

PINNACLE TRAFFIC ENGINEERING

831 C Street
Hollister, California 95023
(831) 638-9260 • (805) 644-9260
PinnacleTE.com

August 27, 2015

Ryan Carrel, P.E.
Associated Engineering Group, Inc.
4206 Technology Drive, Suite 4
Modesto, CA 95356

RE: San Joaquin Delta Community College NCC Project; San Joaquin County, CA
Trip Generation and Constraints Analysis Report
Response to Comment Material

Dear Mr. Carrel,

The Delta NCC Trip Generation and Constraints Analysis Report (June 24, 2015) was submitted to San Joaquin County, Caltrans and the City of Galt for review and comment. A cover letter was prepared for each agency requesting a technical review of the analysis which focused on the facilities within their respective jurisdiction. In addition, comments were requested regarding the (1) existing data, (2) analysis methodologies, (3) trip generation estimates, (4) future traffic volume forecasts, or (5) identified improvements. The following is provided to address the comments received from each public agency:

San Joaquin County (Firoz Vohra, Senior Engineer)

1. The description of Liberty Road and N. Lower Sacramento Road in Section 2.0 (Existing Conditions) states both roads are classified as collector streets (identified as major collector-rural streets in the County's 2035 GPDEIR and GP Update). The ADT analysis used a 24-hour capacity of an "arterial with no left turn lanes" since it was felt that this classification best fit local conditions (verses a 2-lane highway). The LOS E capacity is slightly higher for the "arterial with no left turn lanes" classification (13,500 ADT) than the "collector" classification (12,000 ADT). As indicated, the change would not affect the analysis conclusions (2035 daily volumes would exceed the LOS C standard on the portion of N. Lower Sacramento Road north of Liberty Road, with or without the Delta NCC project). *The County should determine how future improvements on this segment of N. Lower Sacramento Road and the bridge over Dry Creek could be funded (when and if warranted) and how to address project mitigation (i.e. fair-share contributions). The San Joaquin Delta College District will defer to the County on how to feasibly mitigate any potential long term impacts to the bridge over Dry Creek.* If the District decides to pursue development of the NCC site (evaluated in the analysis), this issue would need to be addressed in the project traffic impact study (TIS).

2. As indicated, 2035 daily volumes would exceed the LOS C standard on the portion of N. Lower Sacramento Road north of Liberty Road, with or without the Delta NCC project (no reduction in the number of students would improve the adverse LOS). The analysis of future conditions did assume a 3% annual traffic growth rate, which could be low or high. At this time, the payment of TIMF and RTIF would be the only viable mitigation measure for a project since it would be difficult for any one project to be responsible for funding improvements to the Dry Creek Bridge. *The County should recognize a possible need for future improvements and identify feasible mitigation measures for local projects (i.e. develop a project and include on the TIMF/RTIF networks). The San Joaquin Delta College District will defer to the County on how to feasibly mitigate any potential long term impacts to the bridge over Dry Creek.* This issue would need to be addressed in the project TIS.
3. The intent of the Trip Generation and Constraints Analysis was to identify the areas of potential constraint and determine what improvements would be required for the initial development of the Delta NCC. The analysis is being used by the District to determine if development of the NCC site is feasible and to help them develop an actual project. Therefore, the analysis primarily focused on the future 2025 (10-year) and 2035 (20-year) scenarios (plus Phases I and II). Under the Identified Infrastructure Improvements discussion there are some references to the “2035 plus Phase III” scenario since these traffic levels were evaluated for some of the key network components. An analysis of Phase III would be included in the project TIS.
4. The construction of roundabout intersections is discussed as alternative intersection control under Intersections #3 and #5, though a formal analysis was not included. It is anticipated that roundabout improvements at Intersection #2 may require additional R/W and have potentially significant environmental impacts due to the overland flow channel adjacent to the intersection. The analysis of roundabout intersections would be included in the project TIS.
5. If the District decides to pursue development of the NCC site, additional volume figures would be included in the project TIS.
6. Only a small percentage of the project trips (shown on Figures 4A, 4B and 4C) were assigned to the SR 99 frontage roads (WFR and EFR). It was assumed these trips would use the EFR for ingress (inbound) and WFR for egress (outbound). Therefore, there are no missing numbers on Figures 4A, 4B or 4C.

Caltrans - District 10 (Tom Dumas, Chief - Office of Metropolitan Planning)

1. The SR 99 freeway segment (Tables 2 and 12) and ramp (Tables 5 and 15) peak hour LOS analysis worksheets do include the density data per the HCM 2010 methodology. Table 11 presents an evaluation of daily volumes and V/C ratios, and therefore, does not report density. The trip generation and constraints analysis for the Delta College NCC does include an analysis of SR 99 ramp merge/diverge operations (see Tables 5 and 15). The peak hour volumes for the SR 99 mainline and ramp maneuvers are illustrated on the appropriate figures (Figures 3A,

3B, 5A, 5B, 6A and 6B). An analysis of adjacent SR 99 interchange ramps (i.e. Crystal Way, Fairway Drive, and Collier Road) may not be warranted as it is anticipated that little-to-no project traffic would use these ramps during peak periods. The analysis of SR 99 focused on the segment south of Liberty Road since the traffic volumes are higher than on the segment north of Liberty Road. If the District decides to pursue development of the NCC site (evaluated in the analysis), a scope for a formal TIS will be coordinated with Caltrans and the County. *It is requested that Caltrans staff provide a detailed technical review of the SR 99 ramp analysis (merge/diverge), as it is a key component of the constraints analysis and required to help identify all potential traffic mitigation related issues.*

2. Comment noted. If the District decides to pursue development of the NCC site, a formal TIS will be prepared for the project which would include the requested additional data.
3. Comment noted. The additional data would be included in the project TIS.
4. As indicated in the analysis (Page 20), the evaluation of future 2025 and 2035 scenarios was conducted assuming that no improvements will be completed prior to the initial development of the Delta NCC. Therefore, the analyses of 2025 and 2035 conditions were conducted using the existing intersection geometrics and traffic control. The additional data would be included in the project TIS.
5. In order to make the document easy to review the analysis only includes summary tables for the various LOS analyses. The additional data would be included in the project TIS.
6. The intent of the Trip Generation and Constraints Analysis was to identify the areas of potential constraint and determine what improvements would be required for the initial development of the Delta NCC. The analysis is being used by the District to determine if development of the NCC site is feasible and to help them develop an actual project. Therefore, the analysis primarily focused on the future 2025 (10-year) and 2035 (20-year) scenarios (plus Phases I and II). Under the Identified Infrastructure Improvements discussion there are some references to the “2035 plus Phase III” scenario since these traffic levels were evaluated for some of the key network components. Based on the background growth rates it may be difficult to present an analysis of 2045 conditions, since significant improvements to the SR 99 could be required (i.e. widening to 6 lanes). *Since these long range improvements have been identified, how is Caltrans addressing the funding and mitigation (on a project level)? The San Joaquin Delta College District will defer to Caltrans on how to feasibly mitigate any potential long term impacts to SR 99.* An analysis of Phase III and this issue would need to be addressed in the project TIS.
7. An analysis of the peak hour traffic signal warrant for Intersection #3 is based the intersection volumes and existing number of approach lanes. The analysis indicates that the warrant would be satisfied under the 2025 plus Phase I conditions (PM peak hour only with the existing single lane approaches). However, the identified improvements would provide two (2) SB approach

lanes in lieu of 1 (existing). Therefore, the PM peak hour warrant may only be marginally satisfied (see signal warrant graph in Appendix) under the 2025 plus Phase I conditions. This is why the improvements for the 2025 plus Phase I scenario only include the installation of a right turn lane on the SB and EB approaches. This would eliminate the need for signal control at this intersection under the 2025 scenario. *The San Joaquin Delta College District will defer to Caltrans on how to feasibly mitigate any potential long term impacts to the SR 99 ramp intersections (i.e. require project to install signal control, contribute fair-share towards signal control installation, etc).*

8. An analysis of the peak hour traffic signal warrant for intersection #5 is based the intersection volumes and existing number of approach lanes. The analysis data indicates that the warrant would be marginally satisfied under the Existing plus Phase I scenario (PM peak hour only, see signal warrant in Appendix). However, the intersection peak hour analysis demonstrates the LOS will remain within acceptable limits. The constraints analysis focuses on the 2025 and 2035 scenarios. The analysis does indicate that the warrant would be satisfied under the 2025 plus Phase I conditions (PM peak hour only, with or without the Delta NCC). Similar to the discussion provided for Intersection #3, the construction of roadway improvements (i.e. WB left turn lane) would reduce the need for signal control under the 2025 scenario (since only warranted for the PM peak hour). The future installation of traffic signal control has been identified and recommended under the 2035 scenario. This intersection may be a good location for alternative intersection control (i.e. a roundabout). *The San Joaquin Delta College District will defer to Caltrans on how to feasibly mitigate any potential long term impacts to the SR 99 ramp intersections (i.e. require project to install signal control, contribute fair-share towards signal control installation, etc).*
9. Intersection #4 does not have any side street movements that could warrant signal control. Therefore, a signal warrant analysis is not applicable. Intersection #6 is too close to the SR 99 NB off ramp, and therefore, signal control would not be appropriate due to the potential vehicle queuing on the SR 99 mainline. In addition, the side street (EFR) peak hour volumes are well below the magnitude required for signal control (34 vph vs. 75 vph). Caltrans would never support the installation of signal control at Intersection #6.
10. The AADT data for SR 99 near Liberty Road was derived using the most recent 16 months of available data on the Caltrans PeMS database, as indicated on Page 6 of the analysis (see PeMS data included in Appendix). The adjustment of peak hour volumes could be included in the project TIS.
11. See response to comment #7 regarding Intersection #3.
12. See response to comment #8 regarding Intersection #5.
13. See response to comment #7 and #8. The construction of roadway improvements changes the traffic signal warrant analysis conclusion under the existing intersection geometrics conditions

(increases the number of approach lanes). Therefore, the analysis is not deferring mitigation for signal control from Phase I (2025) to Phase II (2035). The identified improvements include providing additional capacity (i.e. addition of turn lanes) before the installation of signal control since in some cases this would better address peak directional movements. Typically, signal control would not be installed just because 1 peak hour warrant would be satisfied. An Intersection Control Evaluation (ICE) for both locations would be included in the project TIS.

14. Comment noted.

15. Comment noted.

Caltrans - District 3 (Joshua Swearingen)

1. A quick review of the 95th percentile queue data for the 2035 plus Phase III did not identify any significant queuing issue at either the SR 99 ramp intersections (#3 or #5). If the District decides to pursue development of the NCC site, a formal TIS will be prepared for the project which would include the requested additional data.

City of Galt (Gwen Owens, Public Works Director)

1. Timing for the installation of signal control at the Lincoln Road and Kost Road intersection will depend on future development in the City and traffic growth on N. Lower Sacramento Road. The 2035 analysis indicates that warrants would be satisfied with or without the Delta College NCC. *The City should determine how any future improvements would be funded (when and if warranted) and how to address County project's fair-share contribution.* If the District decides to pursue development of the NCC site (evaluated in the analysis), this issue would need to be addressed in the project's traffic impact analysis (TIA).
2. Copies of the new traffic count data collected for the analysis are included in the Appendix.

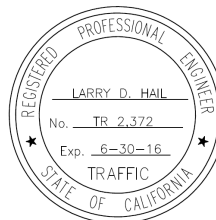
As previously stated, each agency was requested to provide comments regarding the existing data, analysis methodologies, trip generation estimates, future traffic volume forecasts, and identified improvements. Since some agencies did not comment on every issue, it is assumed that the analysis approach and methodologies are acceptable.

Please contact my office if there are any questions regarding the response material.

Pinnacle Traffic Engineering



Larry D. Hail, CE, TE, PTOE
President



ldh:msw

Delta College L11

Pinnacle Traffic Engineering