

TRAFFIC ENGINEERING STUDY REVIEW of the TIS for the Sacramento Music Hall and Performing Arts Center Project

INTRODUCTION

PRISM Engineering reviewed the Transportation Impact Study for the proposed Sacramento Music Hall and Performing Arts Center (prepared by Fehr & Peers), the comments made on the Mitigated Negative Declaration (MND), a letter from the City pertaining to the study.

In my findings detailed in this report, I concluded that the traffic study did not adequately address the full true impacts that would take place with the development of the Sacramento Music Hall and Performing Arts Center at the proposed location. Based on a thorough review of the report, I was able to come to the conclusion that the project will create safety issues especially with cars mixed with pedestrian traffic, at night with inadequate lighting and a lack of installed MUTCD compliant traffic control installed to protect pedestrians crossing roads. There are no crosswalks striped. No traffic control to let pedestrians cross. No signal installed at say, Ramona at Cucamonga to give pedestrians their right of way to make street crossing safe. A signal may very well be warranted given the nature of the special event traffic that is taking place and where extremely long lines of traffic would be taking place. The UBER traffic alone is expected to queue from the project site to the US 50 freeway after the show. Arrival of patrons will result in more queues and lines, something that was NOT addressed in the TIS report. As a result, the project would be a direct environmental impact to safety that must be addressed in a formal EIR. This report details the engineering judgments I made to come to these conclusions.

CREDENTIALS

Grant P. Johnson, TE, is a registered professional Traffic Engineer in the State of California since 1987 or for about 36 years now, and has expertise in the types of work that comprise what was contained in the Fehr & Peers TIS for this project. He has authored several hundreds of traffic studies and completed just as many detailed technical analyses. He is qualified to review traffic studies prepared by other transportation professionals and has done so in official capacities in many jurisdictions where he has served as the "On-call Traffic Engineer." These positions contracted with government agencies are responsible for providing traffic engineering services for cities and counties, including reviewing and correcting traffic studies of all kinds in a quasi-governmental capacity. He is an expert in California's Manual of Uniform Traffic Control Devices (CA MUTCD) and how it applies to proper and safe traffic engineering design. He has reviewed in expert witness capacity, traffic control plans (for construction and special events), has prepared signal design plans, developed construction traffic plans, keenly understands traffic safety in all aspects (as outlined by the Federal Highway Association (FHWA), the American Association of Transportation Officials (AASHTO) Greenbook for safe traffic design, and the Caltrans Highway Design Manual (CA HDM)). He understands multi-modal transportation planning including bus transit, subways, and high speed rail having years of experience in mainland China studying and planning on the largest transit systems and multimodal hubs, as well as being Chief Site Engineer on new High Speed Rail (HSR) construction management. He has been more recently been retained as an Expert

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Witness Traffic Engineer in California, Washington, and Utah on high profile accident cases, opining on omissions which led / contributed to the accidents, as well as what safety factors were ignored or caused accidents, as well as defending government agencies on a proper installation of traffic control and roadway design.

OVERVIEW OF PARKING LOCATIONS IN TIS

One of the more confusing aspects of the TIS was how difficult it was understand and review the feasibility of remote parking for what the report stated that the capacity of each location would be, and to know just what the remote parking situation or layout actually was, especially the 3300 Power Inn Rd. location. The lot at the Light Rail station near US 50 on Power Inn Rd. would have 75 spaces available, but no definition of which part of the lot in which there are a total of about 360 spaces. How will it be known that 75 spaces will be available, and will it be cordoned off? How could there be a limit of 75 spaces at this location? What are the logistics of operation there and how will customers know where the large 45 seat shuttle bus will be, etc?

The lot on 3300 Power Inn Rd. to the south is also uncertain as to how the circulation will take place. The lot has no parking striped, and it has about the same ratio of pavement needed as the Light Rail lot (see below) where approximately 41,000 sq ft of pavement is needed to stripe spaces and provide for aisle ways and turn around at the end of the aisles. It is uncertain if this is possible given the odd shape of the pavement lot with an old industrial building in the mix, to stripe spaces. Without striping, it is certain that most people will not park tightly and significantly less vehicles will be able to park there. Also, due to there being a fairly narrow driveway and fence access gate off of Cucamonga Ave. about 300 feet west of Power Inn Rd., this also complicates the efficiency of the design of any parking in this space (also shown below). Where will primary access be? Off of Power Inn Road or Cucamonga Ave.? If Cucamonga Ave. is jammed with long lines of traffic exiting or entering the venue, will vehicles even be able to get in and out of this lot if there are no gaps in traffic? Customers would be stuck in this lot with no exit unless they are sent to Power Inn Rd., and there is a median in the way preventing going north where most will want go (see picture of this location below and its uncertain constraints for access and circulation).

There are many questions about these ideas for remote parking, but they are far from solved or even being a viable or feasible option at this time. Too many unknowns and significant circulation constraints, and especially with the idea of a 45 seat large bus serving as a shuttle to pickup and drop off at both locations, I cannot conceive of who much space would be required to get that large bus into the lot, have any turn radius in the lot design to make the very wide turns such a large vehicle would require to navigate through the lot, and if not navigating through the lot (which would require losing possible half the spaces to a much wider aisle that would wipe out much of the parking potential. Could a bus even make the turn into the lot from Cucamonga Ave. in the first place? If not entering the lot (so that Cucamonga Ave. traffic can move), then the bus would have to wait on Cucamonga with pedestrians crossing a busy street, and

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where would the bus park? Would it block traffic while 45 passengers load and cross a busy street there with no painted mid-block cross walk? There are numerous unanswered questions pertaining to all aspects of the access, the circulation, the parking of large buses, and the boarding and unboarding locations without blocking traffic on Cucamonga Ave.



REVIEW

TASK 1. CHECK REPORT ASSUMPTIONS FOR ACCURACY OR PROBABILITY RELATING TO:

1. *Walking, biking, driving, and taking transit*
2. *Remote parking usage probability. Will patrons drive directly to the site first, and then be redirected to go park at a remote parking lot far away only to wait for a shuttle?*

Walking, biking, driving, and taking transit assumptions

The assumptions of mode split shown in the TIS for pedestrians and cyclists do not seem realistic at all because of the industrial and commercial businesses that surround the area of the venue, and because there are not nearby homes within about 2 miles of the venue. Will people walk well over 4 miles in the dark at night? Possibly 6 miles total? There are so many industrial uses all up and down Power Inn Rd., and even railroad tracks separating these industrial areas from residential areas to the west. Access from homes to the west of the venue is severely constrained by a railroad corridor with few crossings, and therefore makes the trip car centric instead, not ideal for walking or biking to and from a home a minimum of about 2 miles in the dark late at night. The study assumed 2% of the patrons would walk or bike, and this seems highly unrealistic because 2% of 2,219 patrons is 45 people assumed to be walking or riding a bike several miles in the dark.

Remote parking usage probability. Will patrons drive directly to the site first, and then be redirected to go park at a remote parking lot far away only to wait for a shuttle, a full size bus that has 45 seats ?

How long would the 45 seat shuttle bus have to wait to board 45 people, that may not all be there yet? Would the bus move with only 10 passengers, or would it wait until its full? It is conceivable that the bus would have to wait 5 to 10 minutes to get as many people to board as possible to make the bus trip more efficient on moving the maximum number of people with the fewest number of trips (a factor that does not benefit the patron). It is likely that this option is unattractive to the patron who could possibly avoid these kinds of significant delays, as well as security risks to their private vehicle. It is reasonable to assume that most people will drive directly into the venue parking lot instead to check that out first. If they get in, they have succeeded to save time and get inside to sit down sooner, and they will have higher confidence with the security situation of their vehicle for the four (4) hour time period it will be sitting in a well-lighted parking lot with a high presence of people.

It is my conclusion that the assumptions made for how people will choose to park have not been well thought out, and mere assumptions have been made, optimistically high for remote parking use, and that this would result in a higher break down of traffic flows, confusing traffic jams and parking lot circulation issues typical of a busy mall parking lot where drivers circulate looking for parking spaces that are not

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there. This equates to delays and drivers driving even more carelessly thinking that they are going to miss the show, not get a good seat, etc. and they might be in a hurry in an unsafe roadway environment.

TASK 2. TRIP GENERATION.

Does the calculated vehicle totals comport with what the ITE Trip Generation Manual says a musical venue will generate? If not, how much of a difference is there in the report? In this section the following items are checked:

1. Check "Table 3 – Project Vehicle Trip Generation" in report for reliability in assumptions made, and probability of occurring. Especially take note of assumptions in the "Notes" section below the table and provide professional commentary.
2. Check Figure 7 for accuracy and determine what assumptions of UBER, Bus, or Shuttle are built into this figure. Determine the probability of HOW patrons would learn to use remote parking depicted in the numbers shown in this figure.
 - *Will security protect vehicles in these remote locations?*
 - *Will people prefer to park nearly a mile away and wait/depend on shuttles when there is ample parking right at the site?*
 - *Is there a chance that most will drive to the venue as a first preference, creating a traffic jam there on Ramona Avenue?*
 - *Are the trip distribution assumptions in this figure based on a best case but unrealistic scenario where all patrons know where to go?*
 - *Who will direct traffic in a confusing arrival situation pertaining to parking?*

CHECK "TABLE 3 – PROJECT VEHICLE TRIP GENERATION"

In this section we check the report for reliability in trip generation assumptions made, and the probability of it occurring. We examined the assumptions in the "Notes" section below the table and provided commentary. Table 3 from the TIS is shown below for reference.

Many assumptions shown in the "Notes" section at the bottom of Table 3 are highly subjective and debatable. The first is the 65% arrival factor in peak hour assumption, that in an entertainment venue, that 35% of the patrons that drive would either come very early (outside of the hour time window of "peak hour") or an insignificant few stragglers come late. The result of this assumption is to lower the vehicle traffic in the peak hour analyses by an alarmingly high 35%. This level of reduction rivals and exceeds the sometimes controversial "pass-by" traffic reductions made in some traffic studies to account for shopping traffic that is already on the road and say, stops to shop at a store on the way home.

But it doesn't stop there, the equations in the Notes section of Table 3 also further discount the number of regular cars on the road (private vehicles) by an additional 25% to account for the highly optimistic

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assumption that there will be a 25% mode split (people using UBER, Taxis, Buses, Light Rail, Walking or biking) which is too high based on the fact that there is no proof that this level of mode split efficiency is possible or has some precedent. It doesn't. In fact the typical mode split at the San Diego Padres baseball game for instance was only 5%, not 25%. The higher mode split happens in cities like San Francisco at a Giants game where this special event achieved a 34% transit mode split, and this with an extremely high venue attendance (38,000) and a highly developed transit bus and BART and light rail system in place throughout the city. It is not reasonable to assume that this will happen on Ramona Ave., etc.

Table 3 – Project Vehicle Trip Generation During Pre-Event Peak Hour					
Trip Generator	Description	Attendees Transported During Pre-Event Peak Hour	Vehicle Trips Generated ⁵		
			Inbound	Outbound	Total
Private Vehicles	Park at Site	606 ¹	263	0	263
Private Vehicles	Park at Remote Lots or On-Street	476 ²	207	0	207
Uber/Lyft/Taxi	Dropped Off at Site	311 ³	135	135	270
Shuttle Buses	4 round trips	173 ⁴	4	4	8
Total Project Vehicle Trip Generation ⁶			601	131	732
Project Site Vehicle Trip Generation ⁷			402	139	541
<p>Notes:</p> <p>1 Calculated as 2,219 persons x 75% mode split x 65% peak hour arrival x 56% of all parking.</p> <p>2 Calculated as 2,219 persons x 75% mode split x 65% peak hour arrival x 44% of all parking.</p> <p>3 Calculated as 2,219 persons x 20% mode split x 70% peak hour arrival.</p> <p>4 2,219 persons x (9% "park and shuttle" + 3% "LRT and shuttle" mode split) x 65% peak hour arrival = 173 shuttle riders. At 45 seats per bus, four bus round trips are required.</p> <p>5 Average vehicle occupancy is 2.3 event attendees for private vehicles and Uber/Lyft/Taxi.</p> <p>6 These are vehicle trips that enter/exit the overall study area.</p> <p>7 These are vehicle trips that enter/exit the project site on Ramona Avenue.</p> <p>Of those spaces dedicated for event attendees, 408 (55%) would be located at the project site. The remainder would consist of on-street parking (162 spaces, 22%), a nearby off-street lot (100 spaces, 13%) and an off-street remote lots (75 spaces, 10%).</p> <p>Source: Fehr & Peers, 2022.</p>					

Source: F&P TIS, page 20

Making the assumption that 35% of 2,219 people (777 people!) which includes those that will come by UBER, etc., are going to come early and say, eat at the local restaurant, is not even possible to do at the proposed 8,000 sq ft restaurant which can accommodate only a fraction of that amount of 777 people (6 times the restaurant capacity), is incorrect. The TIS says that the restaurant can only seat 60 people¹ inside and 70 outside for a total of 130 people only, much less (1/6) than 777 people that are assumed to come early (the 35% discounted factor shown in Table 3 for all calculations). This assumption vastly

¹ See page 5 of TIS

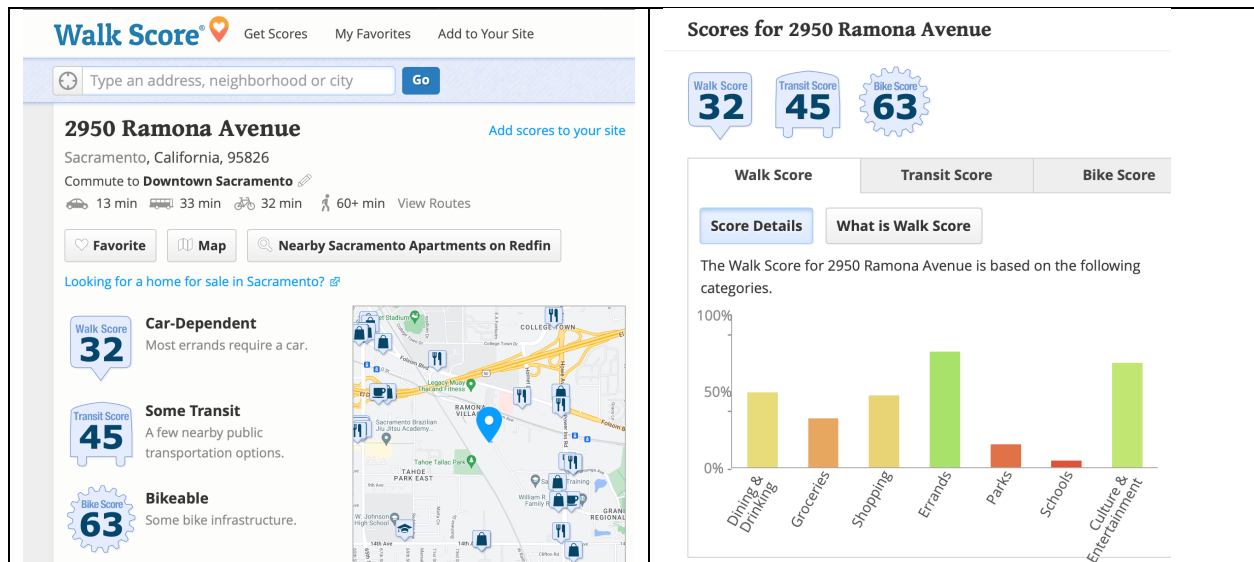
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reduced the project’s real traffic impacts, and if it were true, would mean that the project venue parking lot would nearly fill up even before the show started (777 people, approximately 2.3 per car, is 338 cars, or getting close to the capacity of the 440 spaces on site well before the show even starts).

My conclusion is that the 35% reduction assumptions shown in Table 3 are therefore extremely optimistic and unrealistic, based on typical mode split results measured in the real world at entertainment venues, especially in industrial areas where there is no residential density (no high-rise or skyscraper dwelling units), and no ubiquitous transit in place (light rail or bus routes, let alone subways or BART, etc.).

Walkability Scores are not good for the area surrounding the proposed venue.

Ramona Ave. is not a desirable place to walk, transit access is poor, and although the biking score is higher, it is still ranked as undesirable with missing “Some bike infrastructure”

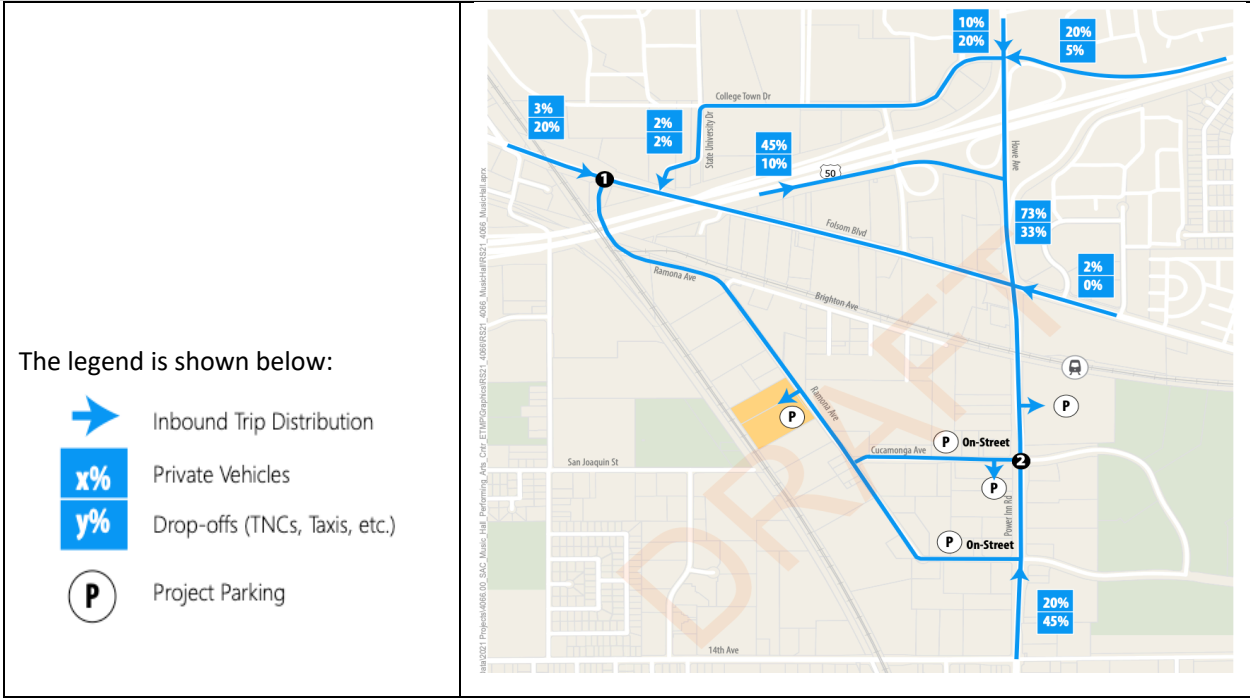


CHECK FIGURE 7 FOR ACCURACY AND DETERMINE ASSUMPTIONS

Figure 7 is shown here for convenience. The source is page 22 of the TIS for this project.

This figure shows the assumed trip distribution pattern assumed for this project. The upper number in the blue boxes represents the cars of patrons and the lower number represents UBER / Taxi type uses.

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What assumptions of UBER, Bus, or Shuttle are built into this figure. Determine the probability of HOW patrons would learn to use remote parking depicted in the numbers shown in this figure using the following questions:

The figure does not show the specific shuttle component. The report reads that there would be only ONE bus and that it would make 4 round trips to move people parked in remote lots. In fact there are issues as to how effective a large shuttle bus would be unless there are several shuttles working simultaneously (the wait times would be very high, especially if you have to wait two or three buses which could take 30-45 minutes to do), and even so, security issues and unknowns remain with the remote parked vehicles themselves. There is also the issue of “advance notice” so that patrons could know which lot had spaces available to try and park there. Would parking spaces be available? How would they know in advance if the project site’s more preferred parking lot is full or not, that they might drive all the way in and park there instead? Why would anyone choose a remote lot with the possibility that the main lot next to the building has spaces available? Do they need to drive all the way there only to be turned away? Who would inform the patrons which lot to go to instead for parking?

The parking information system needed to make this work is not addressed in the report and would create an impact of unnecessary traffic circulation on local streets, creating more dangerous conflicts with

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walking pedestrians also going the venue. Would patrons then choose to park on the street (possibly illegally on Ramona Ave.) instead?

The parking communication information system needs were not addressed in the report but left to the imagination of how this might or might not work. Random parking options will lead to confusion and numerous additional “wandering” trips will be made where patrons are looking randomly for an available parking space but have to potentially check multiple locations. They will be making U-Turns, slowing traffic, stopping to look, going in and out of a parking lot only to not find a space etc. This is a non-streamlined solution for parking that will have vehicles traveling extra distance to solve their parking challenge that is sure to occur, causing considerable congestion.

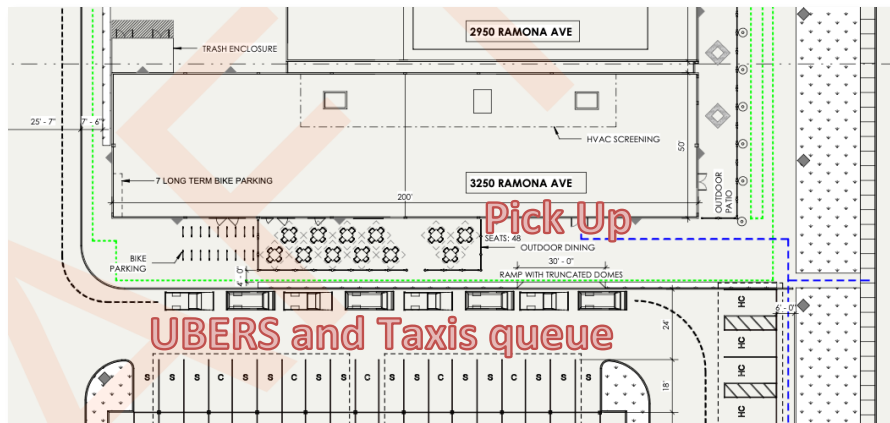
When the venue show is over (after 3.25 hours), there will be another set of traffic jam situations, especially with the UBER / Taxi component of assumptions for the project. For example, 20% was assumed for this option, and with a 2.3 person / UBER occupancy assumption, and a “UBER / Taxi vehicle queue” capacity of 30 vehicles from the street (Ramona St) to the pickup location on site (south side of building) that can only accommodate 2 vehicles at a time, this means that there would be loading times, while all other UBER vehicles wait. If loading time takes a full minute for people to find and get into their car, then this is a 15 minute time period for 30 cars. However, 30 cars would only be picking up 69 people in a best case scenario of a 15 minute window on site (assuming 2.3 passengers per UBER²). Since 20% was assumed for UBER / Taxi use in the traffic study, that is 20% of 2,219 patrons, which calculates to be 444 people that will be waiting for their UBER when the show is over! This is 193 UBER / Taxi cars that adds up to nearly 7 times the on-site space planned for the UBER / Taxi queue. How will patrons know where their UBER / Taxi is in the very long queue that extends nearly a mile into the streets? What if their UBER is still on Ramona Ave. or Cucamonga or even still on Power Inn Rd. queued in the huge and long line that will be approximately 163 cars each taking up approximately 35 feet of distance each in a stop and go pattern (20’ for the car and 15’ for the bumper to bumper queue) and adding up to a total queue length of $163 \times 35' = 5,705$ feet (or over a MILE long cumulative line total of UBERS mostly coming from the US 50 freeway) on the streets of Ramona, Cucamonga and Power Inn? Discounting this queue for the 20% that were assumed (in Figure 7) to come from Power Inn Rd from the south, and the 3% that were assumed to come from Folsom Blvd. west that would turn onto Ramona (see Fig 7), this means that the line of UBERS stacked up on Ramona and extending east on Cucamonga and then north on Power Inn Rd. all the way up to the US 50 freeway would be a constant line of UBERS and Taxis 4,400 feet long from the project site to the US 50 freeway! This is nearly a mile of cars that would have to line up, travel at stop and go speeds like a massive school traffic arrival in a single lane of traffic, and this would create a traffic jam and a safety hazard to pedestrians and frustrated drivers that may need to cross this line because they parked

² This assumption is actually very high considering that an Uber on average carries only 1.75-2.0 passengers per hour. For every 100 passenger requests in an hour UBER must have approximately 50-57 drivers in operation during that hour (see Cook, Diamond, Hall, List, & Oyer, 2018; Henao, 2019).

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on the street and cannot get out of their parking spot due to the lines which will take nearly two hours to completely clear the UBER queue at the rate that the venue site can handle (163 cars loading two at a time, 1.0 to 1.5 minutes for each two cars).

How long would this queue take to clear through the on-site queue line? It would take 15 minutes x 8 times the queue would have to clear, or about 2 full hours of logistical time to pass before every UBER got to pick up their passenger from the site ! This is the best case, and the plan for traffic flow was not well planned or it was omitted, the logistics of how long it would take for a huge incoming queue to actually clear until every last UBER / Taxi riding customer was able to get into their car.



The onsite UBER / Taxi queue is only large enough to store 30 vehicles parked or moving at only 5 feet apart, which is optimistic (and not realistic since there will be pedestrians walking between vehicles, which would require more than 5 feet of space). This unacceptable long duration alone is evidence that the mode split assumptions are unreasonable, as no patron is going to wait one to two hours for an UBER which will, in turn, increase the likelihood that patrons will drive to the venue instead, or walk long distances to find and get a more timely UBER ride, adding to the overall unplanned impacts elsewhere.

Will security protect vehicles in these remote locations?

Again, the TIS for the project reports that patrons will be using use two offsite parking lots located at the Power Inn Rd. Light Rail station, and at 3300 Power Inn Rd. at the southwest corner of Power Inn Rd. and Cucamonga Ave. which is mixed with an abandoned industrial building on the same lot. Lighting on the lot is non-existent. These areas are not well lit nor are there any security eyes on the street in the evening.

The report did not address these issues, which is a real issues to car owners who are subject to vehicle break-ins at most locations, but especially when their vehicle would sit unguarded for several hours in the

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dark on a street with nobody watching cars during the show (lasting 3 hours and 15 minutes, plus transportation time the customer would be away from their car for about 4 hours or more in unattended and presumably dark lots).

It is unlikely that the remote parking lot idea is one that patrons will prefer to use. This makes the venue parking lot look inadequate since there are only about 50% of the customers who would be even able to park on venue site site. The rest would depend on a drop-off from an UBER driver (report assumed 20% would do this, which they stated was higher than normal assumptions), or to park at a remote lot, or on the street.

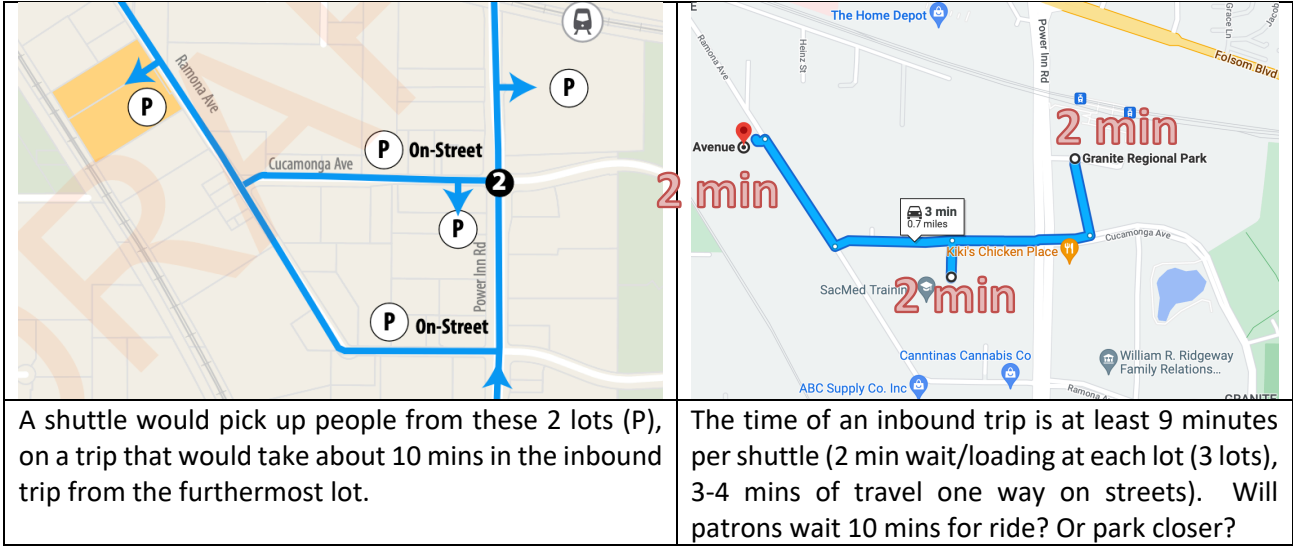
I concur with the F&P report that this is a very high optimistic assumption, actually based on discussion and guesswork (not any existing data or measurements), of how many venue patrons would actually choose this more expensive and uncertain UBER / Taxi travel option (reliability and uncertain arrival times). UBER has policies that riders cannot be more than 2 minutes late, and drivers no more that 5 minutes late, or penalties apply. These uncertain slips in time will affect the efficiency of the entire system of queued vehicles, which will also be interacting with the regular private cars also on the local roads.

This efficiency is not likely to be achieved with inadequate queue facilities that rely on a single lane of travel through the project site. This indicates the uncertain nature of this mode choice, that random traffic jams or delays will happen, and drivers can seemingly arbitrarily cancel rides and charge a no show fee to customers, etc. What UBER driver is going to want to wait in a 2 hour queue and lose all that earning power of time spent in a long line nearly a mile long? The whole idea of UBER being a positive choice for this challenging situation where potential breakdowns in logistics in the street system and passenger pickup system is very likely, not the least of which is the UBER driver's preference to NOT wait in a line for one to two hours for their one customer. They are not paid to wait in a line, and if they did, the fee would be extremely high as the fares will increase accordingly for wait times. This kind of situation can lead to either the customer or the driver cancelling the deal as it may become cost prohibitive. As such, the highly optimistic *assumptions* related to use of distant lots and UBER Taxi options are unreasonable.

Will people prefer to park nearly a mile away and wait/depend on shuttles when there is ample parking right at the site?

If patrons park at the project site lot itself, then their "wait time" to move inbound or outbound is zero, they can walk immediately to the entrance of the building. They park and begin to walk into the venue and get in the pedestrian line. They will save 10 minutes and are likely to take this option, and their car will be safer in the venue lot than out there in a lonely parking area that may or may not be guarded or well lighted.

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Is there a chance that most will drive to the venue as a first preference, creating a traffic jam there on Ramona Avenue?

Yes, even the UBER / Taxi queue will be nearly a mile long at close of show, and this is only 20% of the total vehicles in play for arrival or arrival/departures. The arrival period will have the longest lines of traffic seeking a parking spot. Since parking on site results in avoiding an additional wait and hassle of taking a 45 passenger shuttle bus (assumed to be only one bus making the round trips in the report), it is highly likely that all customers will seek to park on site rather than in a remote lot due to the many downsides of that option (discussed in length in the previous pages). Furthermore, no evidence of existing successful examples of a similar situation have been presented by the applicant or Fehr & Peers. It is my conclusion that, lacking the parking information systems needed to adequately inform patrons of where to park and if spaces are available, nearly all patrons will choose to see if they can get a close parking space. This is human nature to park as close as one can, and not knowing the circumstance, most people will check out the main venue first rather than get in the “wrong line.” This means it is likely that the traffic jams at the venue will be large since it is under capacity for the venue proposed. Under capacity in parking spaces, and under capacity in traffic flow capability. Cars will travel around the lot looking for that evasive parking space and impacting the capacity for vehicles to pass through. Stop and go lines will develop.

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Are the trip distribution assumptions in this figure based on a best case but unrealistic scenario where all patrons know where to go?

The TIS showed only 15% of the UBER / Taxi traffic coming from the US 50 freeway, which seems very low. A very high 45% was showing coming from the south on Power Inn Rd., but only 20% coming from the north areas on Howe Ave. / Power Inn Rd. This distribution pattern seems very low for the freeway, and very high to assume that most (65%) of the UBER / Taxi traffic would be using Power Inn Rd. Why are so many UBERS using Power Inn Rd, instead of coming from more remote locations such as the adjacent Watt Ave. and traveling via US 50 freeway to get to Power Inn Rd.? Or even from East Sacramento via US 50 or Folsom Blvd.? My conclusion is that the TIS assumptions for Trip Distribution do not make logical sense, especially when the TIS shows private cars coming to the venue via US 50 being 65% of that total (indicating that patrons mostly live far enough away to need to take the freeway). This compares to only 15% of customers using UBER or Taxis would come from far away. How is this known? The TIS made comparisons to the Golden 1 Center, a major sports venue, but this does not compare with the much smaller venue considered in this study. In downtown Sacramento, there is a very high population of employees who would rather take an UBER and avoid the hassles of trying to find a parking space and pay a high fee for a parking garage. There are obvious reasons why an UBER choice is preferred by the high number of UBER customers in that area, making the trip short (less than 3 miles) but this has a lot to do with customer choice. A person in Folsom or Roseville far away has just as much of a desire to attend a Kings game, as someone who works in a high rise in downtown Sacramento. The person who lives in Folsom or Roseville is also not a likely UBER customer because and UBER Black trip for these 20 miles will cost up to \$121. A private vehicle that can carry 4 to 5 passengers will be much cheaper at cost of gas being maybe \$5 and adding in \$20 parking and the convenience of no waiting for an UBER, makes it a much more attractive option. For a short 3 mile UBER ride from say, West Sacramento to the Golden 1 Center, this is a \$18 trip for an UBER Black, a very attractive option to otherwise finding AND paying for parking at \$20-45. So the comparison made in the TIS as to what happens with UBER sales at the Golden 1 Center is really not relevant in any way considering the economic and logistical dynamics there, and comparing to the entirely different situation that would happen on Power Inn Rd.

It is my opinion that these two modes (private car use, UBER/Taxi use) should have the same or very similar use of the US 50 freeway given the very regional nature of this venue and customer base and its suburban location, attracting customers from remote locations (due to its regional fan base), as well as according to the TIS trip distribution assumptions made for private cars/customers/fans. It is not logical to assume UBER trips are mostly short and within a 3 mile radius when the average UBER trip length is about 7 miles.

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How much does a Uber car Typically cost in Sacramento California ?

City	Service	Initial Fare	Fare per Mile	Service Cost
Uber Sacramento	UberX	1.00 \$	0.90 \$	0.90 \$
Uber Sacramento	UberXL	1.00 \$	1.55 \$	1.55 \$
Uber Sacramento	UberSELECT	5.00 \$	2.35 \$	2.35 \$
Uber Sacramento	UberPOOL	1.00 \$	0.85 \$	0.85 \$
Uber Sacramento	UberBLACK	8.00 \$	3.55 \$	3.55 \$
Uber Sacramento	UberSUV	15.00 \$	4.25 \$	4.25 \$
Uber Sacramento	UberLUX	20.00 \$	5.00 \$	5.00 \$

Who will direct traffic in a confusing arrival situation pertaining to parking?

The report discussed “mode split” for project traffic on Page 18 (last paragraph) and said that it “was determined after in-depth discussions between City Staff and the event operator” that a 20% Uber type mode split would be assumed (lowering parking needs). “Based on the operator’s anticipated audience and the proximity to Sacramento State, TNC use was assumed higher than an average event center; however, the private vehicle mode split was still maintained as the primary mode.”

However, the assumption made in the TIS of 20% of patrons using an UBER, etc., is a very generous assumption in favor of lowering the impacts of the project as well as the parking needs, an assumption that has not been tested or measured for a facility of this type in the industrial area proximate to the venue site. Nor has any logic been offered as to why that assumption was deemed reasonable. Note also that Fehr & Peers is clear to indicate that “staff and the operator” determined that the assumption was reasonable, not Fehr & Peers.

TASK 3. CHECK THE VMT LEVELS

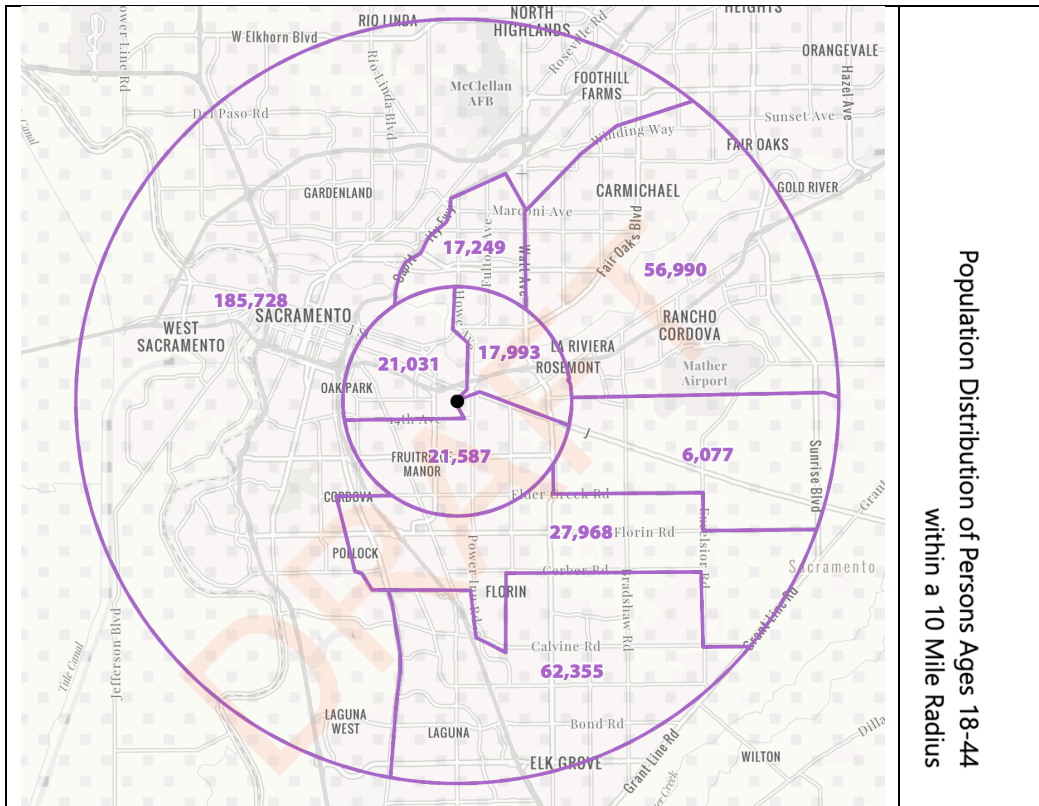
In this section we check the VMT levels for the proposed project and compare these to what an *innovative business and clean technology industry* use would generate for VMT. The following items were checked and compared:

1. Determine the VMT of the site for innovative business and clean technology industries and/or for a business service retail use.
2. Determine the VMT of the proposed site uses for a musical venue, club and bar using the data contained in the Fehr and Peers report for population centers of specific age groups.
 - Figure X in Appendix B, Population Distribution of Persons Ages 18-44 within a 10 Mile Radius shows this info by which a VMT estimation can be calculated.
3. Compare these two in a Table of Trip Generation for Daily Traffic, and a corresponding VMT total for the project site, with and without project.
4. Does the proposed project increase VMT and is there an environmental impact that would need to be mitigated?



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Since the VMT is based on distance, the following figure on population density within a 10 mile radius in the Sacramento region (from the TIS appendix) is shown below:



Source: appendix of TIS

Determine the VMT of the site for innovative business and clean technology industries and/or for a business service retail use.

VMT is the measure of vehicle miles traveled, usually on a daily basis, but can also be applied for peak hour situations. For example, stores and malls are typically developed in areas where there are large residential populations to get the maximum patronage. VMT for these kinds of projects for instance is generally low, because retail commercial developments are very ubiquitous, and customers do not necessarily have to travel very far (a few miles is typical) to get to one.

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When it comes to entertainment or work trips however, proximity is a secondary factor, and patrons or employees may need to travel very far to get to their respective destinations. The US Census reported in March 2021³:

“In 2019, the duration of the average one-way commute in the US increased to a new high of 27.6 minutes.”

Depending on the speeds of the roads traveled, this could range from 11.5 miles traveling at 25 mph on city streets with signals, etc., to a distance of 27.6 miles if traveling an average of 60 mph (such as using a freeway). So the VMT being subject to the distance traveled, could be much higher if the speed of travel makes the longer trip more feasible for a number of reasons: being a shorter amount of time to go a longer distance, affording a less expensive home, etc. In a commuter situation, this higher speed would allow an employee to live much farther from work and typically for less housing cost, vs living closer to work, traveling slower and for shorter distances on suburb streets, but paying more for housing that is located near to business parks. In an entertainment venue, people often travel great distances to go to a special event that is rare, such as professional sports or where an entertainer(s) in music or comedy is/are in the region performing. VMT will be higher for these circumstances.

What this means, is that the entertainment venue, which is the proposed Sacramento Music Hall and Performing Arts Center, the patrons will be much more of a regional attraction base than merely the local surrounding neighborhoods. It will likely be much more distance than the 10 mile radius shown in the TIS appendix figure shown above, since there are cities like Folsom and Roseville which are more than 10 miles away and which would easily be close enough to travel to this proposed music and entertainment venue.

Determine the VMT of the proposed site uses for a musical venue, club and bar using the data contained in the Fehr and Peers report for population centers of specific age groups.

This calculation is difficult to do because of the nature of the entertainment venue and it not being a consistent formula for determining where the customers will come from (depends on the artist or band playing, or the comedian, etc., all of which have their own fan bases who live in different places). However for a work condition or employee situation where these things are very constant, and where discounts in VMT for telecommuting is also possible. In an entertainment venue, customers come to the site to see the show, so there is no telecommuting component in the calculation of VMT. The proposed project will therefore have a higher VMT than would a much small number of people who would come to the project site for innovative business and clean technology industries or for business retail. For example, in the same building space where the proposed project is envisioning 2,219 seats or people in that building, this would compare to 2,219 employees, which is not possible in the small amount of space (18,000 sq ft). In

³ <https://www.census.gov/content/dam/Census/library/publications/2021/acs/acs-47.pdf>

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order for 2,219 employees to fit in that space they would each only get 9 sq ft or a 3' x 3" space. An Impractical situation. Using ITE Trip Generation rates for Light Industrial uses, I determined that the building space for the proposed project could only accommodate between 50 and 100 employees, or about 90 trip ends total in the pm peak hour of the generator on a weekday. Since we are comparing nearly 1000 vehicles coming into the proposed project, to about 90 vehicles for light industrial, this means that the proposed project will generate nearly 10 times as much VMT in the peak hour as would the music venue and restaurant project.

Figure X in Appendix B, Population Distribution of Persons Ages 18-44 within a 10 Mile Radius shows this info by which a VMT estimation can be calculated.

This figure was used to compare the population densities of the specified age group in a 3 mile radius and a 10 mile radius from the proposed project site. The UBER uses would come largely from within the 10 mile radius areas since the population is much higher (about 6 times more population than within the 3 mile radius section).

Compare in a Table of Trip Generation for Daily Traffic, the corresponding VMT total for the project site, with and without project.

Assuming that the employee based traffic for light industrial uses is 10 times less traffic (100 vehicles in a peak hour vs nearly 1100 vehicles for the proposed project if it is not discounted by 35% for "not being within the peak hour"), and that the proposed project will have a similar distance from origin to destination, then the project will generate about 11 times more traffic and similarly about 11 times the VMT in the peak hour.

Does the proposed project increase VMT and is there an environmental impact that would need to be mitigated?

The proposed project does increase the VMT significantly over existing zoning and land uses and should be examined in more practical detail in an EIR, and mitigations proposed.

TASK 4. OPINE ON SAFETY MATTERS

The new CEQA EIR components had regular traffic impacts (Level of Service or LOS) removed as a required element. But according to CEQA, the safety implications of poor traffic design or lack of mitigation can be considered an environmental impact that must be mitigated. In fact it is the responsibility of government to mandate analysis of a project's potentially significant transportation impacts related to air quality, noise, safety, or any other impact associated with transportation. The following safety related items were checked and examined:

1. *Potential traffic impacts and excessive turning movements on Ramona Ave. could have an effect on safety and we will opine on the possibilities and specifics.*

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2. *Does the traffic study address what happens at night when pedestrians walk on Cucamonga Ave. should patrons park there rather than on a remote lot a mile away? Or when some park on Ramona Ave. even though there are signs that say no parking from 10 pm to 6 am? Will enforcement happen?*
3. *Is there adequate street lighting available on Ramona Ave. where pedestrians may walk or cross the street to get to the project site?*
4. *Are crosswalks needed to be installed? Is lighting for crosswalks needed, or even a traffic signal to protect pedestrians at night at unlit street intersections?*
5. *Ramona Ave. at Cucamonga Ave. is an intersection that will be most heavily impacted by cars, pedestrians, taxi, uber, and shuttle, and large trucks potentially in the dark at this three-way intersection. Cucamonga has a stop sign control. There are no lights however on the project side of the intersection. There are no marked crosswalks. Is this a safety issue if pedestrians cannot be seen by cars, taxis, shuttles or trucks making a right turn from Cucamonga to go north on Ramona?*
6. *We will determine based upon the statues and traffic engineering standards in FHWA documents and the CAMUTCD if these are potential safety issues if the project is unmitigated.*
7. *We will determine if the mitigated negative dec neglected to address these issues.*

Potential traffic impacts and excessive turning movements on Ramona Ave. and its effect on safety.

As stated earlier in the report, the lines of traffic for UBER and Taxis and private vehicles will extend from the project site down Ramona St and all the way on Cucamonga, and up Power Inn Rd nearly to the US 50 freeway. This will create conflicts with pedestrians who are walking from their street parking space to the venue site. They will need to cross Ramona Ave. to get there and also to get back to their car, all in the dark as there is not adequate traffic control striping, stop signs, crosswalks, and even a signal to control traffic. With the poor lighting that is on the opposite side of the Ramona / Cucamonga intersection, pedestrians will be hard to see.

Does the traffic study address what happens at night when pedestrians walk on Cucamonga Ave. if patrons decide to park there rather than on a remote lot a mile away? Or when some park vehicles on Ramona Ave. even though there are signs that say no parking from 10 pm to 6 am? Will enforcement happen?

If a patron parks on Cucamonga Ave. or on Ramona Ave., then that patron will have to navigate on foot with moving cars who do not have traffic control outside of the single stop sign for WB traffic on Cucamonga Ave. More specifically, Ramona Ave. southbound traffic headed to Cucamonga Ave. is completely uncontrolled and does not have to stop. If there is a queue of vehicles on Ramona Ave. backed up past Cucamonga Ave., then pedestrians on Cucamonga Ave. headed west to cross Romana St. at this intersection will need to wade through vehicles closely spaced at the intersect (all headed north but delayed in a queue. When a pedestrian passes between vehicles it is dangerous enough that they might be accidentally crushed, but when stepping out into an unmarked crosswalk, a southbound vehicle may

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not see them in the dark, and may not stop, resulting in a potentially fatal accident especially since they do not have a stop sign or any traffic control, let alone adequate lighting. This is an extreme safety issue, and it was not addressed in the TIS, and must be mitigated and addressed in an EIR as well since these are all safety impacts from an ill-formed and unrealistic traffic plan.

Is there adequate street lighting available on Ramona Ave. where pedestrians may walk or cross the street to get to the project site?

There is not adequate street lighting on Ramona Ave. This is especially true at the intersection with Cucamonga Ave., where only the southeast corner has a streetlight that is fairly dim. This combined with the lack of traffic control will significantly raise the risk of severe accidents between not only vehicles, but also more importantly, pedestrians and/or bikes.

Are crosswalks needed to be installed? Is lighting for crosswalks needed, or even a traffic signal to protect pedestrians at night at unlit street intersections?

Crosswalks are needed. Lighting for crosswalks are needed. Traffic control for the conflicts between project related pedestrians and vehicles is needed. A traffic signal with street lighting is also potentially needed for this special event venue that will have significant levels of traffic flows and people walking to and from the venue.

Ramona Ave. at Cucamonga Ave. is an intersection that will be most heavily impacted by cars, pedestrians, taxi, uber, and shuttle, and large trucks potentially in the dark at this three-way intersection. Cucamonga has a stop sign control. There are no lights however on the project side of the intersection. There are no marked crosswalks. Is this a safety issue if pedestrians cannot be seen by cars, taxis, shuttles or trucks making a right turn from Cucamonga to go north on Ramona?

This is being identified as a significant safety issue.

Based upon the statues and traffic engineering standards in FHWA documents and the CAMUTCD, are these are potential safety issues if the project is unmitigated.

Yes, the MUTCD and other federal and state transportation documents and references indicate that this intersection of Ramona Ave. and Cucamonga Ave. are woefully inadequate to safely serve the various modes of traffic that will pass through this intersection.

Did the mitigated negative dec (MND) neglect to address these issues?

No. The MND relied on the TIS prepared by Fehr & Peers, but the TIS was incomplete and had several unrealistic assumptions.

CONCLUSION

The following points encapsulate many of the main points in this review:

- There is a lack of detail related to the logistics of the proposed multi-location distributed parking plan and shuttle option. The shuttle option is unrealistic to move so many people in a short amount of time.
- The parking lots have not been vetted or verified with a proper design or review to check feasibility of access and circulation, and more especially with the mix of a large 45 passenger bus.
- There are many unreasonable assumptions pertaining to mode split (Private Cars vs UBER / Taxi, and the many insurmountable logistical traffic circulation challenges due to several extreme circulation constraints, including extremely long lines for hundreds of vehicles waiting for the end of the show)
- The study used overly optimistic assumptions pertaining to walking and use of transit (transit station is nearly $\frac{3}{4}$ of a mile away, not conducive to walking to and from the venue. Transit is not located within the typical $\frac{1}{4}$ mile of the venue which would otherwise be a reasonable minimal distance for someone to walk in order to make it a viable alternative to using a car.
- Considerable safety impacts will occur after the show, where pedestrians will be crossing streets in the darkness of night, mixing with nearly 1,000 vehicles on Ramona Ave. and Cucamonga Ave. going both directions. These would be pedestrians who have likely been drinking alcohol at the venue and are afterwards crossing streets to get to their cars.
- No realistic circulation plan has been presented on account that they will be many U-turns and 3 point turns to avoid the long queues of vehicles that will take place entering and exiting the venue's parking lot, which is far under capacity (50% under capacity) for the proposed entertainment show venues. This happens when drivers change their minds when presented with an extremely long delay, which will occur for inbound and outbound traffic.