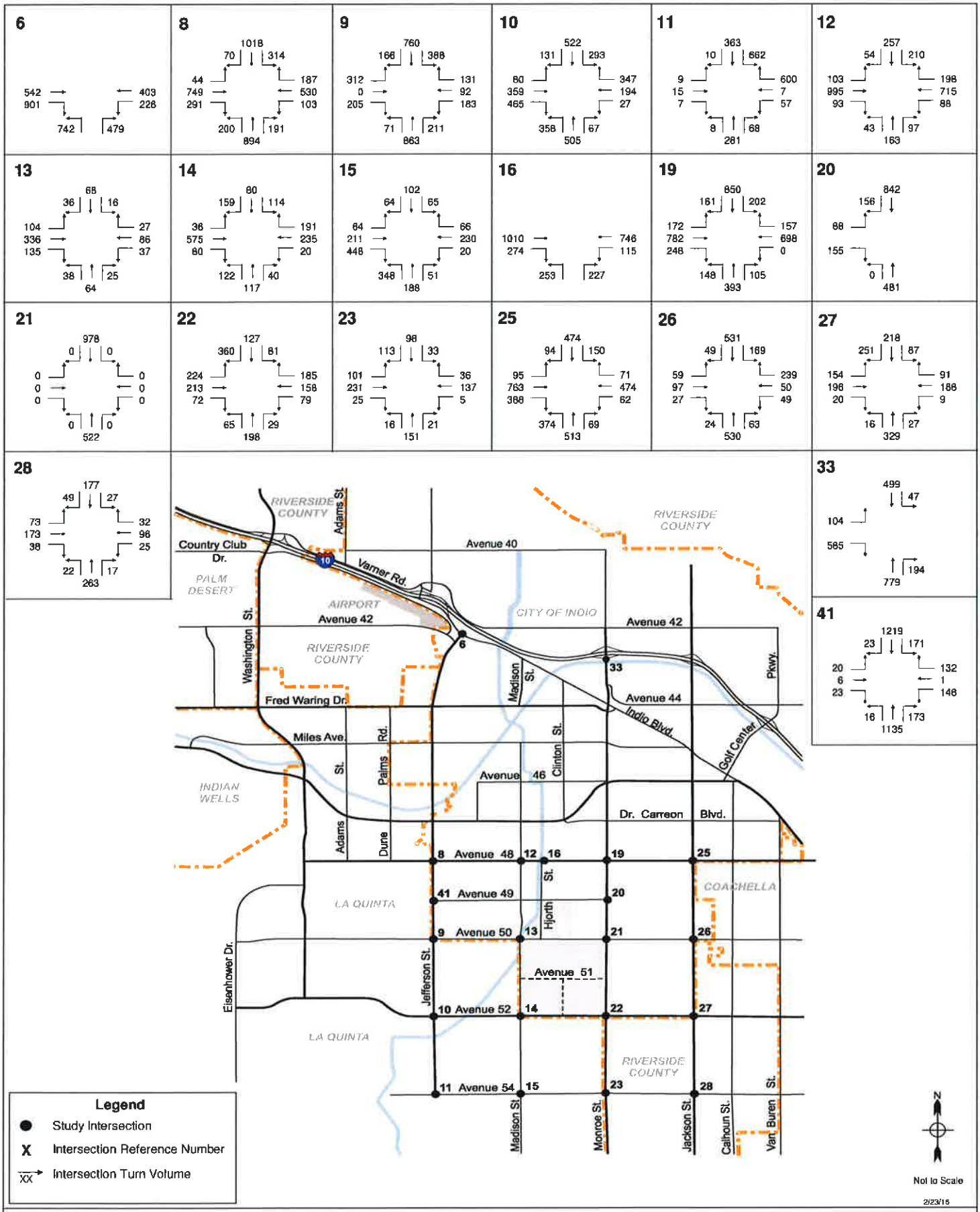

Figure II-1a
Future Without Project - 125,000 Capacity Festival – Traffic Volumes – Friday 3-4 PM

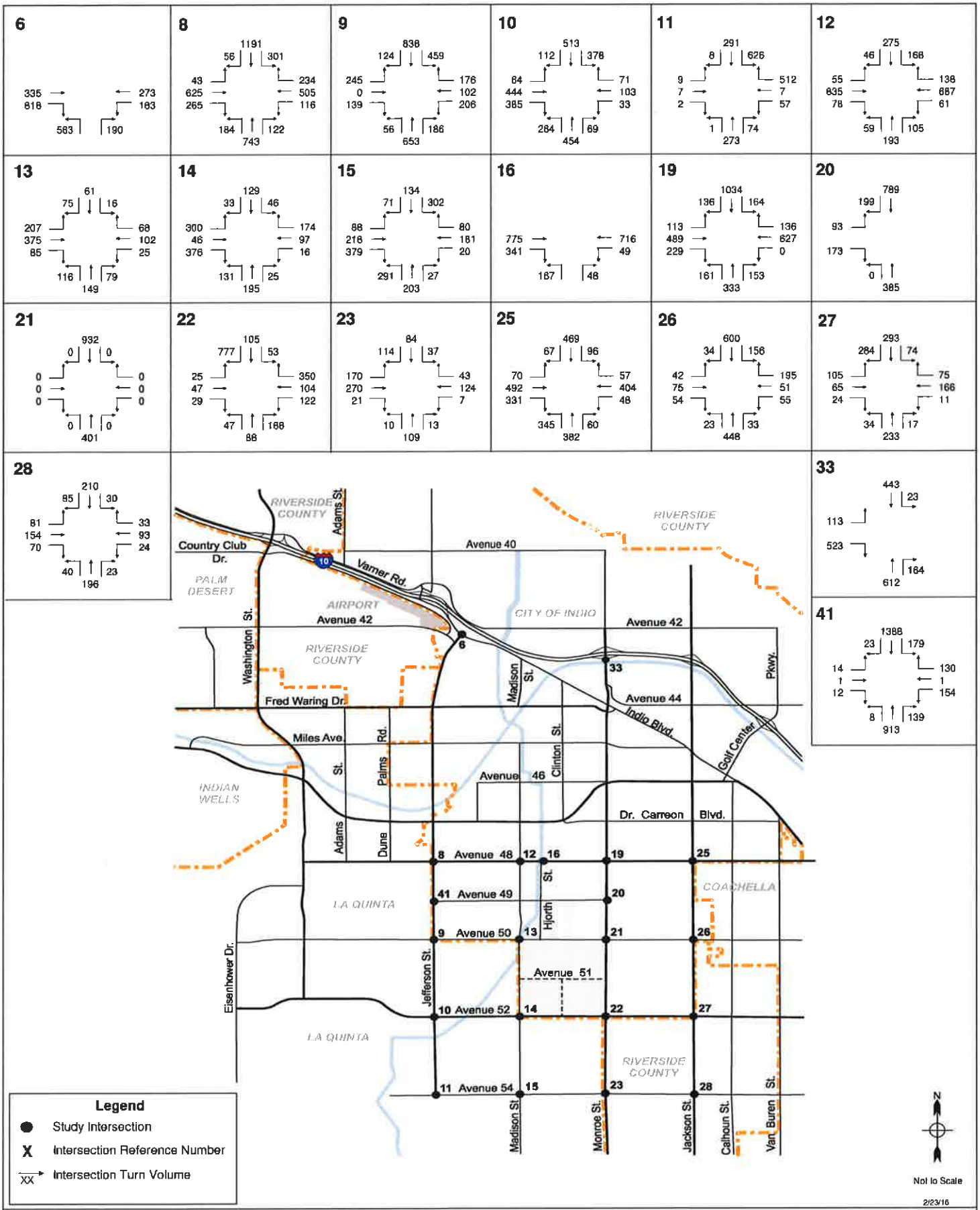

Fig II-1b
Future Without Project - 125,000 Capacity Festival – Traffic Volumes – Saturday 2-3 PM

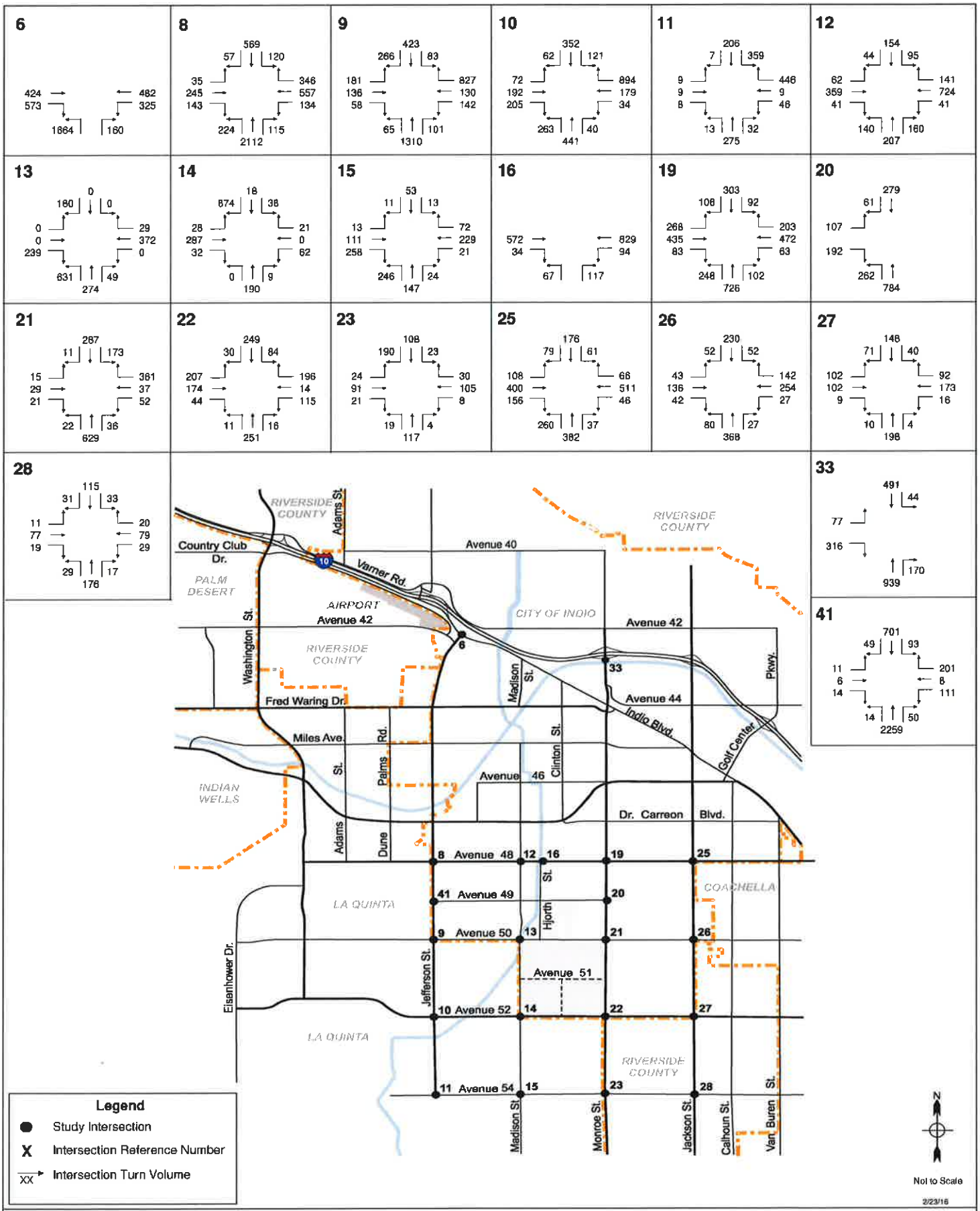

Fig II-1c
Future Without Project - 125,000 Capacity Festival – Traffic Volumes – Monday 8-9 AM

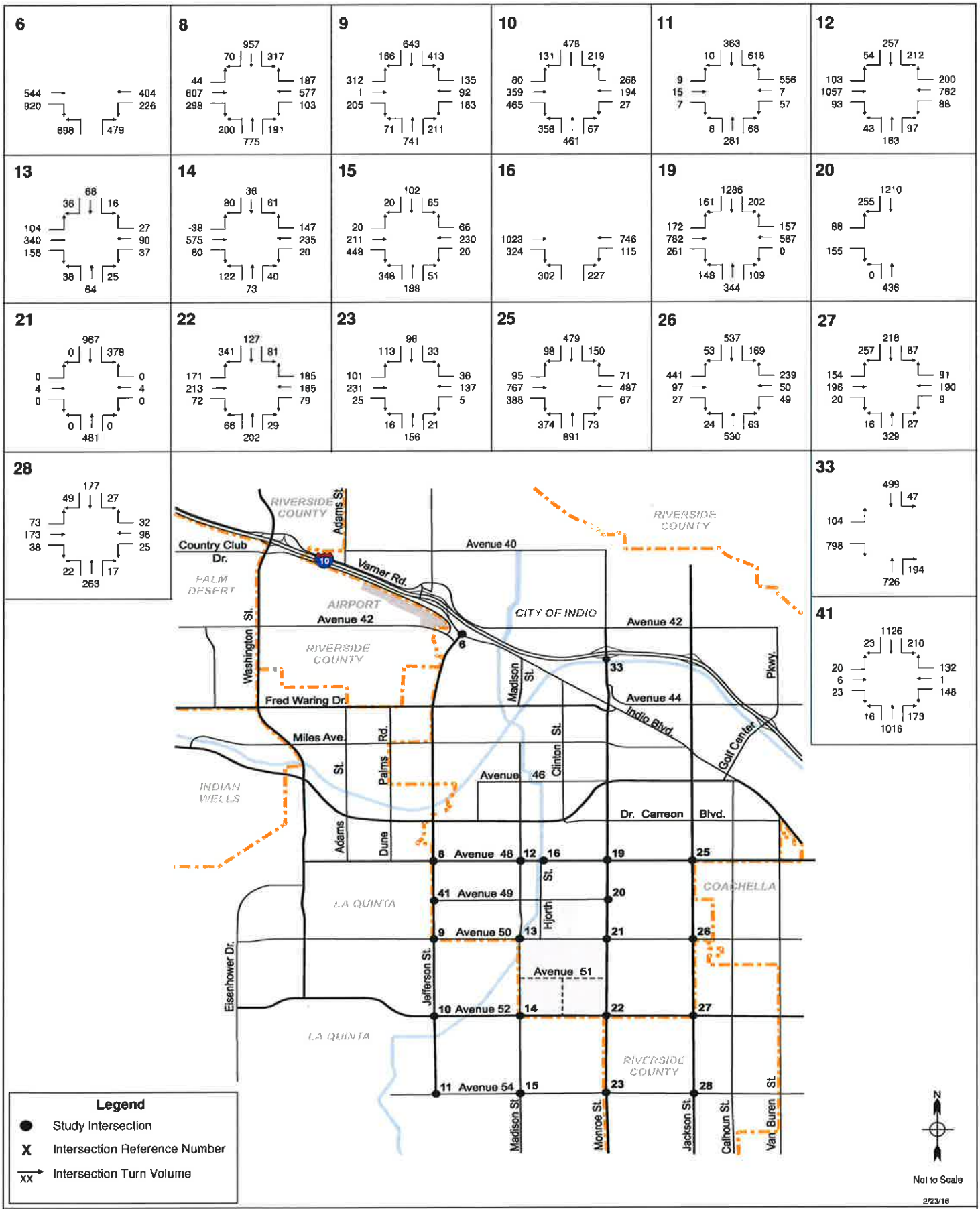

Fig II-2a
Future With Project - 125,000 Capacity Festival – Traffic Volumes – Friday 3-4 PM

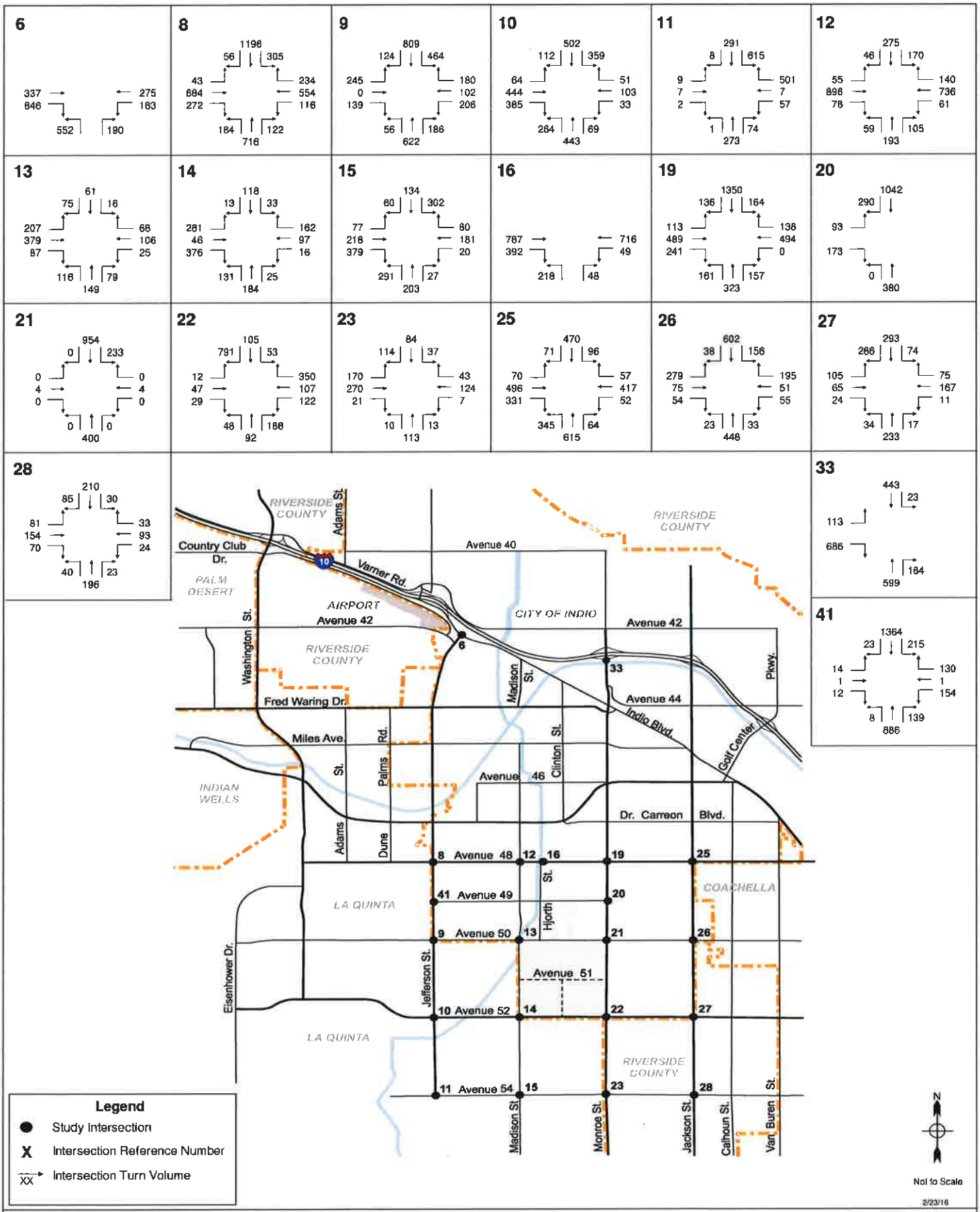

Fig II-2b
Future With Project - 125,000 Capacity Festival – Traffic Volumes – Saturday 2-3 PM

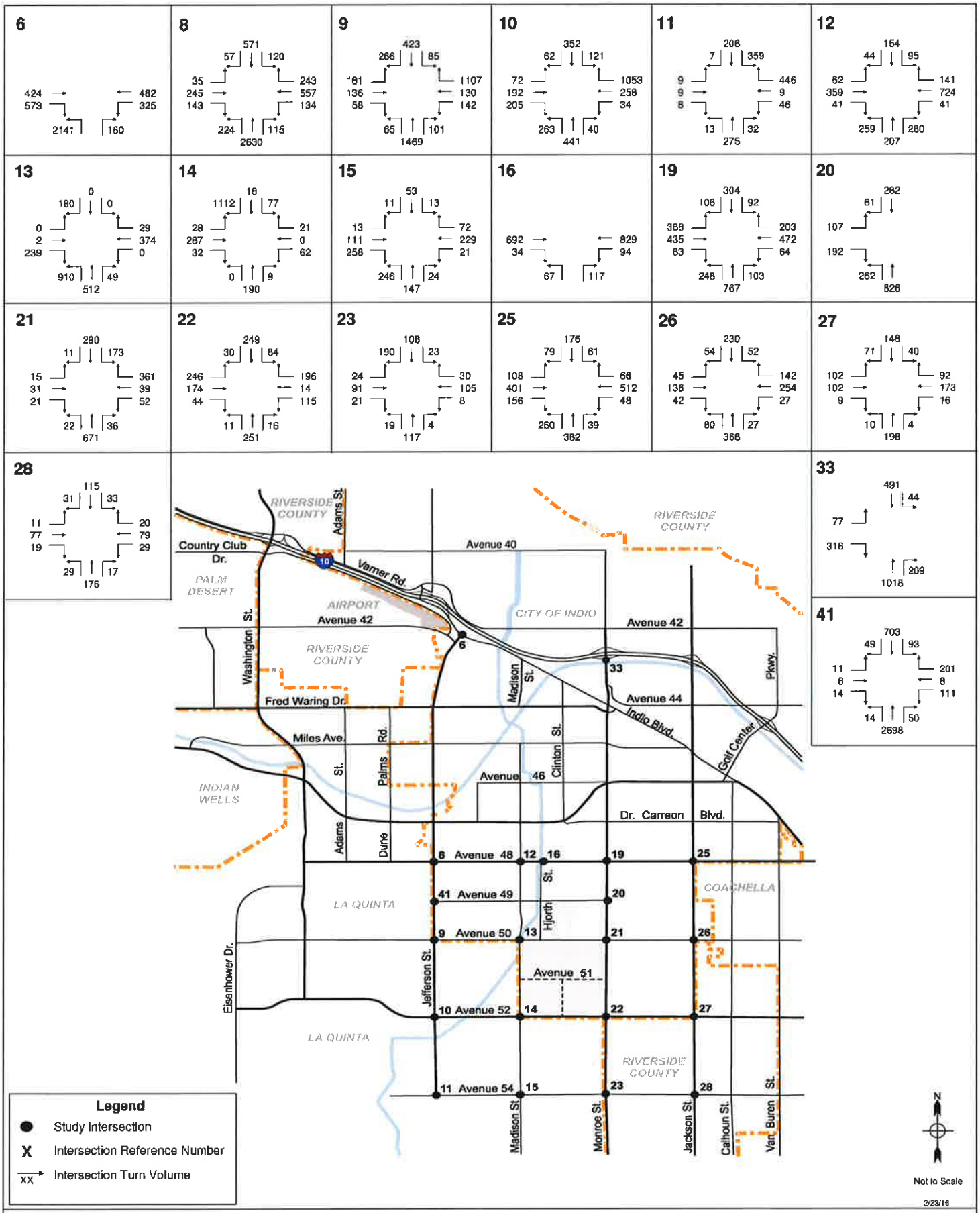

Fig II-2c
Future With Project - 125,000 Capacity Festival – Traffic Volumes – Monday 8-9 AM

II.5.1 Project Design Features

Parking Capacity

The current and proposed parking supply is shown in Table II-6. The existing on-site parking supply of 24,260 spaces would be increased to approximately 25,886 spaces, and would be comprised by parking type as shown in Table II-6.

Table II-6 Modified Project Parking Supply - 85,000 Person Capacity Festival & Comparison to 75,000 Capacity Festival

Parking Type	*75,000 Capacity Festival*	*85,000 Capacity Festival*
RV Camping	2,500	3,000
Car Camping	750	848
Tent Camping	380	424
Companion Parking	3,000	2,825
Day Parking	12,470	12,969
Staff Parking	5,160	5,820
Total	*24,260*	*25,886*

Camping

The number of persons in camping is projected to increase by about 9% - a somewhat lower increase than the overall attendance increase of 13.3%. RV camping is projected to increase from 9,975 to 11,970 persons. Tent camping and car camping are expected to increase similarly from 755 to 843 persons and from 1,916 to 2,165 persons respectively. Companion camping is expected to decrease slightly from 7,989 persons to 7,524 persons. The total number of people in camping will increase from 20,635 to 22,502. The additional camping spaces will be located adjacent to existing camping areas, and will be accessed at the same location as all current camping. The distribution of campaign traffic will therefore not change.

Shuttles

As shown in Table II-7, the proportion of patrons using the shuttle system will increase from 17% to 19%. Approximately 33% of the increase in patrons will be accommodated on the shuttle. Shuttle ridership has consistently increased over the years. The number of people using the shuttle system is projected to increase by 26% from 12,688 to 15,999 persons. The additional ridership will be accommodated by providing additional shuttle service and

directing patrons to purchasing shuttle tickets when purchasing event tickets. There is ample capacity in Lot 2 on Avenue 50 to expand the on-site shuttle terminal. The shuttle routes will remain the same.

Autos

The number of people arriving by autos is projected to increase by 11%, slightly less than the attendance increase of 13.3%. Due to the increasing popularity of Uber, the increase in Uber use is expected to be higher than the increase in drive to day park.

Taxi/PUDO/Uber

A growth of 50% in arrivals by taxi/PUDO/Uber is forecast for 2017, from 1,930 persons in 2014 to 2,897 persons in 2017.

Day Parking

The use of day parking is projected to increase by 4%, from 29,345 in 2014 to 30,540 persons. This will require a total of 424 additional parking spaces. The on-site day parking capacity will be expanded by 500 spaces, which will be more than sufficient and will be provided at the north end of the site on Lot 1A/1B.

Walk/Bike

The projected increase in walk/bike trips is approximately 13% (the same as for the overall festival increase) from 1,632 to 2,061 persons.

Staff

An increase in staff is projected of 13%, from 5,423 persons to 6,120. This will require an increase of 540 staff parking spaces. The number of staff parking spaces supplied will be increased from 5,160 to 5,820 spaces, an increase of 660 spaces which will be sufficient to meet the increased demand.

Transportation Management Plan

The Transportation Management Plans (TMP) for the festivals continue to evolve and be enhanced from year to year. This analysis includes all of the features of the latest Transportation Management Plans (which were developed and operated for the 2015 festivals). The Modified Project also includes some further modifications to these plans, which are listed below.

85,000 Capacity Festival

General

Where the TMP calls for a Traffic Control Officer (TCO) at a signalized intersection, a Traffic Signal Manual Control Device (TSMCD) should be provided to enable the TCO to operate the signal manually.

Friday: 3:00 to 4:00pm

I-10 Eastbound Ramps at Monroe Street:	Add Traffic Control Officer (TCO)

Monday: 8:00 to 9:00am

I-10 Eastbound Ramps at Monroe Street:	Add Traffic Control Officer (TCO) Add TSMCD
Madison Street & Avenue 50:	In addition to providing a Traffic Control Officer (TCO), modify the Traffic Plan to the following intersection configuration: northbound approach as two left-turn lanes and one shared through-right lane; southbound approach as one right-turn lane; eastbound approach as one through lane; and westbound approach as one through lane and one shared through-right lane.

II.5.2 Trip Generation – Festival Attendees by Type and Mode of Arrival

This section describes the estimated transportation characteristics of the 85,000 person capacity festival. The increase in capacity to 85,000 persons represents about a 13.3% increase over the 75,000 persons.

Persons

The breakdown of festival attendees by type and by mode of arrival was estimated for the 85,000 capacity festival and compared to the 75,000 capacity festival, and is shown in Table II-7. There would be an overall increase of 10,000 persons attending the festival.

As shown in Table II-7, 19% of the increase of 10,000 persons would occur in camping. These people only arrive once and depart once (the vast majority arrive on Thursday or early Friday morning, and depart Monday morning), so would not add to daily trips during the festival weekend. About 33% of the increase would occur on the shuttle, which also would

Table II-7 Festival Attendees - Estimates by Type & Mode of Arrival 11/23/2015

85,000 Capacity Festival & Comparison to 75,000 Capacity Festival

Type	Current 75,000 Capacity			Future 85,000 Capacity			Net Change			
	Vehicles	Persons	% of Total	Vehicles	Persons	% of Total	Vehicles Increase	Persons Increase	% Person Increase	% Increase
RV Camping	2,500	9,975	13%	3,000	11,970	14%	500	1,995	20%	20%
Car Camping	723	1,916	3%	817	2,165	3%	94	249	5%	2%
Tent Camping	285	755	1%	318	843	1%	33	87	11%	1%
Sub-Total Camping	3,508	12,646	17%	4,135	14,978	18%	627	2,331	18%	23%
Companion Camping	3,315	7,989	11%	3,122	7,524	9%	(193)	(465)	-6%	-5%
Total - Camping	6,823	20,635	28%	7,257	22,502	26%	434	1,866	9%	19%
Day Parking	10,406	29,345	39%	10,830	30,540	36%	424	1,195	4%	12%
Shuttle	N/A	12,688	17%	N/A	15,999	19%	N/A	3,311	26%	33%
Taxi/PUDO	1,930	5,480	7%	2,897	8,228	10%	967	2,748	50%	27%
Walk/Bike	N/A	1,426	2%	N/A	1,611	2%	N/A	185	13%	2%
Total - Patron		69,576	93%		78,880	93%		9,305	13%	93%
Staff/Security	4,219	5,424	7%	4,759	6,120	7%	540	695	13%	7%
GRAND TOTAL	23,378	75,000	100%	25,743	85,000	100%	2,365	10,000	10%	100%

Table II-8 Estimated Vehicle Trips by Key Hour – 75,000 Capacity Stagecoach Festival

Type	Total Vehicles	Friday 3-4 pm		Saturday 2-3 pm		Monday 8-9 am	
		%	Total	%	Total	%	Total
Camping	6,823	1.2%	82	0.12%	8	25%	1,706
Day Parking	10,406	16.6%	1,727	15.4%	1,603	0%	0
Shuttle	12,688 pers.	11.6%	123	12.0%	145	0%	0
Taxi/PUDO	1,930	16.6%	640	15.4%	594	0%	0
Staff/Security	4,219	5.0%	422	5.0%	422	1%	84
Total	23,378		2,994		2,772		1,790

Table II-9 Estimated Vehicle Trips by Key Hour – 85,000 Capacity Stagecoach Festival

Type	Total Vehicles	Friday 3-4 pm		Saturday 2-3 pm		Monday 8-9 am	
		%	Total	%	Total	%	Total
Camping	7,257	1.2%	87	0.12%	9	25%	1,814
Day Parking	10,830	16.6%	1,798	15.4%	1,668	0%	0
Shuttle	15,999 pers.	11.6%	155	12.0%	160	0%	0
Uber		16.6%	962	15.4%	892	0%	0
Taxi	2,897	5.0%	476	5.0%	476	1%	95
PUDO	4,759						
Staff/Security							
Total	25,619		3,478		3,205		1,909

Table II-10 Estimated Vehicle Trips by Key Hour – Increase from 75,000 Capacity Festival to 85,000 Capacity Festival

Type	Total Vehicles	Friday 3-4 pm				Saturday 2-3 pm				Monday 8-9 am			
		%	In	Out	Total	%	In	Out	Total	%	In	Out	Total
Camping	434	1.2%	15	0	15	0.12%	0	0	0	25%	0	327	327
Day Parking	424	16.6%	70	0	70	15.4%	65	0	65	0%	0	0	0
Shuttle	3,311 pers.	11.6%	16	16	32	12.0%	17	17	34	0%	0	0	0
Taxi	967	16.6%	36	36	72	15.4%	21	31	52	0%	0	0	0
PUDO		16.6%	-2	-2	-4	15.4%	-85	-95	-180	0%	0	0	0
Uber		16.6%	127	127	254	15.4%	213	213	426	0%	0	0	0
Staff/Security	540	5.0%	27	27	54	5.0%	27	27	54	1%	5	5	10
Total	2,365		289	204	493		258	193	451		5	332	337

Note:
A passenger-car equivalent factor of 3.0 was applied to all Camping trips.
All trips in one directions, except shuttle, taxi/PUDO, and staff security which are two directional.
Proportional splits between Taxi, PUDO and Uber trips were based on traffic counts conducted during the 2015 festival.

not add auto trips. About 39% of the increase would occur by auto arrivals (12% by day parking and 27% by Uber/Taxi/Drop-Off - largely an increase in Uber trips).

As also shown in Table II-7, the overall number of vehicle trips that would be generated by the Project would be approximately 25,743 trips, compared to approximately 23,378 trips for the Approved Festival, or about a 10% increase.

Vehicle Trips During Analysis Hours

The trip totals were converted to vehicle trip estimates for the three analysis hours. Table II-8 shows the estimated vehicle trips for each of the three analysis hours for the 75,000 capacity Approved Festival from the 2012 Traffic Study. Table II-9 shows the estimated vehicle trips for the 85,000 capacity Modified Festival. Table II-10 shows the number of additional vehicle trips that would occur with the 85,000 capacity Modified Festival compared to the trips for the 75,000 capacity Approved Festival

As the analysis in Table II-7 shows, an additional 10,000 people would generate 2,365 additional vehicles. Approximately 434 additional vehicles would be associated with camping, an additional 424 vehicles would be associated with day parking, and 967 additional vehicles associated with Taxi/Uber/Drop-Off. These additional vehicles would not all be on the roadway system at the same time, because their arrivals are spread out over a number of hours. The following analysis therefore identifies the proportion of the trips that would actually occur during the three peak analysis hours, as described below, and in Tables II-8 to II-10.

Friday 3:00 to 4:00 pm Hour: As shown in Table II-10, the Modified Project would generate a total of approximately 493 additional vehicle trips in the Friday 3:00 to 4:00 pm hour. These trips would include a small amount of inbound camping arrivals (the vast majority of camping patrons have already arrived by this time), and the majority would be inbound trips to Uber, with some also associated with day parking.

Saturday 2:00 to 3:00 pm Hour: As also shown in Table II-10 the Modified Project would generate a total of approximately 451 additional vehicle trips in the Saturday 2:00 to 3:00 pm hour. The vast majority of these additional trips would be Uber trips with some trips also by taxi and inbound trips to the day parking areas.

Monday 8:00 to 9:00 am Hour: As also shown in Table II-10 the Modified Project would generate a total of approximately 337 additional vehicle trips in the Monday 8:00 to 9:00 am hour. The vast majority of these trips would be outbound from the Project Site, consisting of camping patrons leaving the site.

II.6 Future Traffic Volumes for 85,000 Person Capacity Festival

The estimated transportation volumes for the Modified Festival of a 85,000 person capacity festival used the 2014 Stagecoach Festival projections (75,000 person capacity) as a base, and then projected the changes that would occur with the expansion to the 85,000 attendance at that event with the increased capacity for the Project - as described in the preceding section. The impact analysis compares the traffic volume projections for the Modified Festival of 85,000 person capacity festival to the Approved Festival 75,000 person capacity.

Future Without Project Traffic Volumes

The Future Without Project traffic forecasts are shown in Figure II-3, for each time period.

Future With Project Traffic Volumes

The Future With Project traffic volume projections are shown in Figure II-4 for each of the three analysis hours.

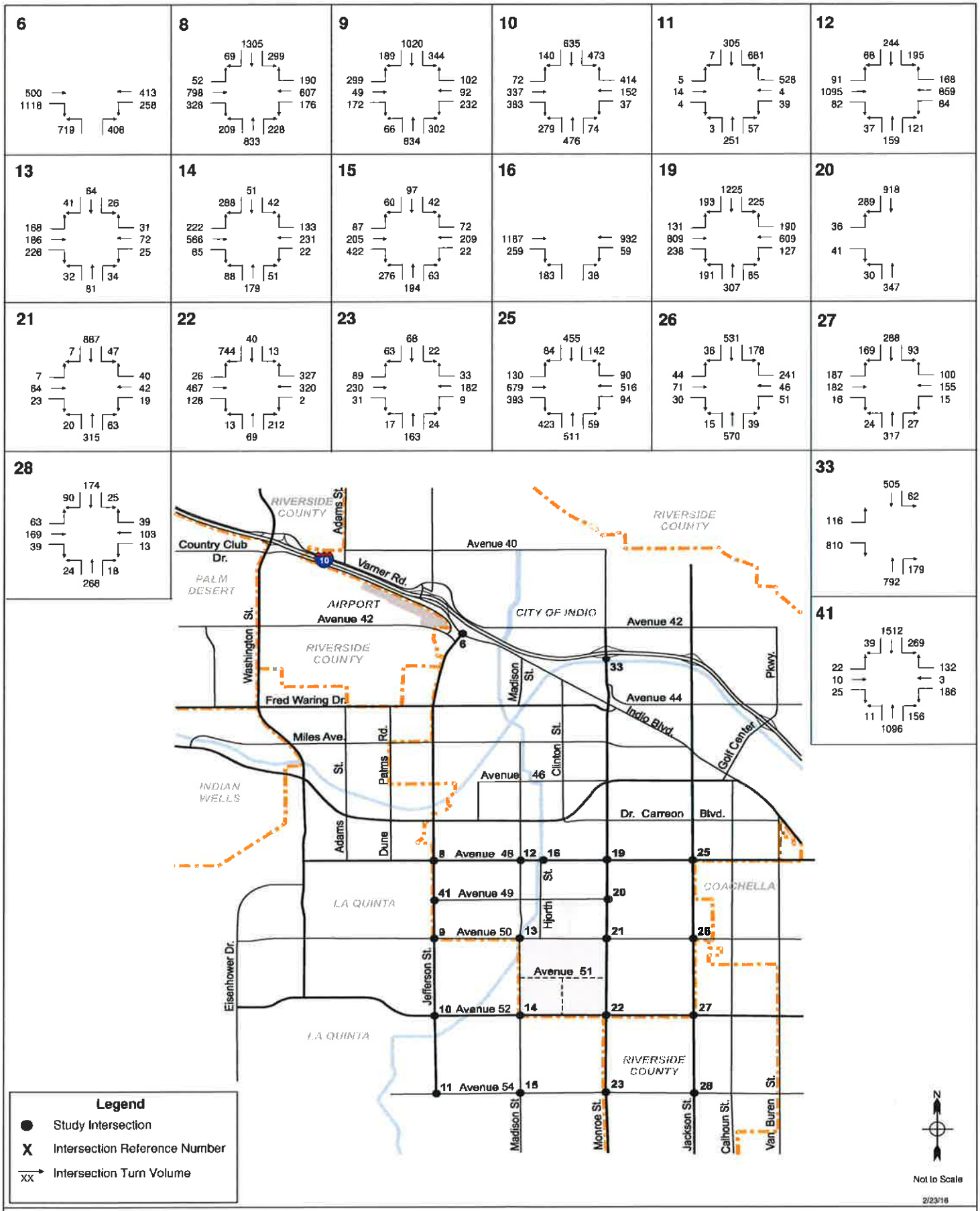

Fig II-3a
Future Without Project – 85,000 Capacity Festival - Traffic Volumes - Friday 3-4 PM

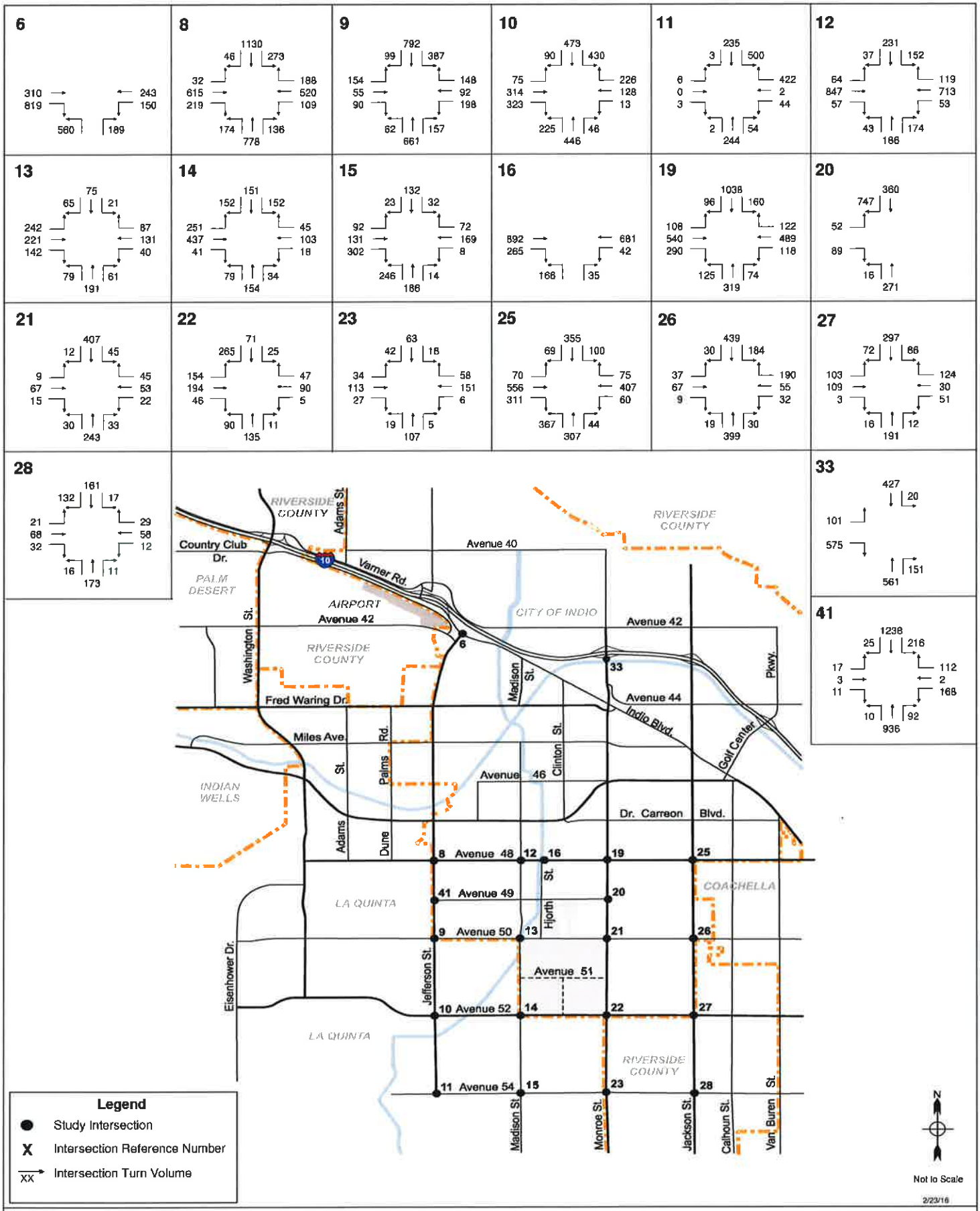

Fig II-3b
Future Without Project – 85,000 Capacity Festival - Traffic Volumes - Saturday 2-3 PM

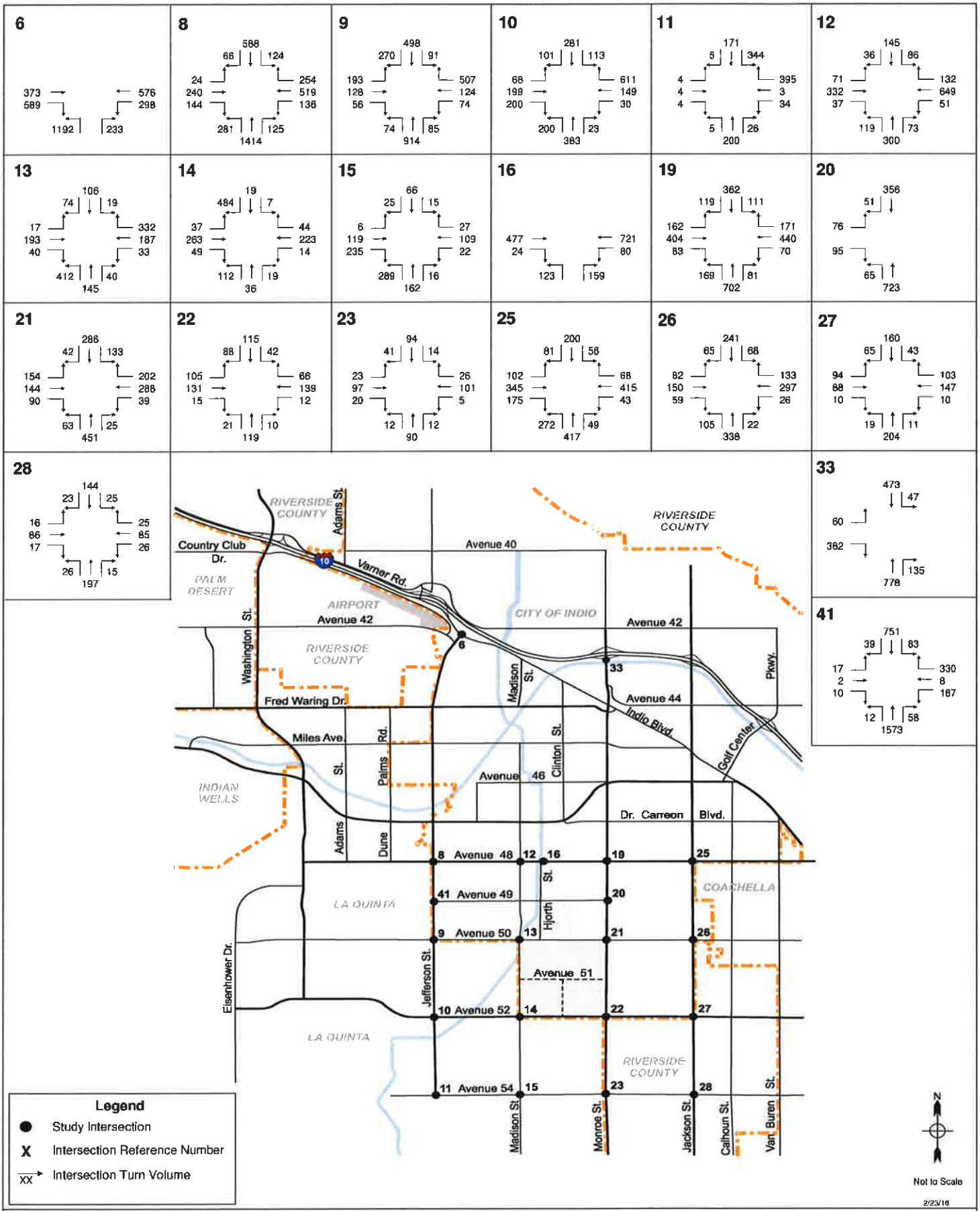

Fig II-3c
Future Without Project – 85,000 Capacity Festival - Traffic Volumes - Monday 8-9 AM

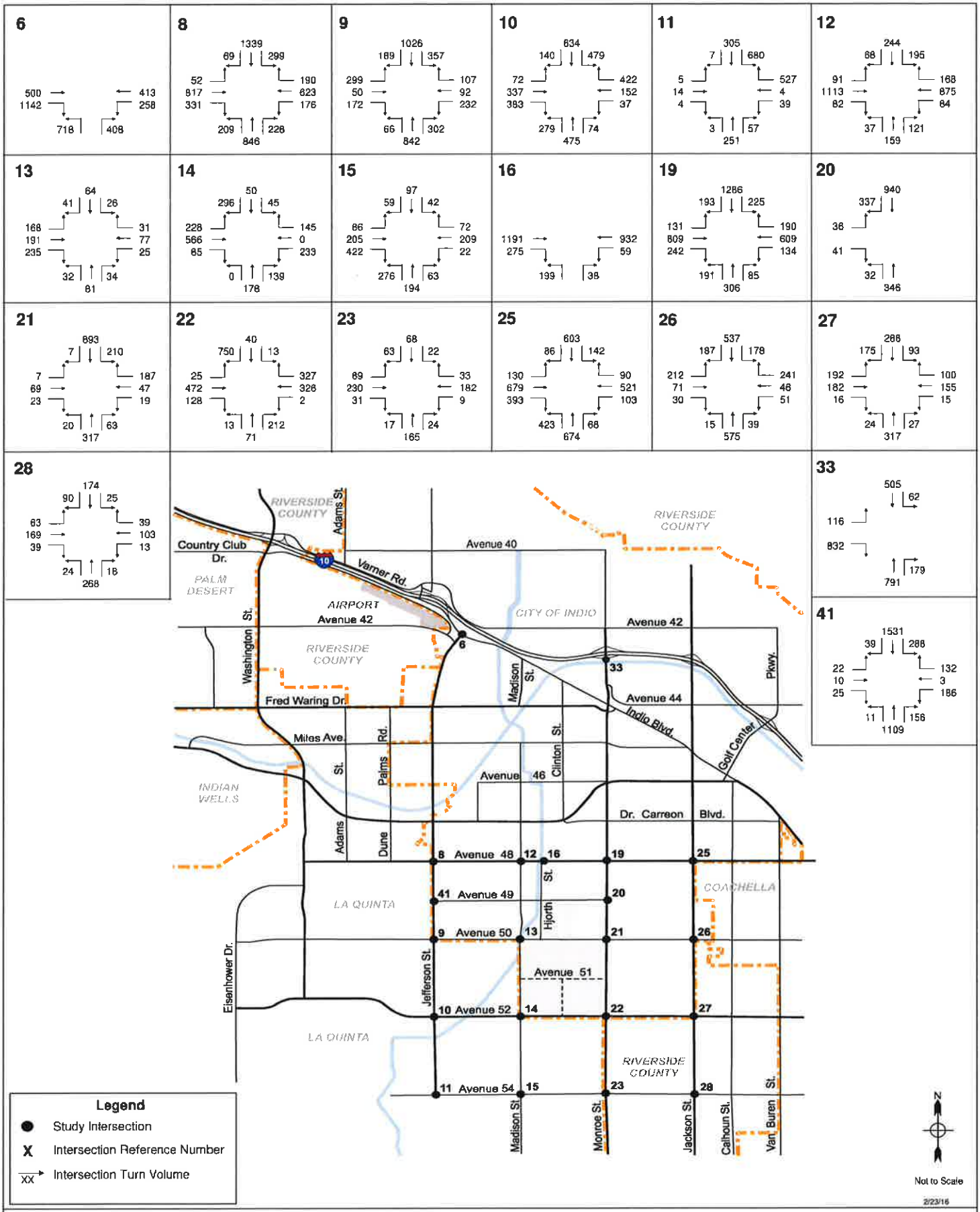

Fig II-4a
Future With Project – 85,000 Capacity Festival - Traffic Volumes - Friday 3-4 PM

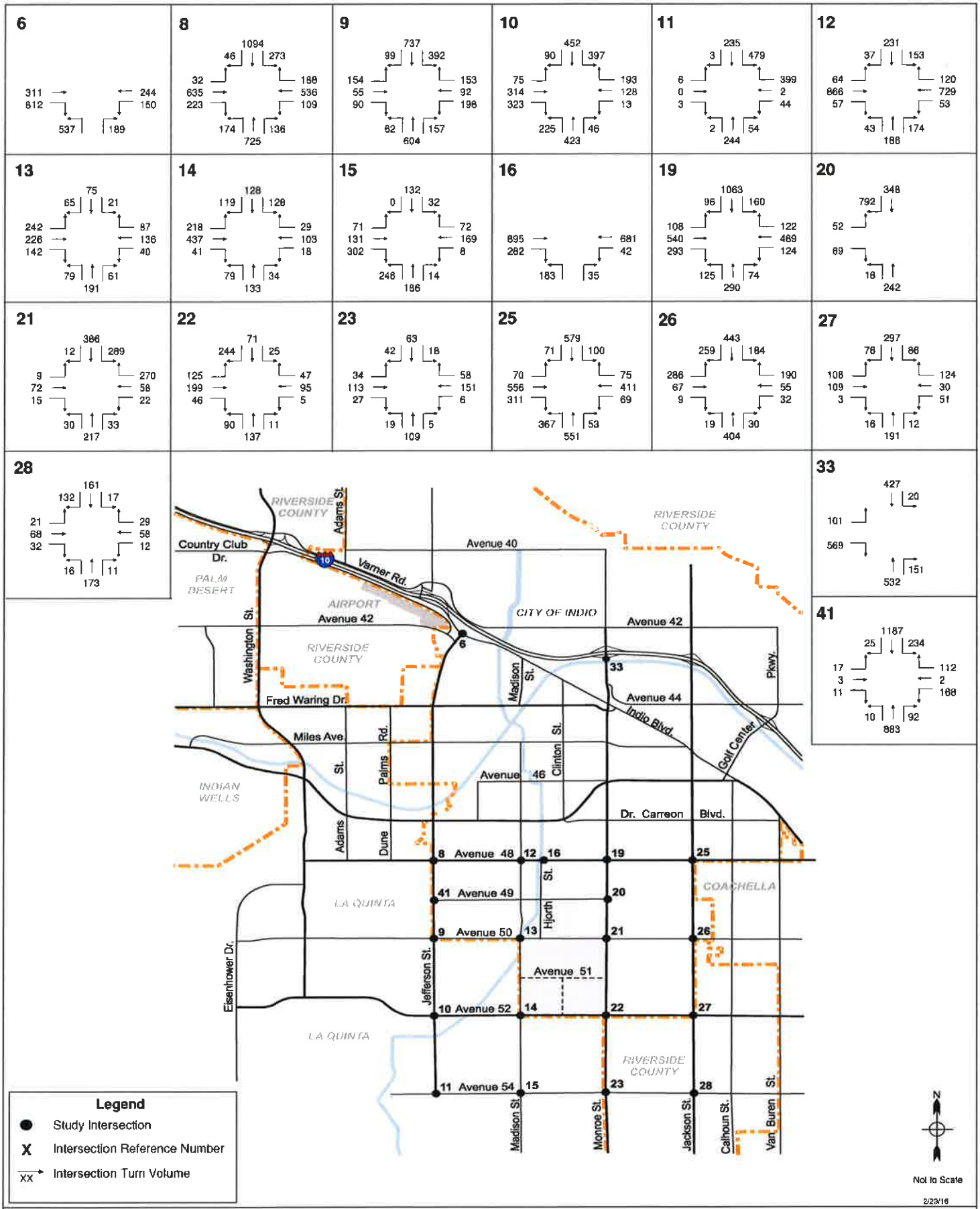

Fig II-4b

Future With Project – 85,000 Capacity Festival - Traffic Volumes - Saturday 2-3 PM

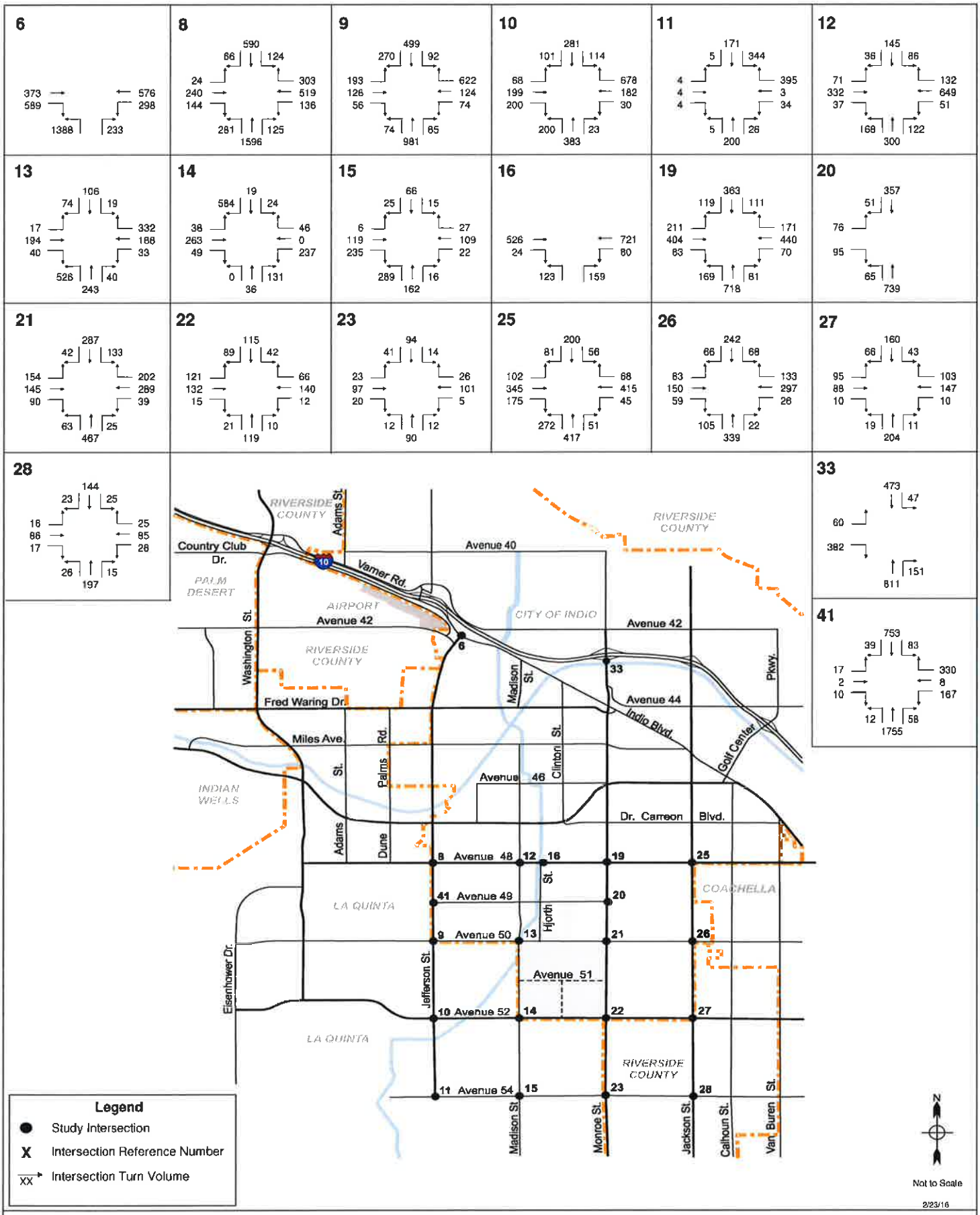

Fig II-4c
Future With Project – 85,000 Capacity Festival - Traffic Volumes - Monday 8-9 AM

III Updates to Impact Analysis

This chapter evaluates the potential impacts of the Modified Festivals Plan. It utilizes the information developed in preceding chapters, and the same methodology as the 2012 Study.

III.1 Level of Service Standards

The level of service standards and thresholds for significant impacts used in this study were the same as used in the 2012 Study.

Level of service descriptions and delay ranges are shown in Table III-1 for signalized intersections and in Table III-2 for unsignalized intersections.

Based on the level of service standards in use by the different jurisdictions in the study area, the following general standards were used.

The City of Indio[1] has adopted a standard of intersection performance (acceptable intersection condition) of Level of Service "D" (LOS D) during peak hours, except under certain conditions where a peak hour LOS D is not reasonable and feasible[2], in which case the standard is Level of Service "E" (LOS E).

The City of La Quinta has adopted a policy[3] stating that the City strives to maintain a minimum intersection level of service of not worse than LOS D. The City's General Plan also recognizes a flexible approach and that LOS D may be exceeded at certain intersections during peak season, but that exceedances of the LOS D goals are only acceptable where maximum feasible intersection improvements have been implemented. The General Plan also recognizes that special improvements and management programs and strategies may also be necessary.

The County of Riverside has established a target Level of Service of LOS "C" for all County maintained roads and conventional state highways[4]. As an exception, LOS "D" may be

[1] Policy CIR-1.1 of the City of Indio 2008 Circulation Plan Update.

[2] The following factors are to be considered when determining whether operation at LOS D is reasonable and feasible: (1) Excessive right of way acquisition to attain LOS D; (2) Unreasonable costs to attain LOS D; (3) Impacts to other environmental resources to achieve LOS D, such as biological resources or cultural resources (e.g., historic properties); and (4) Conflicts with other *City of Indio 2008 General Plan Update* policies, such as provisions for alternative transportation (e.g., public transit, pedestrian facilities and/or bicycle routes) or provisions for neighborhood preservation.

[3] City of La Quinta Engineering Bulletin #06-13 – Traffic Study Guidelines.

[4] Policy C.2.1 of the County of Riverside General Plan Circulation Element.

Table III-1 Intersection Delay and Level of Service Ranges – Signalized Intersections

Level of Service	Description	Intersection Delay (seconds per vehicle)
A	Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.	≤ 10
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.	>10 and ≤ 20
C	Good operation. Occasionally drivers may have to wait for more than 60 seconds, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted.	>20 and ≤ 35
D	Fair operation. Cars are sometimes required to wait for more than 60 seconds during short peaks. There is no long-standing traffic queues. This level is typically associated with design practice for peak periods.	>35 and ≤ 55
E	Poor operation. Some long-standing vehicular queues develop on critical approaches to intersections. Delays may be up to several minutes.	>55 and ≤ 80
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 intersections approach lanes; therefore, volumes carried are not predictable. Potential for stop-and-go type traffic flow.	>80

Source: *Highway Capacity Manual*, Special Report 209, Transportation Research Board, Washington, DC, 2000.

Table III-2 Intersection Delay and Level of Service Ranges – Unsignalized Intersections

Level of Service	Unsignalized Intersection Delay (seconds per vehicle)
A	≤ 10
B	>10 and ≤ 15
C	>15 and ≤ 25
D	>25 and ≤ 35
E	>35 and ≤ 50
F	>50

Source: *Highway Capacity Manual*, Special Report 209, Transportation Research Board, Washington, DC, 2000.

allowed in Community Development areas[1], only at intersections of certain street types. These exceptions do not apply to the two intersections identified under County jurisdiction in this study.

The City of Palm Desert has established[2] a target Level of Service of LOS "C". For peak operating periods, LOS "D" is provisionally considered the generally acceptable service level.

The California Department of Transportation (Caltrans) has set the target Level of Service for signalized intersections and ramp terminals[3] as the transition between LOS "C" and LOS "D", "D", which effectively sets the target level of service as (not exceeding) LOS C. However Caltrans acknowledges that this may not always be feasible. If an existing State highway facility is operating at less than the appropriate target LOS, then the Caltrans guidelines state that the existing LOS should be maintained.

The most common performance standard in the study area is therefore LOS D, so this is the standard used for describing traffic conditions in this report for conditions without the project. It should be noted that these performance standards apply to normal day-to-day roadway operating conditions. There are no performance standards for temporary events which may have temporary higher peak traffic levels and for which traffic delays and queues are typically expected for short periods of time. Application of the normal standards is therefore a conservative approach to the analysis.

III.2 Significant Impact Thresholds

The significant impact thresholds used in this study were the same as used in the 2012 Study. To assist in understanding of the impact analysis in this chapter, they are repeated here.

The City of Indio is the lead agency for environmental review of this Project. The significant impact thresholds employed by the City of Indio are therefore used for all intersections in Indio. For intersections in other jurisdictions the intersection analysis is conducted using the significant impact thresholds of the relevant jurisdiction. The significant impact thresholds of each jurisdiction are described below. It should be noted that these thresholds were developed for and are typically applied to normal weekday peak period conditions. They therefore do not address weekend hours (such as the Saturday 2:00 to 3:00 pm hour addressed in this study) and do not address temporary special event conditions. Nevertheless, for purposes of preparing a conservative analysis, these thresholds are applied in this study.

[1] Specific areas of the County where urban and suburban development are deemed appropriate.
[2] Program 1.A of the Goals, Policies and Programs section of the City of Palm Desert General Plan Circulation Element.
[3] California Department of Transportation - Guide for the Preparation of Traffic Impact Studies, 2003.

City of Indio Significance Thresholds

Policy CIR-1.1 of the City of Indio 2008 Circulation Plan Update establishes the performance standard of Level of Service "D" (LOS D), at all intersections during peak hours, except under certain conditions where a peak hour intersection LOS D is not reasonable or feasible, then Level of Service "E" shall be the standard. The following factors shall be considered when determining whether operation at LOS D is reasonable and feasible:

- Excessive right of way acquisition to attain LOS D;
- Unreasonable costs to attain LOS D;
- Impacts to other environmental resources to achieve LOS D, such as biological resources or cultural resources (e.g., historic properties); and
- Conflicts with other *City of Indio 2008 General Plan Update* policies, such as provisions for alternative transportation (e.g., public transit, pedestrian facilities and/or bicycle routes) or provisions for neighborhood preservation.

Beyond the General Plan standards, the City of Indio has not adopted specific thresholds for determining significant impacts for traffic impact studies. For the purposes of this study it was considered that a significant impact would occur (a) if the proposed Project caused the level of service to exceed LOS D, or (b) if the level of service without the Project already exceeded LOS D then if the Project caused the level of service to change from LOS E to LOS F, or (c) if the proposed Project causes it to exceed LOS E where it was determined to be unreasonable or infeasible to maintain LOS D (per the above standards).

City of La Quinta Significance Thresholds

The City of La Quinta Traffic Impact Study Guidelines (City of La Quinta Engineering Bulletin #06-13) state that a potentially significant project specific traffic impact is defined to occur at any signalized intersection if the addition of project trips will result in that intersection either operating at LOS E or F or exceeding the following criteria, if already operating at LOS E or F:

Intersection Operation	*Significance Threshold*
LOS E	An increase in delay of 2 seconds or more on critical movements per lane*
LOS F	An increase in delay of 1 second or more on critical movements per lane*

*Critical movements are the controlling movements when the sums of the maximum volumes per lane for conflicting movements on each roadway are compared. Typically there are two pairs of critical movements (one left with its opposing through movement) for a four legged intersection.

For an unsignalized intersection, a potentially significant impact is defined to occur when, with project traffic included, an intersection has a projected LOS "F" on a side street for two-way stop control or LOS "E" or worse for the intersection at an all-way stop controlled intersection and the addition of project traffic results in an addition of 3 seconds or more of delay for any movement.

However the City's General Plan also identifies that while the City strives to maintain a minimum intersection level of service of not worse than LOS D, it also recognizes a flexible approach and that LOS D may be exceeded at certain intersections during peak season. It further states that exceedances of the LOS D goals are only acceptable where maximum feasible intersection improvements have been implemented, and also recognizes that special improvements and management programs and strategies may also be necessary. (General Plan policies CIR 1.6, 1.7, and 1.8)

County of Riverside Significance Thresholds

Policy C.2.1 of the County of Riverside General Plan Circulation Element, adopted in October 2003, states that the County has established a target Level of Service of LOS "C" for all County maintained roads and conventional state highways and intersections. As an exception, LOS "D" may be allowed in Community Development areas (specific regions of the County where urban and suburban development are deemed appropriate), only at intersections of any combination of the following:

- Secondary Highways
- Major Highways
- Arterials
- Urban Arterials
- Expressways
- Conventional State Highways
- Freeway Ramp Intersections

LOS "E" may be allowed in designated community centers (areas of greater residential and economic densities) to the extent that it would support transit-oriented development and walkable communities. Neither of the two study intersections under County jurisdiction are located in either Community Development area or community centers.

Beyond the General Plan standards, the County of Riverside does not have specific significant impact criteria thresholds for traffic impact studies. For the purposes of this study it was considered that a significant impact would occur if the proposed project caused the level of service to exceed LOS C, or if the level of service without the project already exceeded LOS C then if the project caused the level of service to change from LOS D to LOS E, or from LOS E to LOS F.

City of Palm Desert Significance Thresholds

Program 1.A of the Goals, Policies and Programs section of the City of Palm Desert General Plan Circulation Element, adopted in March 2004, states that the City has established a goal of Level of Service "C" for City roadway and intersection operations. For peak operating periods, LOS "D" is provisionally considered the general acceptable service level. Exceedance of the City's LOS "C" goal is only acceptable where maximum feasible intersection improvements have been implemented.

Beyond the General Plan standards, the City of Palm Desert does not have specific significant impact criteria thresholds for traffic impact studies. For the purposes of this study it was considered that a significant impact would occur if the proposed project caused the level of service to exceed LOS D, or if the level of service without the project already exceeded LOS D then if the project caused the level of service to change from LOS E to LOS F.

Caltrans Significance Thresholds

Per the California Department of Transportation (Caltrans) Guide for the Preparation of Traffic Impact Studies, 2003, Caltrans has set the target Level of Service for freeway segments, signalized intersections and ramp terminals as the transition between LOS "C" and LOS "D". This effectively sets the target level of service at LOS C. However Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than the appropriate target LOS, then the Caltrans guidelines state that the existing LOS should be maintained.

Caltrans has not adopted specific thresholds of significance for determining whether an impact is significant. For the purposes of this study, and in common with most all of the other jurisdictions described above, it was considered that a significant impact would occur if the proposed project caused the level of service to exceed LOS D, or if the level of service without the project already exceeded LOS D then if the project caused the level of service to change from LOS E to LOS F.

III.3 Impact Analysis for 125,000 Capacity Festival

III.3.1 Intersections

Future Conditions With Modified Project – Intersections

The intersection level of service analysis for the Future With Project Conditions is summarized in Table III-3, which shows the calculated vehicle delay and associated level of

service for each of the study intersections for each of the three analysis hours. The table also compares the level of service conditions to the Future Without Project (No Event).

Friday: 3:00 – 4:00 PM

As shown in Table III.3 during the peak hour analyzed, most intersections would continue to operate at similar levels of service with the Modified Project with the vast majority of intersections continuing to operate at LOS D or better. A total of 19 intersections would operate at LOS D or better, compared to 18 intersections in the Future Without Project condition. The number of intersections operating by each level service category would be as follows, including a comparison to the Future Without Project conditions:

Level of Service	*Future Without Project*	*Future With Modified Project*
LOS A	2 intersections	1 intersections
LOS B	3 intersections	4 intersections
LOS C	10 intersections	10 intersections
LOS D	3 intersections	4 intersections
LOS E	1 intersections	0 intersections
LOS F	2 intersections	2 intersections

According to the criteria for significant impacts adopted for this study, the Future With Project conditions would result in no significant impacts in this time period.

Saturday: 2:00 – 3:00 PM

As shown in Table III-3, most intersections would continue to operate at similar levels of service with the Modified Project with the vast majority of intersections continuing to operate at LOS D or better. A total of 18 intersections would operate at LOS D or better, compared to 17 intersections in the Future Without Project condition. The number of intersections operating by each level service category would be as follows, including a comparison to the Future Without Project conditions:

Level of Service	*Future Without Project*	*Future With Modified Project*
LOS A	2 intersections	0 intersections
LOS B	4 intersections	6 intersections
LOS C	9 intersections	8 intersections
LOS D	2 intersections	4 intersections
LOS E	2 intersections	1 intersections
LOS F	2 intersections	2 intersections

According to the criteria for significant impact adopted for this study, the Future With Modified Project conditions would result in no significant impacts in this time period.

Monday: 8:00 – 9:00 AM

As shown in Table III-3, most intersections would continue to operate at similar levels of service with the Modified Project with the vast majority of intersections continuing to operate at LOS D or better. A total of 17 intersections would operate at LOS D or better, compared to 17 intersections in the Future Without Project condition. The number of intersections operating by each level service category would be as follows, including a comparison to the Future Without Project conditions:

Level of Service	*Future Without Project*	*Future With Modified Project*
LOS A	1 intersections	2 intersections
LOS B	8 intersections	7 intersections
LOS C	5 intersections	4 intersections
LOS D	3 intersections	4 intersections
LOS E	1 intersections	2 intersections
LOS F	3 intersections	2 intersections

According to the criteria for significant impact adopted for this study, the Future With Modified Project conditions would result in no significant impacts in this time period.

Table III-3 Future With Project Conditions - 125,000 Capacity Festival - Intersection Level of Service

2/24/2016

No.	Intersection	Jurisdiction	Type of Traffic Control	Friday 3-4 PM						Saturday 2-3 PM					
				Future Without Project Conditions		Future With Project Conditions		Delay Increase (sec/veh)	Significant Impact	Future Without Project Conditions		Future With Project Conditions		Delay Increase (sec/veh)	Significant Impact
				Delay (sec/veh)	LOS	Delay (sec/veh)	LOS			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS		
6	Jefferson St & Indio Blvd	I	Signalized	33.2	C	33.6	C	0.4	No	20.9	C	21.3	C	0.4	No
8	Jefferson St & Ave 48	LQ	Signalized	33.1	C	33.0	C	-0.1	No	32.8	C	33.2	C	0.4	No
9	Jefferson St & Ave 50	LQ	Signalized	35.3	D	35.9	D	0.6	No	34.9	C	35.0	D	0.1	No
10	Jefferson St & Ave 52	LQ	Roundabout	337.9	F	217.1	F	-120.8	No	338.9	F	296.3	F	-42.6	No
11	Jefferson St & Ave 54	LQ	4-Way Stop	15.2	C	14.4	B	-0.8	No	14.5	B	14.3	B	-0.2	No
12	Madison St & Ave 48	I	Signalized	25.7	C	25.9	C	0.2	No	24.8	C	24.7	C	-0.1	No
13	Madison St & Ave 50	I	4-Way Stop	19.5	C	22.4	C	2.9	No	33.1	D	34.6	D	1.5	No
14	Madison St & Ave 52	LQ	4-Way Stop	31.8	D	21.6	C	-10.2	No	25.6	D	22.1	C	-3.5	No
15	Madison St & Ave 54	LQ	4-Way Stop	36.8	E	33.8	D	-3.0	No	42.7	E	42.1	E	-0.6	No
16	Hjorth St & Ave 48	I	Signalized	19.3	B	21.9	C	2.6	No	12.4	B	14.6	B	2.2	No
19	Monroe St & Ave 48	I	Signalized	35.2	D	50.4	D	15.2	No	32.6	C	37.4	D	4.8	No
20	Monroe St & Ave 49	I	Signalized	8.3	A	9.0	A	0.7	No	9.4	A	10.1	B	0.7	No
21	Monroe St & Ave 50	I	Signalized	6.5	A	12.4	B	5.9	No	6.7	A	11.0	B	4.3	No
22	Monroe St & Ave 52	I	4-Way Stop	22.8	C	21.2	C	-1.6	No	58.6	F	59.5	F	0.9	No
23	Monroe St & Ave 54	LQ	4-Way Stop	12.4	B	12.5	B	0.1	No	14.6	B	14.7	B	0.1	No
25	Jackson St & Ave 48	I	Signalized	34.3	C	34.7	C	0.4	No	30.3	C	29.5	C	-0.8	No
26	Jackson St & Ave 50	I	4-Way Stop	78.7	F	130.9	F	52.2	No	46.9	E	29.3	D	-17.6	No
27	Jackson St & Ave 52	CR	4-Way Stop	20.2	C	20.3	C	0.1	No	16.4	C	16.5	C	0.1	No
28	Jackson St & Ave 54	CR	4-Way Stop	13.1	B	13.1	B	0.0	No	17.4	C	17.4	C	0.0	No
33	I-10 EB Ramps & Monroe St	C	Signalized	33.7	C	44.7	D	11.0	No	20.3	C	25.1	C	4.8	No
41	Jefferson St & Ave 49	LQ	Signalized	20.4	C	21.8	C	1.4	No	19.0	B	19.9	B	0.9	No

Note: I - City of Indio; LQ - City of La Quinta; CR - County of Riverside;
PD - City of Palm Desert; C - Caltrans

1. No reasonable/feasible mitigation, so LOS E accepted by City of Indio under temporary event conditions.

Table III-3 Future With Project Conditions - 125,000 Capacity Festival - Intersection Level of Service

2/24/2016

No.	Intersection	Jurisdiction	Type of Traffic Control	Monday 8-9 AM					
				Future Without Project Conditions		Future With Project Conditions		Delay Increase (sec/veh)	Significant Impact
				Delay (sec/veh)	LOS	Delay (sec/veh)	LOS		
6	Jefferson St & Indio Blvd	I	Signalized	28.1	C	51.2	D	23.1	No
8	Jefferson St & Ave 48	LQ	Signalized	52.3	D	54.8	D	2.5	No
9	Jefferson St & Ave 50	LQ	Signalized	27.9	C	29.3	C	1.4	No
10	Jefferson St & Ave 52	LQ	Roundabout	353.8	F	11.6	B	-342.2	No
11	Jefferson St & Ave 54	LQ	4-Way Stop	26.1	D	26.1	D	0.0	No
12	Madison St & Ave 48	I	Signalized	25.4	C	28.7	C	3.3	No
13	Madison St & Ave 50	I	4-Way Stop	82.3	F	266.0	F	183.7	No
14	Madison St & Ave 52	LQ	4-Way Stop	10.2	B	10.5	B	0.3	No
15	Madison St & Ave 54	LQ	4-Way Stop	13.1	B	13.1	B	0.0	No
16	Hjorth St & Ave 48	I	Signalized	12.9	B	12.2	B	-0.7	No
19	Monroe St & Ave 48	I	Signalized	33.5	C	43.1	D	9.6	No
20	Monroe St & Ave 49	I	Signalized	12.4	B	12.3	B	-0.1	No
21	Monroe St & Ave 50	I	Signalized	15.8	B	15.9	B	0.1	No
22	Monroe St & Ave 52	I	4-Way Stop	64.7	F	76.5	F	11.8	No
23	Monroe St & Ave 54	LQ	4-Way Stop	10.4	B	10.4	B	0.0	No
25	Jackson St & Ave 48	I	Signalized	28.1	C	28.1	C	0.0	No
26	Jackson St & Ave 50	I	4-Way Stop	46.6	E	47.3	E	0.7	No
27	Jackson St & Ave 52	CR	4-Way Stop	11.6	B	11.6	B	0.0	No
28	Jackson St & Ave 54	CR	4-Way Stop	9.6	A	9.6	A	0.0	No
33	I-10 EB Ramps & Monroe St	C	Signalized	42.4	D	57.0	E	14.6	No[1]
41	Jefferson St & Ave 49	LQ	Signalized	18.9	B	20.5	C	1.6	No

Note: I - City of Indio; LQ - City of La Quinta; CR - County of Riverside; PD - City of Palm Desert; C - Caltrans

1. No reasonable/feasible mitigation, so LOS E accepted by City of Indio under temporary event conditions.

Intersections Further From the Project Site

The original study analyzed whether intersections further from the Future Festival Site could be impacted from increases in background (non-event) traffic, if residents continue to make trips but use alternate routes to avoid closed streets and/or festival traffic. The original study showed there would be no unmitigated significant impacts at these locations further from the project site and that those intersections would continue to operate at no worse than LOS C and D in all time periods. The analysis in this study has shown that there would be no significant impacts at the intersections studied, including those in the vicinity of the Project site, and at key locations near the I-10 freeway. It is therefore reasonable to conclude that similarly there would be no significant impacts at the intersections further from the project site with the Modified Project.

Traffic Queues

The original study provided a comprehensive analysis of traffic queues. It identified that queues are typically expected at major events, are temporary in nature, and often build-up and disperse quite quickly. The original study identified two categories of people who could be affected by traffic queues. The first category – event patrons - would not be significantly impacted by traffic queues, as queues are expected by patrons as part of accessing and egressing the event. The second category – general traffic and residents on streets where queues occur – could potentially be affected. The threshold used in the original study was if residents would be substantially inconvenienced by traffic queues. The original study concluded that there would be no significant impacts to general traffic because alternative travel routes are available, the event provides advance notice of event traffic and alternative routes, and that the intersection analysis showed adequate level of service conditions at intersections on alternate routes. The analysis also showed that there would be no significant impacts to residential development driveways, with two exceptions - for residents of the La Quinta Polo Estates on Avenue 50 west of Madison Street, and of La Cantera on Avenue 52 between Madison Street and Jefferson Street.

Since the original study, increases in roadway capacity have occurred on Monroe Street between Avenue 49 and Avenue 52, Avenue 52 between Monroe Street and Madison Street, and Madison Street, and further increases in capacity are planned as part of the Modified Project on Avenue 52 west of Madison Street. These improvements have led to substantially reduced traffic queues on most roadways – as confirmed by observations during the 2014 and 2015 festivals.

For the Modified Project, the increase in day parking will be proportionally less than the overall increase in attendance – due to the increased use of the shuttles. The vast majority of the increase in day parking supply will occur off of Avenue 49 at the north end of the site, and shuttle passes relocated from the southwest corner of the site at Madison Street & Avenue 52 to the north-east corner on Monroe Street south of Avenue 49. With these changes, the

Modified Project is not expected to worsen traffic conditions and traffic queues at the two residential driveways noted above.

It is therefore concluded that with the Modified Project, traffic queues will be no greater than in the original study, and in most cases will be less than in the original study, so no additional significant impacts are expected.

III.3.2 Freeways

Existing Traffic Volumes

A check was conducted of existing freeway volumes in the same manner as described for roadway intersection volumes discussed in Chapter II. The most recently available freeway volumes counts from Caltrans (2014) were compared to the forecasts of 2014 volumes from the 2012 Study. The comparison showed that there was a negligible difference (see Appendix B). It was therefore concluded that it was appropriate to extend the forecasts of freeway volumes by three years to 2017 using the growth factors used in the 2012 Study.

Future Traffic Volumes

Future Without Project Traffic Volumes (99,000 Festival, No Festival Expansion)

The Future Without Project traffic volumes represent the Approved Festival as the baseline, plus growth in background traffic to 2017. The 2014 Festival forecasts from the 2012 Study were used as the starting point. Background traffic growths were then estimated by applying the same background growth factors as used in the 2012 Study for a period of three years from 2014 to 2017, and adding to the 2014 Festival forecast from the 2012 Study.

Future With Modified Project Traffic Volumes (Festival Expansion to 125,000 Person Capacity)

Based on the methodology described earlier, the Future With Modified Project traffic volumes projections were obtained by (1) using the 2014 Festival conditions as a base, (2) adding the background growth in traffic on the roadway system between 2014 and 2017, and (3) adding the projected growth in Festival traffic from a 99,000 attendance to a 125,000 capacity event as described above in this chapter, to obtain total future traffic with a 125,000 capacity festival.

Future Conditions With Modified Project – Freeways

Significant Impact Thresholds

As discussed earlier in this chapter, Caltrans has not adopted specific thresholds of significance for determining whether an impact is significant. For the purposes of this study, and consistent with the approach to intersections in most of the other jurisdictions in the study area, it was considered that a significant impact would occur if the proposed project caused the level of service to exceed LOS D, or if the level of service without the project already exceeded LOS D then if the project caused the level of service to change from LOS E to LOS F.

Freeway Segments

Future Traffic Volumes

The Future With Modified Project traffic volumes on the freeway segments, and corresponding D/C ratios, are shown in Table III-4 for each of the three analysis hours. A comparison is also shown to Future Without Project Conditions.

Friday: 3:00 – 4:00 PM

As shown in Table III-4, the Future With Modified Project freeway segment level of service conditions would be very similar to the Future Without Project Conditions. All freeway segments would operate at LOS D or better. The level of service would not exceed the Caltrans level of service target at any location, and there would therefore be no significant freeway segment impacts during the Friday 3:00 to 4:00 pm hour.

Saturday: 2:00 – 3:00 PM

As shown in Table III-4b the Future With Modified Project freeway segment level of service conditions would be very similar to the Future Without Project Conditions. All freeway segments would operate at LOS D or better, with most segments operating at LOS B or LOS C. The level of service would not exceed the Caltrans level of service target at any location, and there would therefore be no significant freeway segment impacts during the Saturday 2:00 to 3:00 pm hour.

Monday: 8:00 - 9:00 AM

As shown in Table III-4c the Future With Modified Project freeway segment level of service conditions would be very similar to the Future Without Project Conditions. All freeway

Table III-4a **Future With Project - 125,000 Capacity -Freeway Segment Level of Service - Friday 3-4 PM** 1/22/2015

No.	Location	DIR	No of Lanes	Capacity (veh/hr)	2017 FWOP Friday 3-4 PM			2017 FWP Friday 3-4 PM				Increase in D/C	Significant Impact?
					Hourly Volume (veh/hr)	Demand/ Capacity	LOS	Project Trips	Hourly Volume (veh/hr)	Demand/ Capacity	LOS		
1	I - 10 west of Washington Street	EB	3 G	6,000	5,112	0.852	D	253	5,365	0.894	D	0.042	No
		WB	3 G	6,000	4,334	0.722	D	129	4,463	0.744	D	0.022	No
2	I - 10 b/w Washington Street and Jefferson Street	EB	3 G	6,000	4,558	0.760	D	233	4,791	0.799	D	0.039	No
		WB	3 G	6,000	3,865	0.644	C	121	3,986	0.664	C	0.020	No
3	I - 10 b/w Jefferson Street and Monroe Street	EB	3 G	6,000	3,732	0.622	C	214	3,946	0.658	C	0.036	No
		WB	3 G	6,000	3,201	0.534	C	159	3,360	0.560	C	0.027	No
4	I - 10 b/w Monroe Street and Jackson Street	EB	3 G	6,000	3,422	0.570	C	0	3,422	0.570	C	0.000	No
		WB	3 G	6,000	2,927	0.488	B	208	3,135	0.523	C	0.035	No
5	I - 10 b/w Jackson Street and Golf Center Pkwy	EB	3 G	6,000	3,220	0.537	C	0	3,220	0.537	C	0.000	No
		WB	3 G	6,000	2,730	0.455	B	4	2,734	0.456	B	0.001	No
6	I - 10 east of Golf Center Pkwy	EB	3 G + 1 A	7,000	2,930	0.419	B	0	2,930	0.419	B	0.000	No
		WB	4 G	8,000	2,477	0.310	B	8	2,485	0.311	B	0.001	No

Notes:
G - General Purpose Lane
A - Auxilliary Lane

Table III-4b Future With Project -125,000 Capacity - Freeway Segment Level of Service - Saturday 2-3 PM 1/22/2016

No.	Location	DIR	No of Lanes	Capacity (veh/hr)	2017 FWOP Saturday 2-3 PM			2017 FWP Saturday 2-3 PM				Increase in D/C	Significant Impact?
					Hourly Volume (veh/hr)	Demand/ Capacity	LOS	Project Trips	Hourly Volume (veh/hr)	Demand/ Capacity	LOS		
1	I - 10 west of Washington Street	EB	3 G	6,000	5,068	0.845	D	209	5,277	0.880	D	0.035	No
		WB	3 G	6,000	3,477	0.580	C	114	3,591	0.599	C	0.019	No
2	I - 10 b/w Washington Street and Jefferson Street	EB	3 G	6,000	4,519	0.753	D	193	4,712	0.785	D	0.032	No
		WB	3 G	6,000	3,101	0.517	C	106	3,207	0.535	C	0.018	No
3	I - 10 b/w Jefferson Street and Monroe Street	EB	3 G	6,000	3,700	0.617	C	164	3,864	0.644	C	0.027	No
		WB	3 G	6,000	2,568	0.428	B	119	2,687	0.448	B	0.020	No
4	I - 10 b/w Monroe Street and Jackson Street	EB	3 G	6,000	3,393	0.566	C	0	3,393	0.566	C	0.000	No
		WB	3 G	6,000	2,348	0.391	B	128	2,476	0.413	B	0.021	No
5	I - 10 b/w Jackson Street and Golf Center Pkwy	EB	3 G	6,000	3,192	0.532	C	0	3,192	0.532	C	0.000	No
		WB	3 G	6,000	2,190	0.365	B	3	2,193	0.366	B	0.001	No
6	I - 10 east of Golf Center Pkwy	EB	3 G + 1 A	7,000	2,905	0.415	B	0	2,905	0.415	B	0.000	No
		WB	4 G	8,000	1,987	0.248	A	6	1,993	0.249	A	0.001	No

Notes:
G - General Purpose Lane
A - Auxilliary Lane

Table III-4c **Future With Project - 125,000 Capacity - Freeway Segment Level of Service - Monday 8-9AM** 1/22/2016

No.	Location	DIR	No of Lanes	Capacity (veh/hr)	2017 FWOP Monday 8-9 AM			2017 FWP Monday 8-9 AM				Increase in D/C	Significant Impact?
					Hourly Volume (veh/hr)	Demand/ Capacity	LOS	Project Trips	Hourly Volume (veh/hr)	Demand/ Capacity	LOS		
1	I - 10 west of Washington Street	EB	3 G	6,000	4,458	0.743	D	0	4,458	0.743	D	0.000	No
		WB	3 G	6,000	3,428	0.571	C	676	4,104	0.684	C	0.113	No
2	I - 10 b/w Washington Street and Jefferson Street	EB	3 G	6,000	3,976	0.663	C	0	3,976	0.663	C	0.000	No
		WB	3 G	6,000	3,057	0.510	C	556	3,613	0.602	C	0.093	No
3	I - 10 b/w Jefferson Street and Monroe Street	EB	3 G	6,000	3,255	0.543	C	0	3,255	0.543	C	0.000	No
		WB	3 G	6,000	2,532	0.422	B	-63	2,469	0.412	B	-0.011	No
4	I - 10 b/w Monroe Street and Jackson Street	EB	3 G	6,000	2,985	0.498	B	39	3,024	0.504	C	0.007	No
		WB	3 G	6,000	2,315	0.386	B	0	2,315	0.386	B	0.000	No
5	I - 10 b/w Jackson Street and Golf Center Pkwy	EB	3 G	6,000	2,808	0.468	B	39	2,847	0.475	B	0.006	No
		WB	3 G	6,000	2,159	0.360	B	0	2,159	0.360	B	0.000	No
6	I - 10 east of Golf Center Pkwy	EB	3 G + 1 A	7,000	2,555	0.365	B	78	2,633	0.376	B	0.011	No
		WB	4 G	8,000	1,959	0.245	A	0	1,959	0.245	A	0.000	No

Notes:
G - General Purpose Lane
A - Auxilliary Lane

segments would operate at LOS D or better, with most segments operating at LOS B or LOS C. The level of service would not exceed Caltrans level of service targets at any location. There would therefore be no significant freeway segment impacts during the Monday 8:00 to 9:00 am hour.

Freeway Off-Ramps

Significant Impact Thresholds

Caltrans has not adopted significant impact thresholds for off-ramps. The criteria used in this study was that a significant impact would occur to a freeway off-ramp if the queue length (95^{th} percentile) exceeds the total storage length available on the off-ramp and results in queues backing into mainline travel lanes. Ramp conditions were also evaluated using a second level of analysis to determine if the queue length (95^{th} percentile) exceeded the storage length of any individual ramp lane. However, if the lane storage queue exceeded the capacity but the overall ramp queue did not exceed the overall ramp capacity and would not back into the mainline travel lanes then it was not considered to be a significant impact.

Future Traffic Volumes

The off-ramp analysis for the Future With Modified Project Conditions is summarized in Table III-5, which shows projected traffic volumes and vehicle queue lengths for both Future With Project and Future Without Project Conditions.

Friday: 3:00 – 4:00 PM

During this hour festival traffic would be travelling inbound to the festival. Differences in traffic volumes between the Future Without Project and Future With Modified Project conditions would be due to both added festival traffic and changes in background non-event traffic. As shown in Table III-5, off-ramp traffic queue lengths would not exceed the overall ramp storage lengths at any of the off-ramp locations. There would therefore be no significant impacts due to the Modified Project.

Saturday: 2:00 – 3:00 PM

During this hour festival traffic would also be travelling inbound to the festival. Differences in traffic volumes between the Future Without Project and Future With Modified Project conditions would be due to both added festival traffic and changes in background non-event traffic. As shown in Table III-5, off-ramp queue lengths would not exceed the overall ramp storage lengths at any of the off-ramp locations. There would therefore be no significant impacts due to the Project.

Table III-5 **125,000 Capacity Festival - Future With Project Conditions - Freeway Off-Ramp Analysis** 2/25/16

Off - Ramp # and Location	Type of Traffic Control	Movement	# of Lanes	Storage Length (feet)	Friday 3-4 PM						Saturday 2-3 PM					
					Future Without Project Conditions			Future With Project Conditions			Future Without Project Conditions			Future With Project Conditions		
					Ramp Volume (veh/hr)	Queue Length (feet)	Exceed Storage Length	Ramp Volume (veh/hr)	Queue Length (feet)	Exceed Storage Length	Ramp Volume (veh/hr)	Queue Length (feet)	Exceed Storage Length	Ramp Volume (veh/hr)	Queue Length (feet)	Exceed Storage Length
From West on I-10																
1 Washington Street EB Off ramp	Signalized	EB LT/TH	2	1,065	263	176	No	263	176	No	248	154	No	248	154	No
		EB RT	2	1,025	843	858	No	863	880	No	790	638	No	806	638	No
		RAMP TOTAL	4	2,090	1,106	1,034	No	1,126	1,056	No	1,038	792	No	1,054	792	No
2 Jefferson Street/Indio Boulevard EB Off ramp[1]	All-Way Stop	EB LT	1	705	151	22	No	151	22	No	152	22	No	152	22	No
		EB TH [2]	1	705	902	0	No	921	0	No	756	0	No	785	0	No
		RAMP TOTAL	2	1,410	1,053	22	No	1,072	22	No	908	22	No	937	22	No
3 Monroe Street EB Off ramp	Signalized	EB LT/TH	1	870	104	594	No	104	770	No	113	418	No	113	550	No
		EB RT	1	870	585	396	No	799	550	No	523	308	No	687	396	No
		RAMP TOTAL	2	1,740	689	990	No	903	1,320	No	636	726	No	800	946	No
From East on I-10																
5 Golf Center Pkwy WB Off ramp	Signalized	WB LT/TH	1	355	98	110	No	102	110	No	55	66	No	58	66	No
		WB RT	1	355	106	132	No	106	132	No	108	110	No	108	110	No
		RAMP TOTAL	2	710	204	242	No	208	242	No	163	176	No	166	176	No
6 Jackson Street WB Off ramp	Signalized	WB LT/TH	1	740	68	88	No	72	88	No	44	44	No	47	66	No
		WB RT	1	740	290	0	No	290	0	No	301	0	No	301	0	No
		RAMP TOTAL	2	1,480	358	88	No	362	88	No	345	44	No	348	66	No

Note:

1. The eastbound off-ramp is currently under construction as part of the I-10 / Jefferson Street Interchange Improvement Project. When completed, this facility will replace the previously existing two-lane off-ramp with stop sign with a much longer off-ramp consisting of two left-turn lanes and two right-turn lanes at a signalized intersection with Jefferson Street. Other significant improvements, including extending Jefferson Street over I-10 to connect to Varner Street, will also be completed. While the interchange improvements are expected to be completed by 2017, no traffic volume forecasts for the new interchange configuration in 2017 were available, so the analysis was conducted for the ramp configuration before reconstruction of the interchange began (as also studied in the previous traffic study). This is considered to be a conservative analysis as the improvements are expected to substantially increase both the storage capacity of the off-ramp and the operational efficiency of the off-ramp intersection, thereby also considerably improving the level of service at the ramp intersection.

2. Under the existing lane configuration before the completion of the reconstruction in 2017, a traffic control officer directed traffic at intersection during the festivals and eastbound through movement was not stopped.

Table III-5 125,000 Capacity Festival - Future With Project Conditions - Freeway Off-Ramp Analysis

Off - Ramp # and Location	Type of Traffic Control	Movement	# of Lanes	Storage Length (feet)	Monday 8-9 AM					
					Future Without Project Conditions			Future With Project Conditions		
					Ramp Volume (veh/hr)	Queue Length (feet)	Exceed Storage Length	Ramp Volume (veh/hr)	Queue Length (feet)	Exceed Storage Length
From West on I-10										
1 Washington Street EB Off ramp	Signalized	EB LT/TH	2	1,065	202	154	No	202	154	No
		EB RT	2	1,025	499	484	No	499	462	No
		RAMP TOTAL	4	2,090	701	638	No	701	616	No
2 Jefferson Street/Indio Boulevard EB Off ramp[1]	All-Way Stop	EB LT	1	705	89	22	No	89	22	No
		EB TH[2]	1	705	585	0	No	585	0	No
		RAMP TOTAL	2	1,410	674	22	No	674	22	No
3 Monroe Street EB Off ramp	Signalized	EB LT/TH	1	870	77	484	No	77	484	No
		EB RT	1	870	316	308	No	316	308	No
		RAMP TOTAL	2	1,740	393	792	No	393	792	No
From East on I-10										
5 Golf Center Pkwy WB Off ramp	Signalized	WB LT/TH	1	355	67	88	No	67	88	No
		WB RT	1	355	46	44	No	46	66	No
		RAMP TOTAL	2	710	113	132	No	113	154	No
6 Jackson Street WB Off ramp	Signalized	WB LT/TH	1	740	36	44	No	36	44	No
		WB RT	1	740	142	0	No	142	0	No
		RAMP TOTAL	2	1,480	178	44	No	178	44	No

Monday: 8:00 – 9:00 AM

During this hour festival traffic would be travelling outbound from the festival during camping load out so would not use freeway off-ramps. Differences in traffic volumes between the Future Without Project and Future With Modified Project conditions would be due primarily to changes in background non-event traffic. As shown in Table III-5, off-ramp queue lengths would not exceed the ramp storage lengths at any of the off-ramp locations. There would therefore be no significant impacts due to the Modified Project.

Freeway On-Ramps

Future Traffic Volumes

The on-ramp analysis for the Future With Project Conditions is summarized in Table III-6, which shows projected traffic volumes and ramp capacities for both Future With Project and Future Without Project Conditions.

Significant Impact Thresholds

Caltrans has not adopted significant impact threshold for on-ramps. For purposes of this study, as in the Original Study, the criterion for determining a significant impact is if the traffic volumes in the Future With Project condition exceeded the capacity of the on-ramp.

Friday: 3:00 – 4:00 PM

As shown in Table III-6, on ramp traffic volumes in the Future With Project condition would not exceed the ramp capacities at any of the on-ramp locations, and there would be no significant impacts due to the Project.

Saturday: 2:00 – 3:00 PM

As shown in Table III-6, on ramp traffic volumes in the Future With Project condition would not exceed the ramp capacities at any of the on-ramp locations, and there would be no significant impacts due to the Project.

Monday: 8:00 – 9:00 AM

As shown in Table III-6, on ramp traffic volumes in the Future With Project condition would not exceed the ramp capacities at any of the on-ramp locations, and there would be no significant impacts due to the Project.

Table III-6 Future With Project - 125,000 Capacity - Freeway On-Ramp Analysis

1/22/2016

On - Ramp	# of Lanes[1]	Ramp Capacity[2]	Friday 3-4 PM					Saturday 2-3 PM					Monday 8-9 AM				
			Future Without Project Conditions		Future With Project Conditions			Future Without Project Conditions		Future With Project Conditions			Future Without Project Conditions		Future With Project Conditions		
			Ramp Volume	Exceed Capacity	Project Added Vol	Ramp Volume	Exceed Capacity	Ramp Volume	Exceed Capacity	Project Added Vol	Ramp Volume	Exceed Capacity	Ramp Volume	Exceed Capacity	Project Added Vol	Ramp Volume	Exceed Capacity
To I-10 West																	
Berkey Drive WB On ramp	1	900	720	No	2	722	No	716	No	2	718	No	819	No	36	855	No
Washington Street WB On ramp	1	900	608	No	6	614	No	492	No	6	498	No	803	No	84	887	No
Jefferson Street WB On ramp	1	900	110	No	-38	72	No	96	No	-5	91	No	171	No	619	790	No
Monroe Street WB On ramp	1	900	512	No	-49	463	No	380	No	-9	371	No	890	No	-63	827	No
Jackson Street WB On ramp	1	900	508	No	208	716	No	458	No	128	586	No	489	No	0	489	No
To I-10 East																	
Golf Center Pkwy EB On ramp	1	900	165	No	0	165	No	121	No	0	121	No	187	No	39	226	No
Jackson Street EB On ramp	1	900	283	No	0	283	No	253	No	0	253	No	153	No	0	153	No
Monroe Street EB On ramp	1	900	250	No	0	250	No	185	No	0	185	No	224	No	39	263	No
Jefferson Street EB On ramp	1	900	145	No	0	145	No	96	No	0	96	No	130	No	0	130	No

Notes:

1. Number of lanes on ramp.

2. Capacity based on 900 veh/hr/ln.

III.4 Impact Analysis for 85,000 Capacity Festival

III.4.1 Intersections

Future Conditions With Modified Project – Intersections

The intersection level of service analysis for the Future With Modified Project Conditions is summarized in Table III-7, which shows the calculated vehicle delay and associated level of service for each of the study intersections for each of the three analysis hours. The table also compares the level of service conditions to the Future Without Project (No Event).

Friday: 3:00 – 4:00 PM

As shown in Table III.7 during the peak hour analyzed, most intersections would continue to operate at similar levels of service with the Modified Project with the vast majority of intersections continuing to operate at LOS D or better. A total of 16 intersections would operate at LOS D or better, compared to 16 intersections in the Future Without Project condition. The number of intersections operating by each level service category would be as follows, including a comparison to the Future Without Project conditions:

Level of Service	*Future Without Project*	*Future With Modified Project*
LOS A	1 intersections	1 intersections
LOS B	6 intersections	6 intersections
LOS C	5 intersections	4 intersections
LOS D	4 intersections	5 intersections
LOS E	2 intersections	2 intersections
LOS F	3 intersections	3 intersections

According to the criteria for significant impacts adopted for this study, the Future With Modified Project conditions would result in no significant impacts in this time period.

Saturday: 2:00 – 3:00 PM

As shown in Table III-7, most intersections would continue to operate at similar levels of service with the Modified Project with 20 intersections expected to operate at LOS D or better in both the Future With and Future Without Project conditions. The number of intersections operating by each level service category would be as follows, including a comparison to the Future Without Project conditions:

Level of Service	*Future Without Project*	*Future With Modified Project*
LOS A	2 intersections	1 intersections
LOS B	4 intersections	5 intersections
LOS C	11 intersections	12 intersections
LOS D	3 intersections	2 intersections
LOS E	0 intersections	0 intersections
LOS F	1intersections	1 intersections

According to the criteria for significant impact adopted for this study, the Future With Modified Project conditions would result in no significant impacts in this time period.

Monday: 8:00 – 9:00 AM

As shown in Table III-7, most intersections would continue to operate at similar levels of service with the Modified Project with the vast majority of intersections continuing to operate at LOS D or better. A total of 20 intersections would operate at LOS D or better, compared to 18 intersections in the Future Without Project condition. The number of intersections operating by each level service category would be as follows, including a comparison to the Future Without Project conditions:

Level of Service	*Future Without Project*	*Future With Modified Project*
LOS A	2 intersections	3 intersections
LOS B	6 intersections	6 intersections
LOS C	7 intersections	8 intersections
LOS D	3 intersections	3 intersections
LOS E	2 intersections	1 intersections
LOS F	1 intersections	0 intersections

According to the criteria for significant impact adopted for this study, the Future With Modified Project conditions would result in no significant impacts in this time period.

Table III-7 85,000 Capacity Festival - Future With Project Conditions - Intersection Level of Service

2/24/2016

No.	Intersection	Jurisdiction	Type of Traffic Control	Friday 3-4 PM						Saturday 2-3 PM					
				Future Without Project Conditions		Future With Project Conditions		Delay Increase (sec/veh)	Significant Impact	Future Without Project Conditions		Future With Project Conditions		Delay Increase (sec/veh)	Significant Impact
				Delay (sec/veh)	LOS	Delay (sec/veh)	LOS			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS		
6	Jefferson St & Indio Blvd	I	Signalized	44.0	D	46.2	D	2.2	No	21.2	C	20.6	C	-0.6	No
8	Jefferson St & Ave 48	LQ	Signalized	36.7	D	37.1	D	0.4	No	31.5	C	31.6	C	0.1	No
9	Jefferson St & Ave 50	LQ	Signalized	34.1	C	34.3	C	0.2	No	31.9	C	32.4	C	0.5	No
10	Jefferson St & Ave 52	LQ	Roundabout	541.2	F	541.2	F	0.0	No	177.5	F	109.5	F	-68.0	No
11	Jefferson St & Ave 54	LQ	4-Way Stop	14.7	B	14.6	B	-0.1	No	28.6	D	24.2	C	-4.4	No
12	Madison St & Ave 48	I	Signalized	25.7	C	25.7	C	0.0	No	26.0	C	26.1	C	0.1	No
13	Madison St & Ave 50	I	4-Way Stop	13.8	B	14.3	B	0.5	No	15.9	C	16.1	C	0.2	No
14	Madison St & Ave 52	LQ	4-Way Stop	39.9	E	35.1	E	-4.8	No	18.0	C	15.4	C	-2.6	No
15	Madison St & Ave 54	LQ	4-Way Stop	32.9	D	32.9	D	0.0	No	15.7	C	15.2	C	-0.5	No
16	Hjorth St & Ave 48	I	Signalized	12.6	B	13.3	B	0.7	No	12.8	B	13.5	B	0.7	No
19	Monroe St & Ave 48	I	Signalized	46.8	D	51.9	D	5.1	No	30.8	C	31.5	C	0.7	No
20	Monroe St & Ave 49	I	Signalized	6.6	A	7.0	A	0.4	No	9.0	A	10.2	B	1.2	No
21	Monroe St & Ave 50	I	Signalized	11.8	B	12.3	B	0.5	No	13.3	B	14.6	B	1.3	No
22	Monroe St & Ave 52	I	4-Way Stop	100.9	F	100.9	F	0.0	No	16.2	C	15.2	C	-1.0	No
23	Monroe St & Ave 54	LQ	4-Way Stop	12.6	B	12.6	B	0.0	No	10.1	B	10.1	B	0.0	No
25	Jackson St & Ave 48	I	Signalized	33.6	C	36.7	D	3.1	No	31.1	C	33.5	C	2.4	No
26	Jackson St & Ave 50	I	4-Way Stop	77.7	F	105.0	F	27.3	No	28.8	D	29.8	D	1.0	No
27	Jackson St & Ave 52	CR	4-Way Stop	23.2	C	23.2	C	0.0	No	13.4	B	13.4	B	0.0	No
28	Jackson St & Ave 54	CR	4-Way Stop	13.8	B	13.8	B	0.0	No	9.9	A	9.9	A	0.0	No
33	I-10 EB Ramps & Monroe St	C	Signalized	70.2	E	73.0	E	2.8	No	48.8	D	43.1	D	-5.7	No
41	Jefferson St & Ave 49	LQ	Signalized	22.3	C	23.4	C	1.1	No	21.2	C	23.0	C	1.8	No

Note: I - City of Indio; LQ - City of La Quinta; CR - County of Riverside;
PD - City of Palm Desert; C - Caltrans

Table III-7 85,000 Capacity Festival - Future With Project Conditions - Intersection Level of Service

2/24/2016

No.	Intersection	Jurisdiction	Type of Traffic Control	Monday 8-9 AM					
				Future Without Project Conditions		Future With Project Conditions		Delay Increase (sec/veh)	Significant Impact
				Delay (sec/veh)	LOS	Delay (sec/veh)	LOS		
6	Jefferson St & Indio Blvd	I	Signalized	30.5	C	39.3	D	8.8	No
8	Jefferson St & Ave 48	LQ	Signalized	31.8	C	33.1	C	1.3	No
9	Jefferson St & Ave 50	LQ	Signalized	41.9	D	54.1	D	12.2	No
10	Jefferson St & Ave 52	LQ	Roundabout	40.1	D	8.6	A	-31.5	No
11	Jefferson St & Ave 54	LQ	4-Way Stop	15.8	C	15.8	C	0.0	No
12	Madison St & Ave 48	I	Signalized	24.5	C	26.1	C	1.6	No
13	Madison St & Ave 50	I	4-Way Stop	42.0	E	22.7	C	-19.3	No
14	Madison St & Ave 52	LQ	4-Way Stop	35.7	E	19.1	C	-16.6	No
15	Madison St & Ave 54	LQ	4-Way Stop	11.7	B	11.7	B	0.0	No
16	Hjorth St & Ave 48	I	Signalized	15.5	B	15.2	B	-0.3	No
19	Monroe St & Ave 48	I	Signalized	29.1	C	30.4	C	1.3	No
20	Monroe St & Ave 49	I	Signalized	8.5	A	8.5	A	0.0	No
21	Monroe St & Ave 50	I	Signalized	17.1	B	17.2	B	0.1	No
22	Monroe St & Ave 52	I	4-Way Stop	10.7	B	10.9	B	0.2	No
23	Monroe St & Ave 54	LQ	4-Way Stop	9.5	A	9.5	A	0.0	No
25	Jackson St & Ave 48	I	Signalized	28.1	C	28.1	C	0.0	No
26	Jackson St & Ave 50	I	4-Way Stop	49.4	E	49.5	E	0.1	No
27	Jackson St & Ave 52	CR	4-Way Stop	12.1	B	12.1	B	0.0	No
28	Jackson St & Ave 54	CR	4-Way Stop	10.2	B	10.2	B	0.0	No
33	I-10 EB Ramps & Monroe St	C	Signalized	43.4	D	48.6	D	5.2	No
41	Jefferson St & Ave 49	LQ	Signalized	24.0	C	23.9	C	-0.1	No

Note: I - City of Indio; LQ - City of La Quinta; CR - County of Riverside; PD - City of Palm Desert; C - Caltrans

III.4.2 Freeways

Future Conditions With Modified Project – Freeways

Freeway Segments

Future Traffic Volumes

The Future With Modified Project traffic volumes on the freeway segments, and corresponding D/C ratios, are shown in Table III-8 for each of the three analysis hours. A comparison is also shown to Future Without Project Conditions.

Friday: 3:00 – 4:00 PM

As shown in Table III-8a, the Future With Modified Project freeway segment level of service conditions would be very similar to the Future Without Project Conditions. All freeway segments would operate at LOS D or better, with most segments operating at LOS B or LOS C. The level of service would not exceed the Caltrans level of service target at any location, and therefore there would be no significant impacts during the Friday 3:00 to 4:00 pm hour.

Saturday: 2:00 – 3:00 PM

As shown in Table III-8b the Future With Modified Project freeway segment level of service conditions would be very similar to the Future Without Project Conditions. All freeway segments would operate at LOS D or better, with most segments operating at LOS B or LOS C. The level of service would not exceed the Caltrans level of service target at any location, and there would therefore be no significant freeway segment impacts during the Saturday 2:00 to 3:00 pm hour.

Monday: 8:00 – 9:00 AM

As shown in Table III-8c the Future With Modified Project freeway segment level of service conditions would be very similar to the Future Without Project Conditions. All freeway segments would operate at LOS D or better, with most segments operating at LOS B or LOS C. The level of service would not exceed Caltrans level of service targets at any location. There would therefore be no significant freeway segment impacts during the Monday 8:00 to 9:00 am hour.

Table III-8a **85,000 Capacity Festival - Future With Project - Freeway Segment Level of Service - Friday 3-4 PM** 11/24/2015

No.	Location	DIR	No of Lanes	Capacity (veh/hr)	2017 FWOP Friday 3-4 PM			2017 FWP Friday 3-4 PM				Increase in D/C	Significant Impact?
					Hourly Volume (veh/hr)	Demand/ Capacity	LOS	Project Trips	Hourly Volume (veh/hr)	Demand/ Capacity	LOS		
1	I - 10 west of Washington Street	EB	3 G	6,000	5,112	0.852	D	144	5,256	0.876	D	0.024	No
		WB	3 G	6,000	4,334	0.722	D	91	4,425	0.738	D	0.015	No
2	I - 10 b/w Washington Street and Jefferson Street	EB	3 G	6,000	4,558	0.760	D	136	4,694	0.782	D	0.023	No
		WB	3 G	6,000	3,865	0.644	C	88	3,953	0.659	C	0.015	No
3	I - 10 b/w Jefferson Street and Monroe Street	EB	3 G	6,000	3,732	0.622	C	112	3,844	0.641	C	0.019	No
		WB	3 G	6,000	3,201	0.534	C	89	3,290	0.548	C	0.015	No
4	I - 10 b/w Monroe Street and Jackson Street	EB	3 G	6,000	3,422	0.570	C	90	3,512	0.585	C	0.015	No
		WB	3 G	6,000	2,927	0.488	B	90	3,017	0.503	C	0.015	No
5	I - 10 b/w Jackson Street and Golf Center Pkwy	EB	3 G	6,000	3,220	0.537	C	0	3,220	0.537	C	0.000	No
		WB	3 G	6,000	2,730	0.455	B	2	2,732	0.455	B	0.000	No
6	I - 10 east of Golf Center Pkwy	EB	3 G + 1 A	7,000	2,930	0.419	B	0	2,930	0.419	B	0.000	No
		WB	4 G	8,000	2,477	0.310	B	4	2,481	0.310	B	0.001	No

Notes:
G - General Purpose Lane
A - Auxilliary Lane

Table III-8b **85,000 Capacity Festival - Future With Project - Freeway Segment Level of Service - Saturday 2-3 PM** 11/24/2015

No.	Location	DIR	No of Lanes	Capacity (veh/hr)	2017 FWOP Saturday 2-3 PM			2017 FWP Saturday 2-3 PM				Increase in D/C	Significant Impact?
					Hourly Volume (veh/hr)	Demand/ Capacity	LOS	Project Trips	Hourly Volume (veh/hr)	Demand/ Capacity	LOS		
1	I - 10 west of Washington Street	EB	3 G	6,000	5,068	0.845	D	122	5,190	0.865	D	0.020	No
		WB	3 G	6,000	3,477	0.580	C	84	3,561	0.594	C	0.014	No
2	I - 10 b/w Washington Street and Jefferson Street	EB	3 G	6,000	4,519	0.753	D	116	4,635	0.773	D	0.019	No
		WB	3 G	6,000	3,101	0.517	C	81	3,182	0.530	C	0.014	No
3	I - 10 b/w Jefferson Street and Monroe Street	EB	3 G	6,000	3,700	0.617	C	123	3,823	0.637	C	0.021	No
		WB	3 G	6,000	2,568	0.428	B	105	2,673	0.446	B	0.018	No
4	I - 10 b/w Monroe Street and Jackson Street	EB	3 G	6,000	3,393	0.566	C	129	3,522	0.587	C	0.022	No
		WB	3 G	6,000	2,348	0.391	B	134	2,482	0.414	B	0.022	No
5	I - 10 b/w Jackson Street and Golf Center Pkwy	EB	3 G	6,000	3,192	0.532	C	0	3,192	0.532	C	0.000	No
		WB	3 G	6,000	2,190	0.365	B	1	2,191	0.365	B	0.000	No
6	I - 10 east of Golf Center Pkwy	EB	3 G + 1 A	7,000	2,905	0.415	B	0	2,905	0.415	B	0.000	No
		WB	4 G	8,000	1,987	0.248	A	2	1,989	0.249	A	0.000	No

Notes:
G - General Purpose Lane
A - Auxilliary Lane

Table III-8c **85,000 Capacity Festival - Future With Project - Freeway Segment Level of Service - Monday 8-9AM** 11/24/2015

No.	Location	DIR	No of Lanes	Capacity (veh/hr)	2017 FWOP Monday 8-9 AM			2017 FWP Monday 8-9 AM				Increase in D/C	Significant Impact?
					Hourly Volume (veh/hr)	Demand/ Capacity	LOS	Project Trips	Hourly Volume (veh/hr)	Demand/ Capacity	LOS		
1	I - 10 west of Washington Street	EB	3 G	6,000	4,458	0.743	D	0	4,458	0.743	D	0.000	No
		WB	3 G	6,000	3,428	0.571	C	278	3,706	0.618	C	0.046	No
2	I - 10 b/w Washington Street and Jefferson Street	EB	3 G	6,000	3,976	0.663	C	0	3,976	0.663	C	0.000	No
		WB	3 G	6,000	3,057	0.510	C	229	3,286	0.548	C	0.038	No
3	I - 10 b/w Jefferson Street and Monroe Street	EB	3 G	6,000	3,255	0.543	C	0	3,255	0.543	C	0.000	No
		WB	3 G	6,000	2,532	0.422	B	33	2,565	0.428	B	0.006	No
4	I - 10 b/w Monroe Street and Jackson Street	EB	3 G	6,000	2,985	0.498	B	16	3,002	0.500	B	0.003	No
		WB	3 G	6,000	2,315	0.386	B	0	2,315	0.386	B	0.000	No
5	I - 10 b/w Jackson Street and Golf Center Pkwy	EB	3 G	6,000	2,808	0.468	B	16	2,824	0.471	B	0.003	No
		WB	3 G	6,000	2,159	0.360	B	0	2,159	0.360	B	0.000	No
6	I - 10 east of Golf Center Pkwy	EB	3 G + 1 A	7,000	2,555	0.365	B	32	2,587	0.370	B	0.005	No
		WB	4 G	8,000	1,959	0.245	A	0	1,959	0.245	A	0.000	No

Notes:
G - General Purpose Lane
A - Auxilliary Lane

Freeway Off-Ramps

Future Traffic Volumes

The off-ramp analysis for the Future With Modified Project Conditions is summarized in Table III-9, which shows projected traffic volumes and vehicle queue lengths for both Future With Modified Project and Future Without Project Conditions.

Friday: 3:00 – 4:00 PM

During this hour festival traffic would be travelling inbound to the festival. Differences in traffic volumes between the Future Without Project and Future With Modified Project conditions would be due to both added festival traffic and changes in background non-event traffic. As shown in Table III-9, off-ramp traffic queue lengths would not exceed the overall ramp storage lengths at any of the off-ramp locations. There would therefore be no significant impacts due to the Modified Project.

Saturday: 2:00 – 3:00 PM

During this hour festival traffic would also be travelling inbound to the festival. Differences in traffic volumes between the Future Without Project and Future With Modified Project conditions would be due to both added festival traffic and changes in background non-event traffic. As shown in Table III-9, off-ramp queue lengths would not exceed the overall ramp storage lengths at any of the off-ramp locations. There would therefore be no significant impacts due to the Modified Project.

Monday: 8:00 - 9:00 AM

During this hour festival traffic would be travelling outbound from the festival during camping load out so would not use freeway off-ramps. Differences in traffic volumes between the Future Without Project and Future With Modified Project conditions would be due primarily to changes in background non-event traffic. As shown in Table III-9, off-ramp queue lengths would not exceed the ramp storage lengths at any of the off-ramp locations. There would therefore be no significant impacts due to the Modified Project.

Freeway On-Ramps

Future Traffic Volumes

The on-ramp analysis for the Future With Project Conditions is summarized in Table III-10, which shows projected traffic volumes and ramp capacities for both Future With Project and Future Without Project Conditions.

Significant Impact Thresholds

Caltrans has not adopted significant impact threshold for on-ramps. For purposes of this study, as in the Original Study, the criterion for determining a significant impact is if the traffic volumes in the Future With Project condition exceeded the capacity of the on-ramp.

Friday: 3:00 – 4:00 PM

As shown in Table III-10, on ramp traffic volumes in the Future With Project condition would not exceed the ramp capacities at any of the on-ramp locations, and there would be no significant impacts due to the Project.

Saturday: 2:00 – 3:00 PM

As shown in Table III-10, on ramp traffic volumes in the Future With Project condition would not exceed the ramp capacities at any of the on-ramp locations, and would be no significant impacts due to the Project.

Monday: 8:00 – 9:00 AM

As shown in Table III-10, on ramp traffic volumes in the Future With Project condition would not exceed the ramp capacities at any of the on-ramp locations, and would be no significant impacts due to the Project.

Table III-9 **85,000 Capacity Festival - Future With Project Conditions - Freeway Off-Ramp Analysis** 2/25/16

Off - Ramp # and Location	Type of Traffic Control	Movement	# of Lanes	Storage Length (feet)	Friday 3-4 PM						Saturday 2-3 PM					
					Future Without Project Conditions			Future With Project Conditions			Future Without Project Conditions			Future With Project Conditions		
					Ramp Volume (veh/hr)	Queue Length (feet)	Exceed Storage Length	Ramp Volume (veh/hr)	Queue Length (feet)	Exceed Storage Length	Ramp Volume (veh/hr)	Queue Length (feet)	Exceed Storage Length	Ramp Volume (veh/hr)	Queue Length (feet)	Exceed Storage Length
From West on I-10																
1 Washington Street EB Off ramp	Signalized	EB LT/TH	2	1,065	300	198	No	300	198	No	203	132	No	203	132	No
		EB RT	2	1,025	928	968	No	936	968	No	624	506	No	630	506	No
		RAMP TOTAL	4	2,090	1,228	1,166	No	1,236	1,166	No	827	638	No	833	638	No
2 Jefferson Street/Indio Boulevard EB Off ramp[1]	All-Way Stop	EB LT	1	705	176	22	No	176	22	No	139	22	No	139	22	No
		EB TH[2]	1	705	1,091	0	No	1,117	0	No	764	0	No	769	0	No
		RAMP TOTAL	2	1,410	1,267	22	No	1,293	22	No	903	22	No	908	22	No
3 Monroe Street EB Off ramp	Signalized	EB LT/TH	1	870	90	66	No	90	66	No	101	88	No	101	66	No
		EB RT	1	870	770	1,606	Yes	792	1,672	Yes	575	814	No	584	792	No
		RAMP TOTAL	2	1,740	860	1,672	No	882	1,738	No	676	902	No	685	858	No
From East on I-10																
5 Golf Center Pkwy WB Off ramp	Signalized	WB LT/TH	1	355	115	132	No	117	132	No	79	88	No	80	88	No
		WB RT	1	355	113	110	No	113	110	No	99	110	No	99	110	No
		RAMP TOTAL	2	710	228	242	No	230	242	No	178	198	No	179	198	No
6 Jackson Street WB Off ramp	Signalized	WB LT/TH	1	740	56	66	No	58	66	No	53	66	No	54	66	No
		WB RT	1	740	276	0	No	276	0	No	291	0	No	291	0	No
		RAMP TOTAL	2	1,480	332	66	No	334	66	No	344	66	No	345	66	No

Note:

1. The eastbound off-ramp is currently under construction as part of the I-10 / Jefferson Street Interchange Improvement Project. When completed, this facility will replace the previously existing two-lane off-ramp with stop sign with a much longer off-ramp consisting of two left-turn lanes and two right-turn lanes at a signalized intersection with Jefferson Street. Other significant improvements, including extending Jefferson Street over I-10 to connect to Varner Street, will also be completed. While the interchange improvements are expected to be completed by 2017, no traffic volume forecasts for the new interchange configuration in 2017 were available, so the analysis was conducted for the ramp configuration before reconstruction of the interchange began (as also studied in the previous traffic study). This is considered to be a conservative analysis as the improvements are expected to substantially increase both the storage capacity of the off-ramp and the operational efficiency of the off-ramp intersection, thereby also considerably improving the level of service at the ramp intersection.

2. Under the existing lane configuration before the completion of the reconstruction in 2017, a traffic control officer directed traffic at intersection during the festivals and eastbound through movement was not stopped.

Table III-9 **85,000 Capacity Festival - Future With Project Conditions - Freeway Off-Ramp Analysis**

Off - Ramp # and Location	Type of Traffic Control	Movement	# of Lanes	Storage Length (feet)	Monday 8-9 AM					
					Future Without Project Conditions			Future With Project Conditions		
					Ramp Volume (veh/hr)	Queue Length (feet)	Exceed Storage Length	Ramp Volume (veh/hr)	Queue Length (feet)	Exceed Storage Length
From West on I-10										
1 Washington Street EB Off ramp	Signalized	EB LT/TH	2	1,065	218	154	No	218	154	No
		EB RT	2	1,025	527	462	No	527	484	No
		RAMP TOTAL	4	2,090	745	616	No	745	638	No
2 Jefferson Street/Indio Boulevard EB Off ramp[1]	All-Way Stop	EB LT	1	705	99	22	No	99	22	No
		EB TH[2]	1	705	543	0	No	543	0	No
		RAMP TOTAL	2	1,410	642	22	No	642	22	No
3 Monroe Street EB Off ramp	Signalized	EB LT/TH	1	870	60	66	No	60	66	No
		EB RT	1	870	382	594	No	383	616	No
		RAMP TOTAL	2	1,740	442	660	No	443	682	No
From East on I-10										
5 Golf Center Pkwy WB Off ramp	Signalized	WB LT/TH	1	355	83	110	No	83	110	No
		WB RT	1	355	39	44	No	39	44	No
		RAMP TOTAL	2	710	122	154	No	122	154	No
6 Jackson Street WB Off ramp	Signalized	WB LT/TH	1	740	41	66	No	41	66	No
		WB RT	1	740	134	0	No	134	0	No
		RAMP TOTAL	2	1,480	175	66	No	175	66	No

Table III-10 85,000 Capacity Festival Future With Project Conditions - Freeway On-Ramp Analysis 12/16/2015

On - Ramp	# of Lanes[1]	Ramp Capacity[2]	Friday 3-4 PM					Saturday 2-3 PM					Monday 8-9 AM				
			Future Without Project Conditions		Future With Project Conditions			Future Without Project Conditions		Future With Project Conditions			Future Without Project Conditions		Future With Project Conditions		
			Ramp Volume (veh/hr)	Exceed Capacity	Project Added Vol	Ramp Volume (veh/hr)	Exceed Capacity	Ramp Volume (veh/hr)	Exceed Capacity	Project Added Vol	Ramp Volume (veh/hr)	Exceed Capacity	Ramp Volume (veh/hr)	Exceed Capacity	Project Added Vol	Ramp Volume (veh/hr)	Exceed Capacity
To I-10 West																	
1 Washington Street WB On ramp	1	900	554	No	3	557	No	535	No	3	538	No	746	No	49	795	No
2 Jefferson Street WB On ramp	1	900	150	No	-1	149	No	88	No	-24	64	No	169	No	196	365	No
3 Monroe Street WB On ramp	1	900	498	No	-1	497	No	302	No	-29	273	No	818	No	33	851	No
4 Jackson Street WB On ramp	1	900	488	No	90	578	No	404	No	134	538	No	490	No	0	490	No
To I-10 East																	
5 Golf Center Pkwy EB On ramp	1	900	148	No	0	148	No	104	No	0	104	No	124	No	16	140	No
6 Jackson Street EB On ramp	1	900	245	No	0	245	No	255	No	0	255	No	167	No	0	167	No
7 Monroe Street EB On ramp	1	900	250	No	0	250	No	169	No	0	169	No	192	No	16	208	No
8 Jefferson Street EB On ramp	1	900	167	No	0	167	No	101	No	0	101	No	105	No	0	105	No

Notes:

1. Number of lanes on ramp.
2. Capacity based on 900 veh/hr/ln.

IV Project Mitigation

The preceding chapter identified that the Modified Project, including changes to the Transportation Management Plan as identified in Chapter II of this report, would not cause any new significant traffic impacts for either the Higher Attendance or Lower Attendance Festivals. No new mitigation measures would therefore be necessary.

Appendix A

Existing Roadway Traffic Volume Comparisons

Table A-1. Existing Traffic Count Screenline Comparison -Friday 11/24/2015

	2015 Projected Friday No-Event Vols [1] (3 - 4 PM)			2015 Friday No-Event Counts (3 - 4 PM)			Difference (2015 Counts - 2015 Project Vols)			Difference %		
	EB/NB	WB/SB	Total	EB/NB	WB/SB	Total	EB/NB	WB/SB	Total	EB/NB	WB/SB	Total
East Screenline	1,364	1,379	2,743	1,186	1,142	2,328	-178	-237	-415	-13%	-17%	-15%
West Screenline	2,666	2,081	4,747	2,664	2,113	4,777	-2	32	30	0%	2%	1%
Avg N-S Screenlines	4,030	3,460	7,490	3,850	3,255	7,105	-180	-205	-385	-4%	-6%	-5%
Center Screenline	2,488	2,474	4,962	2,756	2,728	5,484	268	254	522	11%	10%	11%
South Screenline	819	945	1,764	922	922	1,844	103	-23	80	13%	-2%	5%
Avg E-W Screen Lines	3,307	3,419	6,726	3,678	3,650	7,328	371	231	602	11%	7%	9%
Total	7,337	6,879	14,216	7,528	6,905	14,433	191	26	217	3%	0%	2%

1. Projected to 2015 based on 2012 traffic counts and intersection annual growth factors from 2012 Study

Table A-2. Existing Traffic Count Screenline Comparison - Saturday 11/24/2015

	2015 Projected Satuday No-Event Vols (2 - 3 PM) [1]			2015 Saturday No-Event Counts (2 - 3 PM)			Difference (2015 Counts - 2015 Project Vols)			Difference %		
	EB/NB	WB/SB	Total	EB/NB	WB/SB	Total	EB/NB	WB/SB	Total	EB/NB	WB/SB	Total
East Screenline	1,120	1,114	2,234	883	1,040	1,923	-237	-74	-311	-21%	-7%	-14%
West Screenline	2,001	1,847	3,848	1,920	1,762	3,682	-81	-85	-166	-4%	-5%	-4%
Avg N-S Screenlines	3,121	2,961	6,082	2,803	2,802	5,605	-318	-159	-477	-10%	-5%	-8%
Center Screenline	1,937	2,057	3,994	1,887	1,894	3,781	-50	-163	-213	-3%	-8%	-5%
South Screenline	678	731	1,409	582	629	1,211	-96	-102	-198	-14%	-14%	-14%
Avg E-W Screen Lines	2,615	2,788	5,403	2,469	2,523	4,992	-146	-265	-411	-6%	-10%	-8%
Total	5,736	5,749	11,485	5,272	5,325	10,597	-464	-424	-888	-8%	-7%	-8%

1. Projected to 2015 based on 2012 traffic counts and intersection annual growth factors from 2012 Study

Table A-3. Existing Traffic Count Screenline Comparison -Monday 11/24/2015

	2015 Projected Monday No-Event Vols (8 - 9 AM) [1]			2015 Monday No-Event Counts (8 - 9 AM)			Difference (2015 Counts - 2015 Project Vols)			Difference %		
	EB/NB	WB/SB	Total	EB/NB	WB/SB	Total	EB/NB	WB/SB	Total	EB/NB	WB/SB	Total
East Screenline	583	704	1,287	688	876	1,564	105	172	277	18%	24%	22%
West Screenline	1,161	1,383	2,544	1,198	1,639	2,837	37	256	293	3%	19%	12%
Avg N-S Screenlines	1,744	2,087	3,831	1,886	2,515	4,401	142	428	570	8%	21%	15%
Center Screenline	1,789	1,391	3,180	1,904	1,596	3,500	115	205	320	6%	15%	10%
South Screenline	666	625	1,291	668	599	1,267	2	-26	-24	0%	-4%	-2%
Avg E-W Screen Line	2,455	2,016	4,471	2,572	2,195	4,767	117	179	296	5%	9%	7%
Total	4,199	4,103	8,302	4,458	4,710	9,168	259	607	866	6%	15%	10%

1. Projected to 2015 based on 2012 traffic counts and intersection annual growth factors from 2012 Study

Appendix B

Existing Freeway Traffic Volume Comparisons

Table B-1. Existing Freeway Traffic Volume Comparison (2014 Projection vs. 2014 Caltrans AADT) 11/24/2015

	2014 Projected Friday Volumes			2014 Friday Caltrans AADT Volumes			Difference			Difference %		
	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
W/O Washington	4,685	3,953	8,638	4,747	4,013	8,760	62	60	122	1%	2%	1%
Btw Wash & Jeff	4,186	3,532	7,718	4,208	3,558	7,766	22	26	48	1%	1%	1%
Btw Jeff & Mon	3,449	2,889	6,338	3,425	2,896	6,321	-24	7	-17	-1%	0%	0%
Btw Mon & Jack	3,136	2,631	5,767	3,132	2,647	5,779	-4	16	12	0%	1%	0%
Btw Jack & Golf	2,896	2,444	5,340	2,887	2,441	5,328	-9	-3	-12	0%	0%	0%
E/O Golf	2,670	2,257	4,927	2,642	2,234	4,876	-28	-23	-51	-1%	-1%	-1%
Total	21,022	17,706	38,728	21,041	17,789	38,830	19	83	102	0%	0%	0%

	2014 Projected Saturday Volumes			2014 Saturday Caltrans AADT Volumes			Difference			Difference %		
	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
W/O Washington	4,644	3,171	7,815	4,706	3,219	7,925	62	48	110	1%	2%	1%
BTW Wash & Jeff	4,150	2,833	6,983	4,172	2,854	7,026	22	21	43	1%	1%	1%
Btw Jeff & Mon	3,420	2,317	5,737	3,396	2,323	5,719	-24	6	-18	-1%	0%	0%
Btw Mon & Jack	3,109	2,111	5,220	3,105	2,124	5,229	-4	13	9	0%	1%	0%
Btw Jack & Golf	2,871	1,960	4,831	2,862	1,958	4,820	-9	-2	-11	0%	0%	0%
e/o Golf	2,647	1,811	4,458	2,620	1,792	4,412	-27	-19	-46	-1%	-1%	-1%
Total	20,841	14,203	35,044	20,861	14,270	35,131	20	67	87	0%	0%	0%

	2014 Projected Monday Volumes			2014 Monday Caltrans AADT Volumes			Difference			Difference %		
	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
W/O Washington	4,085	3,127	7,212	4,140	3,174	7,314	55	47	102	1%	2%	1%
BTW Wash & Jeff	3,650	2,794	6,444	3,670	2,814	6,484	20	20	40	1%	1%	1%
Btw Jeff & Mon	3,008	2,285	5,293	2,987	2,291	5,278	-21	6	-15	-1%	0%	0%
Btw Mon & Jack	2,735	2,081	4,816	2,731	2,094	4,825	-4	13	9	0%	1%	0%
Btw Jack & Golf	2,526	1,933	4,459	2,518	1,931	4,449	-8	-2	-10	0%	0%	0%
e/o Golf	2,329	1,786	4,115	2,305	1,767	4,072	-24	-19	-43	-1%	-1%	-1%
Total	18,333	14,006	32,339	18,351	14,071	32,422	18	65	83	0%	0%	0%