

Rio Americano High School Stadium Improvements Project Draft Environmental Impact Report

SCH Number: 2026010094

Appendix F Vehicle Miles Travelled Analysis



August 2026

Memorandum

To: Suzanne McFerran
AECOM

From: Tyler Mickelson, P.E.
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Re: *Rio Americano High School Stadium Lighting – Vehicle Miles Traveled (VMT) Analysis*
Sacramento County, California

Date: September 1, 2026

This memorandum documents a Vehicle Miles Traveled (“VMT”) analysis completed for the proposed Rio Americano High School Stadium Lighting (“Project” or “proposed Project”) in Sacramento County, California. With the passage of SB 743, VMT has become an important indicator for determining if new development will result in a significant transportation impact under the California Environmental Quality Act (CEQA). This memorandum summarizes the VMT analysis and resultant findings for the proposed Project.

Project Understanding

Rio Americano High School football home games are currently held at El Camino High School three miles north of the school campus. The proposed Project would install improvements to the existing Rio Americano High School stadium which would allow for future home games to be held on Friday evenings on the Rio Americano campus. These improvements would include stadium lighting, press box improvements, and increased bleacher capacity. Proposed improvements would continue to accommodate existing activities, allowing for some to be hosted later into the evening hours compared to current scheduling, as well as accommodating newly hosted home football games and other potential school or community events such as graduation. Current and proposed venue use is included in **Attachment A**.

Purpose of Analysis

Passed in 2013, Senate Bill 743 (SB 743) changes the focus of a transportation impact analysis under the California Environmental Quality Act (CEQA) from measuring impacts to drivers, to measuring the impact of driving. The change has been made by replacing vehicle delay level of service (LOS) with project generated VMT. This shift in transportation impact focus is intended to better align transportation impact analysis and mitigation outcomes with the State’s goals to reduce greenhouse gas (GHG) emissions, encourage infill development, and improve public health through more active transportation.

In January 2019, the Natural Resources Agency finalized updates to the CEQA Guidelines including the incorporation of SB 743 modifications. The Guidelines’ changes were approved by the Office of Administrative Law and are now in effect. The provisions apply statewide as of July 1, 2020.

To help aid lead agencies with SB 743 implementation, the Governor’s Office of Land Use and Climate Innovation (LCI), formerly the Office of Planning and Research (OPR), produced the *Technical Advisory on Evaluating Transportation Impacts in CEQA*¹ (December 2018) that provides guidance regarding the

¹ *Technical Advisory on Evaluating Transportation Impacts in CEQA*. Governor’s Office of Planning and Research State of California. December 2018.

variety of implementation questions they face with respect to shifting to a VMT metric. Key guidance from this document includes:

- VMT is the most appropriate metric to evaluate a project's transportation impact.
- LCI recommends tour- and trip-based travel models to estimate VMT but ultimately defers to local agencies to determine the appropriate tools.
- Lead agencies have the discretion to set or apply their own significance thresholds.

San Juan Unified School District serves as the lead agency in administering CEQA requirements for the Project. While the proposed Project is not subject to County Guidelines, as the Project is located within Sacramento County, and in the absence of their own adopted VMT implementation policy or guidelines, the VMT guidance published by Sacramento County² was used for determining potential for VMT impacts under CEQA.

Based on County guidelines the following significance threshold was used to determine if the proposed Project has a significant VMT impact:

- The proposed Project will have a significant transportation impact if there is a net increase in regional VMT compared to the existing, no Project, conditions.

Methodology and Assumptions

A varsity home football game was identified as the highest new VMT producing event to be hosted at the improved Rio Americano Stadium under Project conditions. Existing events held at Rio Americano High School Stadium do not result in a change in trip lengths under the proposed Project because the location of these events remains the same. Based on the attendance estimates for other events, bleacher capacity was not a limiting constraint to trip generation.

The number of trips anticipated to be generated by the proposed Project was approximated using the football game attendances summarized in **Attachment A**. Football games are expected to produce the largest number of trips to and from the school for stadium events. This study focuses on the relocation of varsity home games from El Camino High School to Rio Americano High School, which would typically occur 5-8 times on a Friday evening in the Fall.

To determine the average vehicle occupancy for trips heading to football games, existing traffic data was collected during a Rio Americano High School home game held at El Camino High School, on Friday August 28, 2025. (NDS, August 2025). The occupancy study documented an average vehicle occupancy of 2.36. A summary of this data can be found in **Attachment B**.

Table 1 shows the attendance estimate at the August 28, 2025 home game was 3,301 people. This attendance estimate includes students, spectators, players, school staff, and event employees. This represents the maximum observed home game attendance from the past two years, based on the reported home game ticket sales for the 2024 and 2025 football seasons. To ensure a conservative approach to change in VMT calculations, the proposed Project event attendee count is assumed to be 3,400 people.

Attendance data provided by San Juan USD is shown in **Attachment A**. Ticket sales and attendance are not tracked separately for home team versus away team spectators, therefore this analysis assumes 500 attendees originate from the visiting high school under both analysis scenarios.

² *Transportation Analysis Guidelines*. County of Sacramento. September 10, 2020.

Under Existing plus Project conditions, it is assumed that approximately 5-percent of attendees are already on campus and 10-percent of attendees expected to walk or bike to campus. This assumption is based on several factors including:

- Students attending junior varsity (JV) games held immediately prior to varsity games will remain on campus to attend both games.
- The school's proximity is to residential areas, with many homes within a half-mile walking distance.
- Access from the river bike path and trail, facilitating biking or walking to the school.

Ticket sales data also shows that attendance is roughly correlated with distance from the visiting school. To determine origins for home attendees to a Friday night game, Replica mobility analytics data on Rio Americano High School was used to estimate the impact of the Project on attendee trip length. Replica estimates the travel characteristics of a representative synthetic population allowing home location attributes to be tied to school trips. This study assumes that average location of visitor attendee trip origins is centered at the visiting high school campus. As shown in **Attachment C**, the list of visiting schools evaluated is based on Rio Americano High School's league opponents over the past five (5) seasons.

Under Existing conditions, a game is hosted at El Camino High School, and under the proposed Project conditions Rio Americano High School is able to host its own home game. Trip distances for attendees are calculated from Geographical Information System (GIS) functions in the TransCAD modeling package to optimize travel time from origins to destinations. The Rio Americano High School home block groups, visiting school locations, and stadium locations are inputs for the multi-path analysis to identify logical paths and estimate driving distance for home and visiting attendees. An example of this analysis is shown in **Attachment D**.

Analysis Results

Under existing conditions, a football game with maximum attendance is estimated to generate 1,397 vehicle trips while under Project conditions, a football game is estimated to generate 1,255 vehicle trips.

Table 1 – Existing and Existing plus Proposed Project Vehicle Trips

Metric	Existing Conditions	Proposed Project Conditions
Total Event Attendances ¹	3,301	3,400
Home Attendees ²	2,801	2,900
Visitor Attendees ²	500	500
Home Attendees Not Driving to Game ³	0	435
Attendees Traveling by Vehicle	3,301	2,965
Average Vehicle Occupancy (persons/vehicle) ⁴	2.36	2.36
Estimated Vehicle Trips (Friday PM Game)	1,397	1,255
Net Change in Vehicle Trips		-142

Notes:

1. Based on attendance data provided by San Juan USD
2. Based on existing conditions
3. Representative of home attendees who remain on campus or who walks/bikes to the game
4. Traffic study conducted at El Camino Fundamental HS (NDS, 2025)

Table 2 – Existing and Existing plus Proposed Project Round Trip Distance Estimates

From	To El Camino (mi)	To Rio (mi)
El Camino High School	-	2.7
Christian Brothers High School	10.4	10.0
Vista del Lago High School	22.6	20.9
Del Campo High School	6.3	7.3
Sacramento High School	9.7	8.1
Destiny Christian Academy High School	6.3	4.7
Woodcreek High School	16.3	18.8
Bella Vista High School	10.1	11.1
Ponderosa High School	31.1	29.4
Inderkum High School	12.8	15.3

Table 3 – Existing and Existing plus Proposed Project VMT

Metric	Existing Conditions	Project Conditions
Estimated Vehicle Trips	1,397	1,255
Home Attendees	1,185	1,043
Home Attendee Average Trip Distance	5.8	5.0
Vistor Attendees	212	212
Visitor Attendee Average Trip Distance ¹	12.8	15.3
Estimated Vehicle Miles Traveled	19,077	16,980
Net Change in Vehicle Miles Traveled		-2,098

Notes:

1. Assumed distance from Inderkum High School as conservative assumption.

Based on Sacramento County Guidelines, new or redevelopment projects generating fewer than 230 daily trips may screen out from quantitative VMT analysis. The Project is expected to reduce vehicle trips and thus may be presumed to have a less than significant VMT impact under Sacramento County Guidelines. Events already taking place at the Project site like other sports games and practices currently draw less attendance than the existing capacity. The proposed Project would allow these activities and practices to proceed later in the evening with the inclusion of stadium lighting but are not anticipated to substantively increase attendance.

The County guidelines also allow for the need to study some projects that meet screening criteria if the project is unique or otherwise changing the travel behavior in the region. Given the Project will result in the relocation of a regularly recurring high school event, a quantitative analysis was also completed. Under the quantitative analysis, the proposed Project would have a significant transportation impact if there is a net increase in regional VMT compared to the existing conditions without the Project. The analysis shows a regional game day under conservative conditions results in a VMT reduction of 2,098 and thus is expected to have a **less than significant VMT impact**.

Findings

Based on the results of this analysis, the following findings are made:

- Under existing conditions, a varsity football game is estimated to generate 1,397 vehicle trips. Under Project conditions, a football game is estimated to generate 1,255 vehicle trips.
- Football games held at El Camino High School are anticipated to produce 19,077 total VMT. Football games held at the proposed Rio Americano High School stadium are anticipated to produce 16,980 VMT. The change in VMT between the Existing and proposed Project conditions is a net reduction of 2,098 VMT.
- The proposed Project would have a significant transportation impact if there is a net increase in regional VMT compared to the existing, no Project, conditions. Thus, because the analysis shows the Project is expected to result in a net reduction of 2,098 game day VMT, the Project is expected to have **a less than significant VMT impact**.

Attachments:

Attachment A – Rio Americano High School Football Attendance Counts

Attachment B – Average Vehicle Occupancy

Attachment C – Rio Americano High School Football Game Schedule (2021-2026)

Attachment D – TransCAD Logical Path Output Example

Attachment A

Rio Americano High School Football Attendance Counts

Season	Date	Matchup / Notes	Tickets Sold	Band Attendance	Comp / Will Call	Total Attendance
Fall 2024	45527	Home Game	1442	0	200+	1642+
Fall 2024	45562	Home Game	1058	100+	200+	1358+
Fall 2024	45583	Home Game	1432	100+	200+	1732+
Fall 2024	45597	Home Game	1023	0	200+	1223+
Fall 2025	45898	Rio vs Jesuit	3197	0	200+	3397+
Fall 2025	45919	Rio vs Vista del Lago	1154	120	50	1324
Fall 2025	45933	Rio vs Bella Vista	1488	120	50	1658
Fall 2025	45954	Rio vs Inderkum	968	0	50	1018

Attendance data provided by client

Attachment B

Average Vehicle Occupancy

Prepared by National Data & Surveying Services

Average Vehicle Occupancy

Location: El Camino Fundamental HS
City: Sacramento, CA

Date: 8/29/2025
Day: Friday

Time	Vehicle Occupancy					
	1 (Driver Only)	2 (Driver with 1 Passenger)	3 (Driver with 2 Passengers)	4 (Driver with 3 Passengers)	5 (Driver with 4 Passengers)	6+ (Driver with 5 or more Passengers)
6:30 PM	15	10	9	2	1	0
6:45 PM	39	41	18	12	5	2
7:00 PM	35	49	27	10	10	4
7:15 PM	29	39	28	14	11	2
7:30 PM	25	23	14	12	1	2
7:45 PM	16	35	12	6	4	2
Total Vehicles	159	197	108	56	32	12

Total # of People	1333
Total # of Vehicles	564
Avg. Vehicle Occupancy	2.36

Attachment C

Rio Americano High School Football Game Schedule (2021-2026)

School Played	Location	League Game	Season
Antelope (Antelope, CA)	Unknown (likely neutral or home at Del Campo)	No	21-22
Stagg (Stockton, CA)	Stagg High School	No	21-22
Pioneer (Woodland, CA)	Del Campo High School	No	21-22
El Camino (Sacramento, CA)	Del Campo High School	Yes	21-22
Christian Brothers (Sacramento, CA)	Christian Brothers High School	Yes	21-22
Vista del Lago (Folsom, CA)	Vista del Lago High School	Yes	21-22
Del Campo (Fair Oaks, CA)	Del Campo High School	Yes	21-22
Sacramento (Sacramento, CA)	Sacramento High School	Yes	21-22
Destiny Christian Academy (Sacramento, CA)	Del Campo High School	Yes	21-22
Ponderosa (Shingle Springs, CA)	Ponderosa High School	No	22-23
Marysville (Marysville, CA)	Rio Americano High School	No	22-23
Woodland (Woodland, CA)	El Camino High School	No	22-23
Pioneer (Woodland, CA)	Pioneer High School	No	22-23
Destiny Christian Academy (Sacramento, CA)	Destiny Christian Academy	Yes	22-23
El Camino (Sacramento, CA)	El Camino High School	Yes	22-23
Christian Brothers (Sacramento, CA)	Rio Americano High School	Yes	22-23
Vista del Lago (Folsom, CA)	Rio Americano High School	Yes	22-23
Del Campo (Fair Oaks, CA)	Del Campo High School	Yes	22-23
Sacramento (Sacramento, CA)	Rio Americano High School	Yes	22-23
McClatchy (Sacramento, CA)	El Camino High School	No	23-24
Liberty Ranch (Galt, CA)	Rio Americano High School	No	23-24
Woodland (Woodland, CA)	Woodland High School	No	23-24
Burbank (Sacramento, CA)	Rio Americano High School	No	23-24
Destiny Christian Academy (Sacramento, CA)	Capital Christian High School	Yes	23-24
El Camino (Sacramento, CA)	Rio Americano High School	Yes	23-24
Christian Brothers (Sacramento, CA)	Christian Brothers High School	Yes	23-24
Vista del Lago (Folsom, CA)	Vista del Lago High School	Yes	23-24
Del Campo (Fair Oaks, CA)	Rio Americano High School	Yes	23-24
Sacramento (Sacramento, CA)	Sacramento High School	Yes	23-24
Fairfield (Fairfield, CA)	Fairfield High School	Playoff	23-24
Vista del Lago (Folsom, CA)	Vista del Lago High School	Playoff	23-24
Granite Bay (Granite Bay, CA)	Rio Americano High School	No	24-25
Jesuit (Carmichael, CA)	Jesuit High School	No	24-25
McClatchy (Sacramento, CA)	McClatchy High School	No	24-25
Vista del Lago (Folsom, CA)	Vista del Lago High School	Yes	24-25
Woodcreek (Roseville, CA)	Rio Americano High School	Yes	24-25
Bella Vista (Fair Oaks, CA)	Bella Vista High School	Yes	24-25
Foothill (Sacramento, CA)	Foothill High School	No	24-25
Ponderosa (Shingle Springs, CA)	El Camino High School	Yes	24-25
Inderkum (Sacramento, CA)	Inderkum High School	Yes	24-25
Christian Brothers (Sacramento, CA)	Rio Americano High School	Yes	24-25
Merced (Merced, CA)	Merced High School	Playoff	24-25
Granite Bay (Granite Bay, CA)	Granite Bay High School	No	25-26
Jesuit (Carmichael, CA)	El Camino High School	No	25-26
Del Campo (Fair Oaks, CA)	Del Campo High School	No	25-26
Cordova (Rancho Cordova, CA)	Cordova High School	No	25-26
Vista del Lago (Folsom, CA)	Rio Americano High School	Yes	25-26
Woodcreek (Roseville, CA)	Woodcreek High School	Yes	25-26
Bella Vista (Fair Oaks, CA)	Rio Americano High School	Yes	25-26
Ponderosa (Shingle Springs, CA)	Ponderosa High School	Yes	25-26
Inderkum (Sacramento, CA)	Rio Americano High School	Yes	25-26
Christian Brothers (Sacramento, CA)	Christian Brothers High School	Yes	25-26

Schedule data pulled from MaxPreps.com

Attachment D

TransCAD Logical Path Output Example

TransCAD Logical Path (Inderkum to El Camino)



