

Innovation Park and CNU Medical Center EIR (P18-077; SCH #2019039011)

Final EIR: Revision to Response to Caltrans Comments A.6-25 and A.6-27

City Council Hearing Date: February 15, 2022

Background:

The City of Sacramento is conducting CEQA review of the Innovation Park & CNU Medical Center project. As required by CEQA, the City circulated a Notice of Preparation in March 2019, inviting interested agencies and members of the public to comment regarding coverage of the environmental impact report (EIR). The City circulated a Draft EIR for comment on November 16, 2021.

The EIR process includes a requirement that the lead agency (in this case the City) provide a proposed response to any commenting agency at least ten days prior to the date the lead agency anticipates certifying the EIR. The City provided the required notice to commenting agencies, including Caltrans, on February 4, 2022.

Caltrans and the EIR—On-Ramp Metering:

Caltrans manages more than 50,000 miles of California's highway and freeway lanes, provides inter-city rail services, permits more than 400 public-use airports and special-use hospital heliports, and works with local agencies. The City and Caltrans are in regular communication regarding City projects, Caltrans facilities (including freeways), and coordination on long-range planning efforts. The City regularly meets with Caltrans to facilitate such communication. The Departments of Public Works and Community Development are most often involved in these efforts.

Caltrans commented on the Notice of Preparation. The Caltrans comments are included in the Draft EIR, Appendix B. (EIR materials are located under Innovation at <https://www.cityofsacramento.org/Community-Development/Planning/Environmental/Impact-Reports>.) By its letter dated January 3, 2022, Caltrans submitted comments on the Draft EIR. The Caltrans letter is identified in the Final EIR as Letter A6. The City has identified separate issues within the Caltrans letter with numbers, such as A6-1, A6-2, etc.

Caltrans was included in the agencies receiving the City's 10-day notice on February 4, 2022. Caltrans responded via email on February 9, 2022. Caltrans provided its additional response to the City's draft response for comments A6-25 and A6-27. The City has considered the additional Caltrans comments, and has revised the response included in the Final EIR. Attachment A includes the Caltrans Draft EIR comments A6-25 and 27, the City's proposed response, and Caltrans additional response.

The additional responses by Caltrans relate to the threshold of significance identified by the City in the Draft EIR for freeway off-ramps and on-ramps:

For freeway facilities:

- Result in off-ramp queuing that is greater than storage capacity; or*
- Result in on-ramp queuing for metered on-ramps that is greater than storage capacity*

The Ramp Queuing discussion begins at page 4.10-25 of the Draft EIR. The City approached the queuing analysis by first using a default of a nine-second metering cycle: two seconds of green and seven seconds of red. The crux of the City and Caltrans discussions that lead to a revision of the City's response to Caltrans comments is the following discussion in the Draft EIR:

One limitation of the Simtraffic software is that it cannot simulate ramp meter timing that changes dynamically with demand. Therefore, with direction from City staff, a nine-second cycle was used for all ramp meters. This includes two seconds of green time and seven seconds of red time for each cycle. For those queues that exceeded the storage capacity, to simulate a dynamic cycle length for the ramp meter, a seven-second cycle length was tested to determine whether the reduced red time improved the flow and reduced the queue length.

The traffic facilities at issue include the City's analysis and conclusion regarding queuing at two on-ramps: Caltrans has expressed concern that the City may be overly optimistic regarding the operation of the metering, and has underestimated the queuing that could result. If the queuing would exceed the storage, Caltrans suggests this would result in a significant effect not identified in the Draft EIR.

Existing on-ramp queues are shown in Draft EIR Table 4.10-6. All on-ramps are able to fully contain the queues without vehicles spilling back into the arterial roadway during the a.m. and p.m. peak hours.

The Draft EIR identified the vehicle trips that are anticipated for the proposed project, and the cumulative trips anticipated for future development. These trips were assigned routes to project future impacts on roadways and Caltrans facilities. The review included consideration of the queuing that could result for on-ramps. The Draft EIR identified two on-ramps that could exceed storage capacity. As the City noted in the Draft EIR:

When the ramp meter cycle length was reduced from nine seconds to seven seconds, a two-second reduction between green times, both queues were reduced to below the available storage. This indicates that with increased demand, a dynamically timed ramp meter would not cause the queue to exceed the storage provided.(Draft EIR, pp. 4.10-40, 41)

The concerns raised by Caltrans relate to the relationship between the traffic activity on the freeway mainline, the metered freeway on-ramp, and the surface streets that are maintained and managed by the City. The issue addressed here relates to a specific project, but the concerns of both Caltrans and the City relating to operation of the transportation network will continue.

The threshold of significance at issue relates to queuing on off-ramps that may exceed storage capacity. The result of such queuing would be increased congestion on City streets. The City, in compliance with state law, does not consider level of service (delay) in determining the significance of impacts related to traffic. City staff has considered the potential delay at the two affected on-ramps, and has concluded that the increased congestion on City streets would not result in any safety or other effects. (P. Clarke, pers. comm. February 12, 2022)

City Revised Response to Comments A6-25 and A6-27

Based on the above discussion, the City revises its response to Comments A6-25 and A6-27, as follows. Deleted text is shown in ~~striketrough~~, and added text is shown in underline.

Response to Comment A6-25:

The methodology found in Section 1.4 of the Ramp Metering Design Manual was used to perform a new analysis not included in the Draft EIR to calculate the queue length for all ramps and scenarios with ramp metering. Because ramp metering timing is dynamic and a default time is unknown, a default departure rate using an interval of six seconds was initially used, consistent with the documented SimTraffic analysis. The arrival rate was modified to use an anti-peak hour factor (PHF) for the first 15 minutes (lower arrival rate) and a PHF adjustment for the second 15 minutes (higher arrival rate), while the remaining 30 minutes used the standard hourly arrival rate. Because the results differed significantly from the SimTraffic results for several of the ramps, resulting in unrealistically long queues (in excess of 1 mile), the departure rate was increased by reducing the interval between green bulbs. This reduction in the interval was completed to better mimic the dynamic nature of the ramp meter and provide more realistic results based on existing field observations. Note that in all cases, it was assumed that only one vehicle per green was allowed to depart. The results of this analysis are shown as revised text in Chapter 2, Revisions to the Draft EIR, and no additional impacts were found.

The Ramp Metering Design Manual provides that the purpose of queue length storage design is to keep the connected local roadways free from the adverse impacts of the entrance ramp queue overspill. To the extent that any queue length exceeded storage capacity in a manner that could not be addressed by dynamic metering lights, it may result in congestion on a City street. The effect on City facilities would not be a CEQA impact because added vehicle delays on city streets is no longer an impact under SB743 and is more a City operational concern. The City experiences such effects in various areas, including, for example, queues for the I Street on-ramp to I-5 that backs down I Street, routinely to 9th or 10th Street. The City accepts that congestion on City streets is in many cases outweighed by the City interests in complete streets, amenable neighborhoods, and encouragement of multi-modal travel. The City finds no additional significant traffic or safety effects would occur.

Response to Comment A6-27

The recommendation language used was not intended to override the timing that Caltrans implements at the relevant ramp meters. Merely it was attempting to describe the fact that ramp metering timing is dynamic while the analysis used a static time in between green lights. As traffic conditions along the mainline changes, the ramp metering timing responds. Similarly, if a queue extends far enough back, it may trip a detector that is used to alert the meter as to when a queue may spill back into the travel way in order to flush the queue for a short time. This functionality was not available for the software used to analyze the queues and thus, the queues may be overestimated using the conservative timing assumed for all ramp meters.

The City acknowledges Caltrans concerns regarding ramp queuing, but believes that it has provided realistic analyses in the DEIR, in addition to a new analysis not included in the Draft EIR using the methodology found in Section 1.4 of the Ramp Metering Design Manual. The City looks forward to continued cooperation with Caltrans in evaluating and improving the transportation network.

Attachment A: Caltrans Comments and Responses: A6-25 and A6-27

Comment A6-25

Caltrans Draft EIR Comment A6-25

Ramp Metering: Caltrans requests the methodology for the Queue Length Storage Design in Section 1.4 of the Ramp Metering Design Manual to determine if the available storage length at the on ramps in the study area can accommodate the demand for all study scenarios. Use of this methodology may result in additional impacts being determined. (<https://dot.ca.gov/programs/traffic-operations/ramp-metering>)

City Final EIR Proposed Response A6-25

The methodology found in Section 1.4 of the Ramp Metering Design Manual was used to perform a new analysis not included in the Draft EIR to calculate the queue length for all ramps and scenarios with ramp metering. Because ramp metering timing is dynamic and a default time is unknown, a default departure rate using an interval of six seconds was initially used, consistent with the documented SimTraffic analysis. The arrival rate was modified to use an anti-peak hour factor (PHF) for the first 15 minutes (lower arrival rate) and a PHF adjustment for the second 15 minutes (higher arrival rate), while the remaining 30 minutes used the standard hourly arrival rate. Because the results differed significantly from the SimTraffic results for several of the ramps, resulting in unrealistically long queues (in excess of 1 mile), the departure rate was increased by reducing the interval between green bulbs. This reduction in the interval was completed to better mimic the dynamic nature of the ramp meter and provide more realistic results based on existing field observations. Note that in all cases, it was assumed that only one vehicle per green was allowed to depart. The results of this analysis are shown as revised text in Chapter 2, Revisions to the Draft EIR, and no additional impacts were found

Caltrans Additional Response A6-25

An interval of 6 seconds between greens represents a 600 vehicle per hour discharge rate. For one-lane on-ramps, this discharge rate is quite high and typically represents the “higher-end” (i.e., least restrictive) of discharge rates Caltrans allows for one-lane on-ramps. While ramp meters are dynamically timed, they are responsive to conditions on the freeway mainline. That is, when traffic congestion on the freeway increases, as it typically does during peak travel periods, the ramp metering rates become more restrictive, operating at the “lower limit” of the discharge rates. Reducing the interval between green bulbs from 6 seconds during peak hours is unrealistic, and Caltrans recommends revising this analysis using more realistic discharge rates. The metering rates that are typically in place during peak hours for existing ramp meters included in this analysis are provided below (note the units are vehicles per hour per lane):

- I-5 NB/Arena Boulevard loop on-ramp (for AM and PM peaks): 240 vphpl
- I-5 NB/Arena Boulevard slip on-ramp (for AM peak): 240 vphpl
- I-5 NB/Arena Boulevard slip on-ramp (for PM peak): 310 vphpl
- I-5 SB/Arena Boulevard slip on-ramp (for AM peak): 525 vphpl
- I-5 SB/Arena Boulevard slip on-ramp (for PM peak): 415 vphpl
- I-5 SB/Arena Boulevard loop on-ramp (for AM peak): 290 vphpl
- I-5 SB/Arena Boulevard loop on-ramp (for PM peak): 300 vphpl
- I-5 SB/Del Paso Road slip on-ramp (for AM peak): 500 vphpl
- I-5 SB/Del Paso Road slip on-ramp (for PM peak): 350 vphpl
- I-5 SB/Del Paso Road loop on-ramp (for AM peak): 530 vphpl
- I-5 SB/Del Paso Road loop on-ramp (for PM peak): 390 vphpl

- I-80 EB/Truxel Road loop on-ramp (for AM peak): 250 vphpl
- I-80 EB/Truxel Road loop on-ramp (for PM peak): 250 vphpl
- I-80 EB/Truxel Road slip on-ramp (for AM peak): 300 vphpl
- I-80 EB/Truxel Road slip on-ramp (for PM peak): 240 vphpl
- I-80 WB/Truxel Road loop on-ramp (for AM peak): 300 vphpl
- I-80 WB/Truxel Road loop on-ramp (for PM peak): 240 vphpl
- I-80 WB/Truxel Road slip on-ramp (for AM and PM peak): 600 vphpl
- I-80 EB/Northgate Boulevard loop on-ramp (for AM peak): 450 vphpl
- I-80 EB/Northgate Boulevard loop on-ramp (for PM peak): 390 vphpl
- I-80 EB/Northgate Boulevard slip on-ramp (for AM peak): 250 vphpl
- I-80 EB/Northgate Boulevard slip on-ramp (for PM peak): 240 vphpl
- I-80 WB/Northgate Boulevard loop on-ramp (for AM peak): 300 vphpl
- I-80 WB/Northgate Boulevard loop on-ramp (for PM peak): 400 vphpl
- I-80 WB/Northgate Boulevard slip on-ramp (for AM peak): 600 vphpl
- I-80 WB/Northgate Boulevard slip on-ramp (for PM peak): 700 vphpl

Please verify in an earth imagery satellite application (e.g., Google Earth) that the queue length calculated with this methodology would not spill back to adjacent ramp terminal intersections and affect their operation during the peak hour.

Comment A6-27

Caltrans Draft EIR Comment A6-27

The DEIR proposes reducing ramp meter cycle lengths to accommodate the queue lengths at two on-ramps where the storage length is not sufficient. Adjusting ramp metering rates is not within the authority of the City, and Caltrans would not make these adjustments as they would negatively impact the performance of the SHS. Caltrans requests removing this reference to this (on page 4.10-43 and 4.10-53) and modify any conclusions which may be based on shortened ramp metering cycles

City Final EIR Proposed Response A6-27

The recommendation language used was not intended to override the timing that Caltrans implements at the relevant ramp meters. Merely it was attempting to describe the fact that ramp metering timing is dynamic while the analysis used a static time in between green lights. As traffic conditions along the mainline changes, the ramp metering timing responds. Similarly, if a queue extends far enough back, it may trip a detector that is used to alert the meter as to when a queue may spill back into the travel way in order to flush the queue for a short time. This functionality was not available for the software used to analyze the queues and thus, the queues may be overestimated using the conservative timing assumed for all ramp meters

Caltrans Additional Response A6-27

Caltrans Response: While ramp meters are dynamically timed, they respond to conditions on the freeway mainline. Traffic congestion on the freeway increases during the AM and PM peak periods and will likely increase under future conditions. When congestion increases on the freeway mainline, ramp meters are programmed to operate more restrictively with longer cycle lengths and lower discharge rates. Therefore, reducing the ramp meter cycle length in SimTraffic is unrealistic. Caltrans recommends revising the analysis with increased cycle lengths at the ramp meters to represent this condition. Caltrans requests that reference to this practice be removed from the EIR and that the applicant modify any conclusions which may be based on shortened ramp meter cycle lengths.

