MEMORANDUM

Phillips Consulting Services
Fire Safe Planning

Date: November 11, 2025

To: Winn Communities

From: Ronald A. Phillips, Phillips Consulting Services

RE: **Creekside Village Specific Plan – Existing Evacuation Routes**

The following memorandum was prepared in response to concerns expressed regarding the adequacy of evacuation routes that serve the Creekside Village project and the surrounding communities.

BACKGROUND

Concerns have been raised regarding the adequacy of the existing evacuation routes available to serve the project and the surrounding communities in the event of a fire or emergency. Specifically, concerns about the capacity of Latrobe Road and intersections along Latrobe with the road potentially becoming a traffic jam. Included as attachments are memos prepared by T. Kear Transportation Planning & Management, Inc. and Phillips Consulting Services that provide additional information regarding evacuation concerns.

ANALYSIS

Wildfires in wildland-urban interface/intermix (WUI) can pose complex challenges for community evacuations due to dynamic conditions, infrequent occurrence, and numerous other variables. Master planned communities, such as Creekside Village, are designed to match local wildfire behavior, and follow current ignition-resistant building and landscaping standards, to help reduce the frequency and size of areas that require the issuance of evacuation orders by public safety officials. New development can also reduce the risk to adjacent communities by improving evacuation route circulation, increasing emergency vehicle access through a system of roads, and implementing mitigation measures along potential evacuation corridors to reduce the threat of a wildfire obstructing those transportation routes.

The approved Fire Safe Plan provides a detailed explanation of the evacuation routes proposed by the project. With the proposed 5 egress/EVA routes from the project site to the existing roadway infrastructure, the project adequately addresses evacuation from the proposed project. There are multiple evacuation routes in addition to Latrobe Road (north and south) that are available to the surrounding communities. These include Carson Crossing Drive to White Rock Road to the west as well as connections into the business park that provide parallel capacity to Latrobe Road such as Robert J. Mathews Pkwy, Golden Foothill Pkwy, and Windfield Way. To the east Blackstone Pkwy is an evacuation route that also runs parallel to Latrobe Road with connection to White Rock Road via Valley View Pkwy.

In addition to existing capacity, evacuation orders are made by authorized officials based on decision criteria that will be used in determining the size and scope of the evacuation and when each community will be evacuated. This typically includes a phased evacuation[i] with specific routes identified for

communities to avoid any potential traffic issues. As Creekside Village is located within a suburban area the **Wildfire Required Safe Egress Time** (WRSET), the time necessary for evacuees to reach a safe location, along with the phased evacuation concept used by local public safety officials, significantly reduces the impact of the project on existing evacuation routes as compared to other high fire hazard areas. Based on these facts the risk of wildfire impacting existing evacuation routes will be reduced and not limit, adversely change, or negatively impact routes utilized by the community for evacuation in an emergency.

CONCLUSION

In my opinion the proposed project improves the connectivity to evacuation routes for the existing communities surrounding the project site. The proposed project's Fire Safe Plan has been reviewed by El Dorado County Office of Emergency Services, and has been approved by both Cal Fire and the El Dorado Hills Fire Department for consistency with the El Dorado County General Plan, and State and Local fire safe regulations regarding emergency vehicle access and civilian evacuation routes.

Please do not hesitate to reach out to me regarding this memo.

Yours Truly:

Ronald A. Phillips
Phillips Consulting Services

[i] The term "phased evacuation" refers to an evacuation methodology that relies on a sequence of smaller steps that are intended to synchronize the movement of civilians leaving the area with the road network capacity in the community to reduce or eliminate gridlock and bottlenecks.

MEMORANDUM

Phillips Consulting Services
Fire Safe Planning

Date: September 9, 2025

To: Winn Ridge Investments, LLC

From: Ronald A. Phillips, Phillips Consulting Services

RE: **Creekside Village Specific Plan, Draft Environmental Impact Report, GPA20-0001, Z20-0005, TM20-0002; Response to Comments from El Dorado Hills Area Planning Advisory Committee dated August 18, 2025.**

Background:

On August 18, 2025, the El Dorado Hills Area Planning Advisory Committee (EDH APAC) provided public comments on the Creekside Village Specific Plan Draft Environmental Impact Report (DEIR). Four of the public comments (G87, G-103, G-104, and G-105) received from EDH APAC pertain to subjects described in the *Creekside Village Fire Safe Plan (dated April 27, 2025)*. Enclosed are the responses from Phillips Consulting Services to those four public comments.

G-87 Emergency Access and Safety

Concern: *The EIR finds that emergency access will be adequate and mentions a new emergency access road that will be gated and used as a bike path. This is a critical safety feature.*

Comment: *EDH APAC considers emergency access and safety to be of paramount importance. We support the EIR's conclusion that the project will have adequate emergency access. We ask for a more detailed plan for the new emergency access road, including its specific location, how it will be gated, and the protocol for its use during an emergency. This information is crucial for ensuring the safety of all residents, both new and existing.*

Response: Emergency vehicle access is an important element of the FSP for the Project area. Emergency vehicle access can be described as the means (e.g., roads, bike paths, trails, etc.) by which firefighters can enter an area to quickly mitigate a wildfire incident before it spreads to adjacent properties and critical assets / infrastructure at risk. Joint efforts to develop and maintain ingress/egress for local

evacuation and fire suppression response are required to ensure that both public and firefighter safety is provided.

The main entry/exit point and emergency response routes to the Project will be Royal Oaks Drive, identified in Figure 1 as being Emergency Vehicle Access (EVA) Point B, off of Latrobe Road. Emergency vehicle access is also available from Latrobe Road via Access Points A and C. Access Point D is an EVA only road connection located on the west side of the Project that serves as ingress/egress from the Heritage at Carson Creek community. Access Point E is an EVA only road connection located on the north side of the Project via a private road connection near 5220 Robert J Mathews Drive.

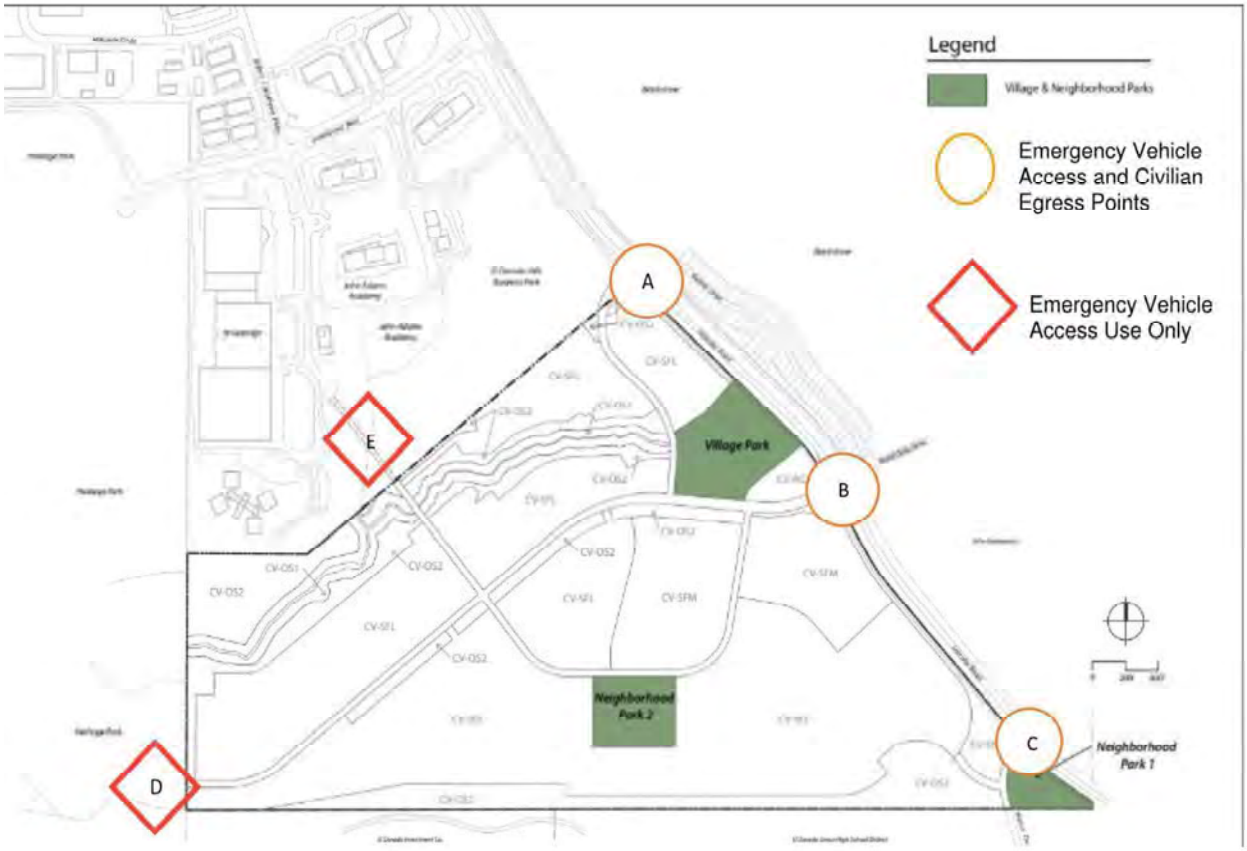

Figure 1: Creekside Village Emergency Vehicle Access/Civilian Egress Routes

The EVA connection (EVA E) to the El Dorado Hills Business Park is required by Title 14, Section 1273.08 (Dead-End Roads) of California Code of Regulations Title 14, Division 1.5, Chapter 7, Subchapter 2 (State Minimum Fire Safe Regulations). The EVA will provide an access connection for emergency vehicles, and will also will serve as a Class I bike path into the El Dorado Hills Business Park. Access to this roadway will be limited to emergency vehicles, bicycles, and pedestrians. No automobile traffic

except during a potential evacuation would be allowed to use this roadway. The roadway is proposed to be 28-feet wide with 20-feet of paving. As described in the Fire Safe Plan the proposed roadway would limit vehicular access with knock down bollards, security gate with a Knox box, or another approved mechanism approved by the El Dorado Hills Fire Department. The authority to utilize the emergency vehicle access road during an evacuation will be determined by Law Enforcement and Fire Department.

G-103 Evacuation and Emergency Response

Concern: *The EIR states that the project will have a "less than significant" impact on emergency response and evacuation plans. This is a crucial conclusion that relies on the effectiveness of new access points and Latrobe Road as an evacuation route. However, it also acknowledges that the County does not publicly distribute evacuation plans.*

Comment: *EDH APAC is deeply concerned with the finding that the project will not impair an adopted emergency response or evacuation plan, especially since the County's plans are not publicly available. The EIR's conclusion relies on a qualitative assessment and an assumption that Latrobe Road will be a sufficient evacuation route for all new residents. We request a quantitative analysis of evacuation times for the new community and the surrounding area under a worst-case wildfire scenario. This analysis should consider the traffic from the project, the existing Blackstone, and Heritage communities, other surrounding developments, and the Eastridge development, currently under construction. A "less than significant" finding is difficult to accept without this critical data.*

Response: As described in the National Institute for Science and Technology (NIST) WUI Fire Evacuation and Sheltering Considerations[1] document, "*the decision to order evacuations must be made by authorized officials in the face of complexities and uncertainties in evacuations and fire spread. Decisions are commonly based on certain fire behavior or weather events or extent of fire progression,*

[1] Maranghides, A. and Link, E. (2025), WUI Fire Evacuation and Sheltering Considerations: Assessment, Planning, and Execution (ESCAPE), Technical Note (NIST TN), National Institute of Standards and Technology, Gaithersburg, MD, [online], https://doi.org/10.6028/NIST.TN.2262r1, https://tsapps.nist.gov/publication/get_pdf.cfm?pub_id=959690 (Accessed September 10, 2025)

often linked to physical landmarks to aid in identification. When situation-specific criteria are met, related response actions or evacuations are initiated. Standardized guidance for determining such decision criteria is limited or non-existent; it is often left to the experience and judgment of the incident commander or other emergency official to consider required evacuation time against estimates of fire arrival time." While simulation-based dynamic traffic assignment evacuation models can assist both emergency service personnel and the public in gaining insights into potential evacuation strategies for a community, the use of evacuation modeling will not replace the decision criteria that will be used by the incident commander in determining the size or scope of the evacuation. Neither the State of California, nor the County of El Dorado, have established criteria as to when evacuation modeling will be required, or how model simulations are to be developed, for new development projects.

The Project is provided with three routes of egress during a wildfire evacuation, and two additional Emergency Vehicle Access (EVA) routes that can be used by emergency responders and civilian evacuation from outside the Project to access off-site evacuation corridors. Based on the multiple potential evacuation routes in different directions identified below, road capacity, limited project size, and mitigation measures proposed, the risk of a wildfire impacting existing evacuation routes serving the community will be reduced, and the project will not block, limit, adversely change, or negatively impact routes utilized by the community for evacuation. Evacuation options from the project site include:

- **From Access Points A, B, and C**: Residents may evacuate to Latrobe Road and travel either north on Latrobe Road to White Rock Road or U.S. Highway 50 both east west connectors that allow for evacuation.

- **From Access Point D**: During an emergency Public Safety Officials can utilize the access connection from the Heritage Master Plan Community to access the Project. The Heritage Master Plan Community has existing and proposed connection points into the El Dorado Hills Business Park and to Carson Crossing Drive that connects to White Rock Road.

- **From Access Point E**: During an emergency Public Safety Officials can utilize the bicycle and pedestrian connection into the El Dorado Hills Business Park as a vehicular evacuation route to the north of the project that connects to Robert J Mathews Parkway which has multiple connection points to Latrobe Road and to White Rock Road that can be used for evacuation.

In my professional opinion the qualitative analysis is adequate to determine that project will have a *less than significant impact* on the evacuation routes available in the El Dorado Hills area.

G-104 Evacuation and Emergency Response

Concern: *The EIR mentions five emergency access points, including one to the adjacent business park.*

Comment: *The inclusion of multiple emergency access points is a positive feature. We request more specific details on the legal status and guaranteed long-term maintenance of these access points, particularly the one connecting to the business park. EDH APAC needs to be assured that these access points will be functional and accessible to fire and emergency services at all times.*

Response: These emergency access points identified in the Fire Safe Plan will be fully accessible to emergency services. Some of the proposed roadways will be public roadways and others are proposed to be private with gates. All gated access points are required to be approved by the El Dorado Hills Fire Department as part of the improvement plan review for the project to ensure all points of access are functional and accessible to law enforcement and emergency services. The Fire Safe Plan (p.60, Section 7.3 (j) - Fire Protection Plan Mitigation Strategies) states: "A Homeowners Association (HOA), or other acceptable entity, shall be responsible for maintaining all private emergency vehicle access roads and wildfire fuel reduction zone provisions described in Chapter 6. Reliable on-going sources of funding shall be established acceptable to EDHFD prior to the recording of the final map for the project." The HOA or other established entity will be required to comply with the Fire Safe Plan for the life of the project, including maintenance of the EVA to the Business Park.

G-105 Fire Safe Plan and Long-Term Maintenance

Concern: *A major component of the mitigation strategy is the Fire Safe Plan (FSP), which outlines specific requirements for defensible space, fuel modification, and building standards. The EIR states that the HOA will be responsible for enforcing and maintaining many of these measures.*

Comment: *EDH APAC supports the comprehensive and detailed requirements of the Fire Safe Plan (WF-2). However, the long-term effectiveness of this plan hinges on the ability of the homeowners' association (HOA) to enforce and fund these requirements in perpetuity. We request that the final project documents include a legal mechanism, such as a permanent maintenance district, Zone of Benefit, CSA, or a dedicated funding source, that ensures the continued enforcement of the FSP's provisions, particularly for the Wildfire Fuel Reduction Zone (WFRZ) and defensible space, even if the HOA fails to do so. This is a matter of public safety that should not be left to chance.*

Response: There is language in the Fire Safe Plan (p.60, Section 7.3 (j) -Fire Protection Plan Mitigation Strategies) pertaining to the obligation being the landowners and that being transferred to the HOA/CSD. Reliable on-going sources of funding shall be established and acceptable to EDHFD prior to the recording of the final map for the project.

Please do not hesitate to reach out to me regarding the comments I have provided for the Creekside Village Specific Plan DEIR should there be any questions.

Yours Truly:

Ronald A. Phillips
Phillips Consulting Services

T.KEAR
TRANSPORTATION PLANNING
& MANAGEMENT, INC.

Memorandum

TO: Winn Ridge Investments, LLC

FROM: Tom Kear, PhD, PE

Date: September 5, 2025

RE: Response to August 18, 2025, APAC transportation related comments on Creekside Village DEIR.

INTRODUCTION

This memorandum responds to Transportation related comments on the Creekside Village Specific Plan Draft Environmental Impact Report (DEIR). It is one of two memorandums that TKTPM has drafted in response to comments received on the DEIR. The El Dorado Hills Area Planning Advisory Committee (EDH APAC) provided comments dated August 18, 2025. El Dorado County's environmental consultant (Dudek) numbered EDH APAC's comments, and the applicant requested T.Kear Transportation Planning and Management (TKTPM) provide responses and/or input regarding five of those numbered questions.

This memorandum quotes the specific questions and or comment, then provides the TKTPM response. Dudek's number scheme for comments assigns a letter representing the source of the comment and then number comments. In this case TKTPM is responding to comments **G-6**, **G-8**, **G-13**, **G-85** and **G-103**..

Comment G-6

"Concern: The document mentions off-site infrastructure improvements but lacks specific details on which roadways will be improved and what the timeline and funding sources for these improvements are.

Comment: The plan mentions off-site roadway improvements, but it lacks specific details. EDH APAC would like to see a more detailed list of the proposed off-site roadway improvements, including specific locations, scope of work, and a timeline for completion. Additionally, a clear explanation of the funding mechanisms and responsible parties for these improvements is necessary to ensure they are completed in a timely manner and do not create unforeseen burdens on the County or existing residents. Allowing offsite improvements to fall to the twenty-year horizon of the County's CIP program is essentially planning NOT to implement these off-site roadway improvements. The improvements should at least be created concurrently with the buildout of the project."

TKTPM Response G-6

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The traffic studies for the proposed Project and Reduced Impact Alternative (RIA) analyzing level of service are not included in the Draft EIR because level of service is no longer the metric by which traffic impacts are analyzed for CEQA. Those level of service studies, however, will be included in the public agenda item and reviewed for General Plan consistency, including consistency with Policy TC-Xf, by both the Planning Commission and Board of Supervisors. Again, while not relevant for CEQA, it is worth noting for informational purposes that Policy TC-Xf requires the county to either (1) condition the project to construct all road improvements necessary to address a project's fair-share of the any resulting level-of-service deficiency, or (2) ensure the construction of the necessary road improvements are included in the County's 10-year CIP.

Comment G-8

"Concern: Objective 2 states the project will "allow for development of land uses more compatible with the surrounding residential communities." This is a key objective, but the **Draft EIR** doesn't provide a detailed analysis of this compatibility, particularly with respect to traffic, noise, and visual impacts on adjacent neighborhoods.

Comment: EDH APAC supports the objective of creating a community compatible with its surroundings. To ensure this, we request a more specific analysis of how the project's proposed land uses and densities, particularly under the different alternatives, will be compatible with the adjacent communities to the east and west. This analysis should include detailed modeling of traffic and noise impacts on existing neighborhood streets."

TKTPM Response G-8

The Project's land use and densities were proposed by the applicant to match existing surrounding communities in the Carson Creek Specific Plan to the west and the Valley View Specific Plan to the east. The travel demand model used the existing traffic patterns from the Blackstone community to the west with similar household sizes and roadway patterns to project future VMT associated with the Project. Anticipated Project traffic and external traffic from the travel demand model was then used as a starting point to analyze the noise impacts on future internal roadways and sensitive noise receptors adjacent to the Project. Both the proposed Project and Reduced Impact Alternative had traffic impact studies completed with detailed modeling and the noise study (completed by Bollard Acoustical Consultants, Inc.) considers impacts from Project noise on the surrounding residential communities.

Comment G-13

"Concern: While the RIA significantly reduces the total population compared to the proposed project, the calculation is based on a 40% reduction for age-restricted units. This is a crucial assumption. The "Areas of Controversy" section lists traffic and school capacity as key issues, and both are directly tied to population.

Comment: EDH APAC acknowledges that the RIA's population of approximately 997 residents is a significant reduction from the proposed project. However, this calculation is based on an assumed 40% reduction for age-restricted units. We request clarification on the data or studies supporting this specific 40% reduction, as a different assumption could result in a higher population and greater impacts on traffic and schools, two of the stated areas of controversy."

TKTPM Response G-13

Studies show that there is a 40% reduction in population for an Age-Restricted units versus a conventional unit. This has a significant reduction in impacts on traffic and services. In addition, the Reduced Impact Alternative has an overall 17% reduction in total number of units (918 to 763). The Traffic Impact Analysis identifies there is a 55% reduction in trips per household for an age-restricted unit compared to a conventional home. This trip generation number is from the Institute of Traffic Engineers (ITE). The Draft EIR explains the reasoning for the 40% reduction for age restricted units in Sections 3.9, Population and Housing (p. 3.9-17), 3.11, Public Services (p. 3.11-17), 3.12, Transportation (p. 3.12-23), and 3.14, Utilities and Service Systems (p. 3.14-17). As detailed therein, the 40% was calculated based on the residency restrictions in state law for active adult communities and the determination by numerous public agencies justifying the adoption of reduced impact fees for age-restricted dwelling units due to the determinations of those agencies that there is a reduction in the number of persons per household and corresponding reduction in the impacts and needs resulting from the potential future residents.

As additional evidence that reduced ITE trip generation rates utilized for age restricted housing are applicable to the Sacramento region, a memorandum documenting a prior analysis comparing observed age restricted housing trip generation to published ITE data is attached. That analysis concluded that observed trip generation for age restricted housing was lower than the published ITE rate for age restricted housing and at least 70% lower than the published rates for traditional single-family housing.

Comment G-85

"Concern: The EIR explicitly states that a "project's effect on automobile delay and traffic LOS is not considered a significant environmental impact" under CEQA. This means the EIR does not have to analyze the everyday traffic congestion that residents will experience. The TIS, however, does contain this analysis for informational purposes. (…)

Comment: The EIR's conclusion that the project will not substantially increase hazards relies on the assumption that necessary roadway improvements will be made. We request a clear, binding commitment from the applicant and the County on the **specific timeline and funding mechanisms for all off-site roadway and intersection improvements**. This is crucial to ensure that new residents can access the community safely and that existing residents do not experience a decline in traffic flow before these improvements are made. As mentioned earlier, assuming that improvements can be realized via the auspices of the County's twenty-year CIP horizon will result in most of the improvements not being constructed. Roadway improvements at a minimum must be concurrent with the buildout of the project."

TKTPM Response G-85

The Project has an approved Traffic Impact Study that identifies the traffic improvements needed to mitigate impacts to traffic from the Project. As part of the Project's conditions of approval the County Department of Transportation (DOT) will condition the Project with specific traffic improvements to mitigate the traffic impacts generated by the implementation of the Project. These conditions will include the specific timing and funding mechanisms for which the improvement will be constructed. The traffic study analyzing the non-CEQA issue of level of service identifies when each improvement is needed based on traffic modeling.

Comment G-103

"Concern: The EIR states that the project will have a "less than significant" impact on emergency response and evacuation plans. This is a crucial conclusion that relies on the effectiveness of new access points and Latrobe Road as an evacuation route. However, it also acknowledges that the County does not publicly distribute evacuation plans.

Comment: EDH APAC is deeply concerned with the finding that the project will not impair an adopted emergency response or evacuation plan, especially since the County's plans are not publicly available. The EIR's conclusion relies on a qualitative assessment and an assumption that Latrobe Road will be a sufficient evacuation route for all new residents. We request a **quantitative analysis of evacuation times** for the new community and the surrounding area under a worst-case wildfire scenario. This analysis should consider the traffic from the project, the existing Blackstone, and Heritage communities, other surrounding developments, and the Eastridge development, currently under construction. A "less than significant" finding is difficult to accept without this critical data."

TKTPM Response G-103

The proposed Project and RIA development are in a State Responsibility Area (SRA) with a moderate fire hazard severity risk. A high fire hazard severity risk area overlays only the extreme southeast corner of a park lot, located east and south of Wetsel-Oviatt Rd and west of Latrobe Road. The Attorney General's *Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects Under the California Environmental Quality Act* provides:

"For projects located in high wildfire risk areas that present an increased risk of ignition and/or evacuation impacts, evacuation modeling and planning should be considered and developed at the time of project review and approval—when there is greater flexibility to modify a project's design, density, siting, and configuration to address wildfire considerations—rather than deferred to a later stage of the development process."[1] This same recommendation for a quantitative analysis is not made for developments within moderate severity fire risk zones.

Fire hazard severity zones account for probability of an area burning and expected fire behavior under extreme fuel and weather conditions, including the spread of embers. CalFire uses a hierarchical 3-tier system to classify fire hazard (moderate, high, and very high). Moderate fire risk hazard zones, such as where the proposed Project and RIA are situated, have the lowest probability of burning, and are anticipated to have less extreme fire behavior based on fire history, fuel supply, and topography, amongst other factors. In moderate fire hazard severity risk zones, projects generally consult with local fire officials regarding the need for analysis and ensure that adequate emergency access to the project is provided. The proposed Project and RIA is not likely to impact on wildfire evacuations because the proposed Project and RIA are in a moderate fire hazard severity zone, no extenuating circumstances were identified during consultation between the Fire Safe Plan consultant (Philips Consulting Services) and Fire officials, and, as detailed in the Fire Safe Plan, there are multiple evacuation routes. As stated in the Fire Safe Plan, neither the project nor the RIA "increase the wildfire risk or adversely impact the evacuation routes available to the community." The Fire Safe Plan also indicates that County OES evaluated any potential impact on the existing evacuation routes. All of these factors together demonstrate qualitatively that the project will have a less than significant impact on evacuations and, consistent with the Attorney General Guidance, a quantitative modeling analysis is not necessary to support this conclusion.

The requirement, and the desire, for fire evacuation analysis is relatively new, coming to the forefront after the disastrous Camp Fire, which burnt Paradise, California, in 2018. There are no standardized procedures or tools to conduct those analyses. The current policy focuses the effort required to conduct and review quantitative evacuation analyses on the projects where it is most critical. It is appropriate to let those methods and tools mature further before they are applied in cases where their need is not considered to be necessary by CalFire. In addition, studies report that development of vacant land slows wildfire progression. The green spaces created by development can protect adjacent communities and allow additional time to evacuate.

The Fire Safe Plan for the proposed Project and RIA includes descriptions of emergency access and fire suppression strategies to qualitatively address the commenter's concerns. Moreover, "CEQA does not require a lead agency to conduct every recommended test and perform all

[1] Bonta, Rob (2022) Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects Under the California Environmental Quality Act, available online at https://oag.ca.gov/system/files/attachments/press-docs/Wildfire%20guidance%20final%20%283%29.pdf.

> recommended research to evaluate the impacts of a proposed project. The fact that additional studies might be helpful does not mean that they are required." (*Association of Irritated Residents v. County of Madera* (2003) 107 Cal.App.4th 1383, 1396. "CEQA does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commentors." (Guidelines, § 15204, subd. (a).)

TKTPM appreciates the effort that commenters put into reviewing the Environmental and Transportation Analysis for the proposed Project and the RIA.

ATTACHMENT:

2016 “Destinations Project Active Adult Trip Generation Study”

T.KEAR
TRANSPORTATION PLANNING
& MANAGEMENT, INC.

Memorandum

TO: Sean MacDiarmid, Lennar Corporation

FROM: Tom Kear, PhD, PE

Date: November 1, 2016

RE: Destinations Project Active Adult Trip Generation Study

Introduction and Findings

The purpose of this study is to compare local trip generation rates for Destinations at Vineyard Point Village (Destinations) to those published by the Institute of Transportation Engineers (ITE) for ITE land use #251 "senior adult housing – detached". ITE land use 251 is used to characterize the trip-making characteristics of age restricted housing such as Destinations. Trip generation is also compared to that of ITE land use 210 "single-family detached housing" which would have been used in the North Vineyard Station Specific Plan (NVSSP) Draft Environmental Impact Report.

One of the first requirements of any trip generation study is to establish a hypotheses identifying why national data is not appropriate. Analysts often perceive that their area is unique, but it has been the experience within the traffic engineering community that differences in trip generation between sites often have more to do with the site context and setting than with geography. There are reasons to believe that the national data for ITE land use #251 may not be ideal for the Sacramento Region. The published ITE rates are based on an a very small sample of ten studies; and eight out of those ten of the studies were conducted in snow-belt states.

When developing custom trip generation rates, typically a minimum of 3 to 5 locations are studied[1]. For this initial study, TKTPM performed a preliminary assessment based on just one location to evaluate if local trip generation rates appear to differ from the national rates.

Study Location:

Traffic counts were conducted for Destinations at Vineyard Point Village (Destinations). Destinations is a master planned, gated, solar community located in Sacramento County, California, 13 miles from downtown Sacramento. The project is situated on the west side of Bradshaw Road, between Alder Creek Drive and Ballinger Drive. A site plan (**Figure 1**) and areal image (**Figure 2**) are attached.

Destinations includes 177[2] detached single family, age restricted, dwelling units with a density of about 8.6 dwelling units (DUs) per acre, plus a club house with an exercise room, entertainment

[1] ITE (2014) Trip Generation Handbook, 3rd. Edition, Washington DC.
[2] The site plan includes 178 residential lots, one of which remains as parking for the recreation center.

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areas, and pool, for the residents use. Homes are two and three bedroom designs with attached garages that sold in the low to mid two hundred-thousand-dollar price range.

Traffic for the Destinations community was originally analyzed as part of the North Vineyard Station Specific Plan (NVSSP) which was which adopted on November 4, 1998. The NVSSP assumed the area where Destinations is located would be developed as single family residential 4-7 DU/Ac (RD-7) and medium density residential 7-12 DU/Ac (RD-12). A lot map for Destinations (Known as the Village F) was incorporated into the Vineyard Point Amended Vesting Tentative Subdivision Map, Special Development Permit, Exception, and Affordable Housing Plan project approved by the County Board of Supervisors on February 26, 2007.

A use permit for the clubhouse and special development permit to modify setback requirements and to allow the project to be a gated community was approved by the Design Review Advisory Committee on November 11, 2010. The staff report for this action noted that the project was reviewed by the Sacramento County Department of Transportation (SacDOT), which indicated that due to a reduction in the number of lots proposed from the previously approved map, the number of new daily trips and number of new trips during the PM peak-hour would be reduced. Impacts related to access, circulation, and traffic from the Destinations project are considered less than significant.

Trip Generation

Traffic counts

TKTPM conducted directional traffic counts at the two driveways to the Destinations project (driveway access to Ballinger Drive and driveway access to Alder Creek Drive). An existing count was used for Bradshaw Road, which is necessary to identify the peak-hours of adjacent street traffic.

Traffic Counts are typically conducted mid-week (Tuesday-Thursday) during dry weather. Due to time constraints, driveway counts were conducted on: Monday October 24, 2016; Tuesday October 25, 2016, and Wednesday October 26, 2016. There was light precipitation on Monday evening and Tuesday morning. The Bradshaw Road count was conducted on Thursday March 17, 2016. The AM peak-hour of traffic on Bradshaw Road occurred from 7:15 to 8:15 AM, and the PM peak-hour occurred from 4:30 to 5:30 PM.

Table 1.Observed Trip Generation Rates at Destinations

	Range of Observed Driveway Trip Rates	Average of Observed Driveway Trip Rate
Daily Rate	2.62 - 3.1	2.91
AM Peak-Hour of Adjacent Street	0.15 - 0.2	0.17
AM Peak-Hour of Generator	0.21 - 0.27	0.24
PM Peak-Hour of Adjacent Street	0.21 - 0.27	0.24
PM Peak-Hour of Generator	0.27 - 0.32	0.29

ITE Land Use 251 Trip Generation

Senior adult housing consists of detached independent living developments including retirement communities, age-restricted housing and active adult communities. These developments may include amenities such as golf courses, swimming pools, 24-hour security, transportation and common recreational facilities. However, they lack centralized dining and on-site health facilities. Detached senior adult housing communities may or may not be gated. Residents in these communities are typically active (requiring little to no medical supervision). The percentage of retired residents varies by development.

According to the ITE Trip generation manual, caution should be used when applying trip rates for this land use as it may contain a wide variety of studies ranging from communities with very active, working residents to communities with older, retired residents. The sites were surveyed in the 1980s, the 1990s and the 2000s in California (one study), Florida (one study), New Hampshire (one study), New Jersey (four studies), Pennsylvania (two studies) and Canada (one study). The single study conducted in California was performed in Camarillo (Ventura County), more than 25 years ago.

Trip Rates published by ITE are shown in **Table 2**. The peak hour of the generator typically did not coincide with the peak hour of the adjacent street traffic. The AM peak-hour of the generator typically ranged from 7:00 AM to noon and the PM peak-hour of the generator typically ranged from 1:00 PM to 6:00 PM. Note that ITE publishes both an average trip rate, as well as an equation to estimate trip generation as a function of one of several characteristics of the development, typically the number of dwelling units when looking as residential projects. Both the average and equation based trip generation rates are reported in **Table 2**.

Table 2. ITE Land Use #251 "Senior Adult Housing – Detached" Trip Generation per Dwelling Unit

	Range of Trip Rates in ITE Trip Generation Manual	Standard Deviation	Average Trip Rate	Equation Trip Rate (for 177 DUs)
Daily Rate	2.90 - 5.70	2.04	3.68	4.44
AM Peak-Hour of Adjacent Street	0.13 - 0.84	0.09	0.22	0.34
AM Peak-Hour of Generator	0.21 - 0.90	0.13	0.29	0.36
PM Peak-Hour of Adjacent Street	0.17 - 0.95	0.11	0.27	0.39
PM Peak-Hour of Generator	0.20 - 1.01	0.19	0.34	0.48

ITE Land Use 210 Trip Generation

Single-family detached housing includes all single-family detached homes on individual lots. A typical site surveyed is a suburban subdivision.

The number of vehicles and residents had a high correlation with average weekday vehicle trip ends. The use of these variables was limited, however, because the number of vehicles and residents was often difficult to obtain or predict. The number of dwelling units was generally used as the independent variable of choice because it was usually readily available, easy to project and had a high correlation with average weekday vehicle trip ends.

The sites were surveyed between the late 1960s and the 2000s throughout the United States and Canada. Because data from a wide variety of units with different sizes, price ranges, locations and ages was included, there was a wide variation in trips generated within this category. Other factors, such as geographic location and type of adjacent and nearby development, may also have had an effect on the site trip generation.

Single-family detached units had the highest trip generation rate per dwelling unit of all residential uses because they were the largest units in size and had more residents and more vehicles per unit than other residential land uses; they were generally located farther away from shopping centers, employment areas and other trip attractors than other residential land uses; and they generally had fewer alternative modes of transportation available because they were typically not as concentrated as other residential land uses.

Trip rates published by ITE are shown in **Table 3**. The peak-hour of the generator typically coincided with the peak-hour of the adjacent street traffic. Both the average and equation based trip generation rates are reported in **Table 3**.

Table 3. ITE Land Use #210 "Single-Family Detached Housing" Trip Generation per Dwelling Unit

	Range of Trip Rates in ITE Trip Generation Manual	Standard Deviation	Average Trip Rate	Equation Trip Rate (for177 DUs)
Daily Rate	4.31 – 21.85	2.05	9.52	10.03
AM Peak-Hour of Adjacent Street	0.33 – 2.27	0.27	0.75	0.76
AM Peak-Hour of Generator	0.33 – 2.27	0.26	.77	0.77
PM Peak-Hour of Adjacent Street	0.42 – 2.98	0.31	1.00	0.99
PM Peak-Hour of Generator	0.42 – 2.98	0.30	1.02	0.88

Comparison of Observed Trip Rates to ITE Land Use 251 Trip Rates

Table 4 compares the observed trip rates at the Destinations community to those published for ITE Land Use (LU) #251 and LU #210. Observed trip rates were slightly lower (but relatively close to) the ITE #251 trip rates. Compared to ITE #210, observed trip rates were only 20% to 34% of the daily and peak-hour trip rates.

The relatively large standard deviations of the published ITE rates makes statistically significant differences impractical to consider between the Destinations traffic counts and those of ITE LU #251. Anecdotally, the observed Destinations data is very similar to published data for ITE U #251.

The difference between the observed Destinations trip rates and published trip rates for daily traffic and the peak-hours of adjacent street traffic from ITE LU 210 are statically significant at the 95% confidence level.

Table 4.Trip Rate Comparison of Destinations to ITE Land Use 251 per Dwelling Unit

	LU #251 Average Trip Rate	LU #251 Equation Trip Rate (for 177 DUs)	LU #210 Average Trip Rate	LU #210 Equation Trip Rate (for 177 DUs)	Average of Observed Driveway Trip Rate
Daily Rate	3.68	4.44	9.52	10.03	2.91
AM Peak-Hour of Adjacent Street	0.22	0.34	0.75	0.76	0.17
AM Peak-Hour of Generator	0.29	0.36	.77	0.77	0.24
PM Peak-Hour of Adjacent Street	0.27	0.39	1.00	0.99	0.24
PM Peak-Hour of Generator	0.34	0.48	1.02	0.88	0.29

Conclusions and Recommendations

The Destinations project was originally analyzed as single-family housing in the North Vineyard Station Specific Plan Draft Environmental Impact Report (DEIR), which would have assumed non-age restricted housing consistent with the Specific Plan. Actual daily and peak-hour trip generation from the project is considerably lower than the ITE LU #210 trip generation rates that would have been used in the DEIR:

- Daily trip generation from Destinations was observed to be about 30% of the ITE LU #210 daily rate.
- AM peak-hour trip generation from Destinations was observed to be about 23% of that of ITE LU #210 during the peak-hour of adjacent street traffic.
- PM peak-hour trip generation from Destinations was observed to be about 24% of that of ITE LU #210 during the peak-hour of adjacent street traffic.

These differences are statistically significant at the 95th percent confidence level.

Within the Sacramento Region ITE LU #251 “senior adult housing – detached” appears valid for application to age restricted communities with similar characteristics to the Destinations at Vineyard Point project. Observed trip generation appears to be about two-thirds of the published ITE LU #251 rates, however precipitation on Tuesday likely limited trip generation.

Attachments

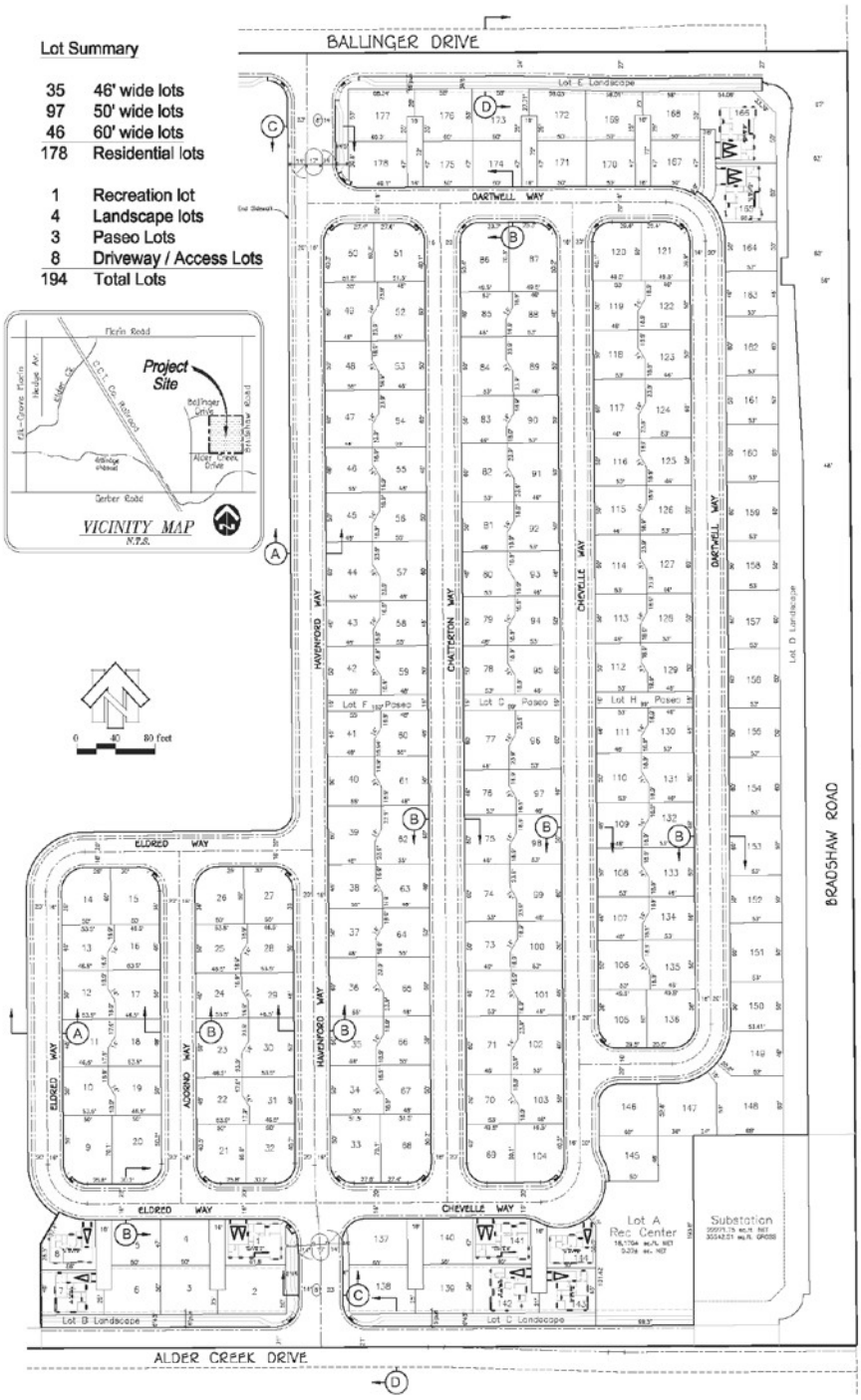

Figure 1. Site Plan for Destinations/Heritage Oaks Active Adult Community

Figure 2. Aerial View of Destinations/Heritage Oaks Active Adult Community

Prepared by NDS/ATD

VOLUME

Ballinger Dr & North Driveway

Day: Monday
Date: 10/24/2016

City: Sacramento
Project #: 16-07797-002

DAILY TOTALS	OUT	IN	Total
	118	126	244

AM Period	OUT		IN		TOTAL		PM Period	OUT		IN		TOTAL	
00:00	0		0		0		12:00	6		1		7	
00:15	0		0		0		12:15	0		1		1	
00:30	0		0		0		12:30	0		3		3	
00:45	0		0		0		12:45	5	11	4	9	9	20
01:00	0		0		0		13:00	1		3		4	
01:15	0		0		0		13:15	1		3		4	
01:30	0		0		0		13:30	0		2		2	
01:45	0		0		0		13:45	2	4	1	9	3	13
02:00	0		0		0		14:00	2		1		3	
02:15	0		0		0		14:15	6		3		9	
02:30	0		0		0		14:30	1		1		2	
02:45	0		0		0		14:45	1	10	1	6	2	16
03:00	1		0		1		15:00	0		3		3	
03:15	0		0		0		15:15	1		1		2	
03:30	1		0		1		15:30	2		6		8	
03:45	0	2	0		0	2	15:45	2	5	5	15	7	20
04:00	0		0		0		16:00	1		5		6	
04:15	0		0		0		16:15	1		3		4	
04:30	1		1		2		16:30	0		3		3	
04:45	0	1	0	1	0	2	16:45	1	3	5	16	6	19
05:00	0		0		0		17:00	1		5		6	
05:15	1		0		1		17:15	2		4		6	
05:30	1		0		1		17:30	1		3		4	
05:45	3	5	0		3	5	17:45	1	5	2	14	3	19
06:00	3		0		3		18:00	0		8		8	
06:15	2		0		2		18:15	0		4		4	
06:30	0		0		0		18:30	0		5		5	
06:45	1	6	0		1	6	18:45	3	3	3	20	6	23
07:00	6		2		8		19:00	1		2		3	
07:15	6		0		6		19:15	3		3		6	
07:30	1		0		1		19:30	0		2		2	
07:45	3	16	0	2	3	18	19:45	1	5	1	8	2	13
08:00	2		1		3		20:00	0		0		0	
08:15	2		0		2		20:15	0		1		1	
08:30	5		0		5		20:30	0		0		0	
08:45	1	10	0	1	1	11	20:45	0		1	2	1	2
09:00	1		2		3		21:00	0		1		1	
09:15	4		1		5		21:15	2		1		3	
09:30	4		2		6		21:30	0		0		0	
09:45	3	12	1	6	4	18	21:45	1	3	1	3	2	6
10:00	4		3		7		22:00	0		0		0	
10:15	2		1		3		22:15	0		0		0	
10:30	5		2		7		22:30	1		0		1	
10:45	2	13	0	6	2	19	22:45	0	1	0		0	1
11:00	1		3		4		23:00	0		0		0	
11:15	1		1		2		23:15	0		0		0	
11:30	0		0		0		23:30	0		1		1	
11:45	1	3	3	7	4	10	23:45	0		0	1	0	1
TOTALS		68		23		91	TOTALS		50		103		153
SPLIT %		74.7%		25.3%		37.3%	SPLIT %		32.7%		67.3%		62.7%

DAILY TOTALS	OUT	IN	Total
	118	126	244

AM Peak Hour	07:00	11:45			09:15	PM Peak Hour	12:00	18:00			15:30
AM Pk Volume	16	8			22	PM Pk Volume	11	20			25
Pk Hr Factor	0.667	0.667			0.786	Pk Hr Factor	0.458	0.625			0.781
7 - 9 Volume	26	3	0	0	29	4 - 6 Volume	8	30	0	0	38
7 - 9 Peak Hour	07:00	07:00			07:00	4 - 6 Peak Hour	16:45	16:30			16:45
7 - 9 Pk Volume	16	2	0	0	18	4 - 6 Pk Volume	5	17	0	0	22
Pk Hr Factor	0.667	0.250	0.000	0.000	0.563	Pk Hr Factor	0.625	0.850	0.000	0.000	0.917

Prepared by NDS/ATD

VOLUME

Alder Creek Dr & South Driveway

Day: Monday
Date: 10/24/2016

City: Sacramento
Project #: 16-07797-001

DAILY TOTALS	IN	OUT	Total
	136	152	288

AM Period	IN		OUT		TOTAL		PM Period	IN		OUT		TOTAL	
00:00	0		0		0		12:00	2		4		6	
00:15	0		0		0		12:15	4		3		7	
00:30	0		0		0		12:30	4		4		8	
00:45	0		0		0		12:45	4	14	2	13	6	27
01:00	0		0		0		13:00	5		1		6	
01:15	0		0		0		13:15	4		4		8	
01:30	0		0		0		13:30	1		1		2	
01:45	0		0		0		13:45	1	11	0	6	1	17
02:00	0		0		0		14:00	2		5		7	
02:15	0		0		0		14:15	2		0		2	
02:30	0		0		0		14:30	2		3		5	
02:45	0		0		0		14:45	2	8	2	10	4	18
03:00	1		1		2		15:00	1		1		2	
03:15	0		0		0		15:15	5		0		5	
03:30	0		0		0		15:30	4		4		8	
03:45	0	1	0	1	0	2	15:45	4	14	2	7	6	21
04:00	0		0		0		16:00	3		0		3	
04:15	0		0		0		16:15	6		2		8	
04:30	0		0		0		16:30	4		0		4	
04:45	0		0		0		16:45	2	15	3	5	5	20
05:00	0		1		1		17:00	5		3		8	
05:15	0		0		0		17:15	5		1		6	
05:30	0		0		0		17:30	3		4		7	
05:45	0		0	1	0	1	17:45	2	15	1	9	3	24
06:00	0		3		3		18:00	0		2		2	
06:15	0		3		3		18:15	5		1		6	
06:30	1		3		4		18:30	2		1		3	
06:45	0	1	4	13	4	14	18:45	1	8	3	7	4	15
07:00	0		1		1		19:00	4		1		5	
07:15	1		4		5		19:15	1		1		2	
07:30	1		5		6		19:30	3		2		5	
07:45	0	2	5	15	5	17	19:45	0	8	2	6	2	14
08:00	0		1		1		20:00	1		0		1	
08:15	1		2		3		20:15	1		0		1	
08:30	1		6		7		20:30	1		1		2	
08:45	4	6	3	12	7	18	20:45	2	5	0	1	2	6
09:00	0		0		0		21:00	1		1		2	
09:15	2		4		6		21:15	1		0		1	
09:30	0		8		8		21:30	1		0		1	
09:45	3	5	4	16	7	21	21:45	0	3	0	1	0	4
10:00	2		2		4		22:00	0		0		0	
10:15	2		4		6		22:15	2		0		2	
10:30	3		1		4		22:30	0		1		1	
10:45	2	9	5	12	7	21	22:45	0	2	0	1	0	3
11:00	3		3		6		23:00	0		0		0	
11:15	2		7		9		23:15	0		0		0	
11:30	2		3		5		23:30	0		0		0	
11:45	2	9	3	16	5	25	23:45	0		0		0	
TOTALS		33		86		119	TOTALS		103		66		169
SPLIT %		27.7%		72.3%		41.3%	SPLIT %		60.9%		39.1%		58.7%

DAILY TOTALS	IN	OUT	Total
	136	152	288

AM Peak Hour	11:45	09:15			10:45	PM Peak Hour	12:15	12:00			12:30
AM Pk Volume	12	18			27	PM Pk Volume	17	13			28
Pk Hr Factor	0.750	0.563			0.750	Pk Hr Factor	0.850	0.813			0.875
7 - 9 Volume	8	27	0	0	35	4 - 6 Volume	30	14	0	0	44
7 - 9 Peak Hour	08:00	07:00			08:00	4 - 6 Peak Hour	16:15	16:45			16:45
7 - 9 Pk Volume	6	15	0	0	18	4 - 6 Pk Volume	17	11	0	0	26
Pk Hr Factor	0.375	0.750	0.000	0.000	0.643	Pk Hr Factor	0.708	0.688	0.000	0.000	0.813

Prepared by NDS/ATD

VOLUME

Ballinger Dr & North Driveway

Day: Tuesday
Date: 10/25/2016

City: Sacramento
Project #: 16-07797-002

DAILY TOTALS	OUT	IN	Total
	94	93	187

AM Period	OUT		IN		TOTAL		PM Period	OUT		IN		TOTAL	
00:00	0		0		0		12:00	1		3		4	
00:15	0		0		0		12:15	3		1		4	
00:30	0		0		0		12:30	1		3		4	
00:45	0		0		0		12:45	3	8	3	10	6	18
01:00	0		0		0		13:00	1		3		4	
01:15	0		0		0		13:15	0		1		1	
01:30	0		0		0		13:30	4		2		6	
01:45	0		0		0		13:45	1	6	0	6	1	12
02:00	0		0		0		14:00	1		4		5	
02:15	0		0		0		14:15	2		2		4	
02:30	0		0		0		14:30	1		1		2	
02:45	0		0		0		14:45	0	4	0	7	0	11
03:00	0		0		0		15:00	1		2		3	
03:15	0		0		0		15:15	0		1		1	
03:30	0		0		0		15:30	1		2		3	
03:45	1	1	0		1	1	15:45	0	2	2	7	2	9
04:00	0		0		0		16:00	1		2		3	
04:15	0		0		0		16:15	3		1		4	
04:30	1		0		1		16:30	1		7		8	
04:45	0	1	0		0	1	16:45	1	6	3	13	4	19
05:00	1		0		1		17:00	0		2		2	
05:15	1		0		1		17:15	0		2		2	
05:30	0		0		0		17:30	1		10		11	
05:45	1	3	0		1	3	17:45	1	2	1	15	2	17
06:00	2		0		2		18:00	1		5		6	
06:15	3		0		3		18:15	2		1		3	
06:30	4		1		5		18:30	0		1		1	
06:45	3	12	0	1	3	13	18:45	0	3	0	7	0	10
07:00	2		1		3		19:00	1		1		2	
07:15	5		0		5		19:15	0		0		0	
07:30	1		0		1		19:30	0		2		2	
07:45	1	9	0	1	1	10	19:45	0	1	0	3	0	4
08:00	4		2		6		20:00	0		0		0	
08:15	1		1		2		20:15	0		2		2	
08:30	2		0		2		20:30	0		0		0	
08:45	5	12	0	3	5	15	20:45	0		2	4	2	4
09:00	7		2		9		21:00	0		1		1	
09:15	0		0		0		21:15	0		1		1	
09:30	5		1		6		21:30	0		1		1	
09:45	1	13	0	3	1	16	21:45	0		0	3	0	3
10:00	1		0		1		22:00	1		0		1	
10:15	0		2		2		22:15	0		0		0	
10:30	3		4		7		22:30	0		0		0	
10:45	4	8	1	7	5	15	22:45	1	2	1	1	2	3
11:00	0		0		0		23:00	0		0		0	
11:15	1		0		1		23:15	0		0		0	
11:30	0		0		0		23:30	0		0		0	
11:45	0	1	2	2	2	3	23:45	0		0		0	
TOTALS		60		17		77	TOTALS		34		76		110
SPLIT %		77.9%		22.1%		41.2%	SPLIT %		30.9%		69.1%		58.8%

DAILY TOTALS	OUT	IN	Total
	94	93	187

AM Peak Hour	08:45	11:45			08:45	PM Peak Hour	12:00	17:15			17:30
AM Pk Volume	17	9			20	PM Pk Volume	8	18			22
Pk Hr Factor	0.607	0.750			0.556	Pk Hr Factor	0.667	0.450			0.500
7 - 9 Volume	21	4	0	0	25	4 - 6 Volume	8	28	0	0	36
7 - 9 Peak Hour	08:00	07:30			08:00	4 - 6 Peak Hour	16:00	16:45			16:00
7 - 9 Pk Volume	12	3	0	0	15	4 - 6 Pk Volume	6	17	0	0	19
Pk Hr Factor	0.600	0.375	0.000	0.000	0.625	Pk Hr Factor	0.500	0.425	0.000	0.000	0.594

Prepared by NDS/ATD

VOLUME

Alder Creek Dr & South Driveway

Day: Tuesday
Date: 10/25/2016

City: Sacramento
Project #: 16-07797-001

DAILY TOTALS	IN	OUT	Total
	137	139	276

AM Period	IN		OUT		TOTAL		PM Period	IN		OUT		TOTAL	
00:00	0		0		0		12:00	2		2		4	
00:15	0		0		0		12:15	3		2		5	
00:30	0		0		0		12:30	1		3		4	
00:45	0		0		0		12:45	1	7	2	9	3	16
01:00	0		0		0		13:00	2		3		5	
01:15	0		0		0		13:15	2		4		6	
01:30	0		0		0		13:30	4		5		9	
01:45	0		0		0		13:45	2	10	2	14	4	24
02:00	0		0		0		14:00	0		6		6	
02:15	0		0		0		14:15	3		3		6	
02:30	0		0		0		14:30	3		0		3	
02:45	1	1	1	1	2	2	14:45	0	6	2	11	2	17
03:00	0		0		0		15:00	6		1		7	
03:15	0		0		0		15:15	4		2		6	
03:30	1		0		1		15:30	1		1		2	
03:45	0	1	1	1	1	2	15:45	4	15	2	6	6	21
04:00	0		0		0		16:00	3		1		4	
04:15	0		0		0		16:15	2		0		2	
04:30	0		0		0		16:30	5		5		10	
04:45	0		0		0		16:45	5	15	3	9	8	24
05:00	0		1		1		17:00	5		0		5	
05:15	0		0		0		17:15	5		4		9	
05:30	0		0		0		17:30	2		2		4	
05:45	0		0	1	0	1	17:45	6	18	4	10	10	28
06:00	0		2		2		18:00	2		1		3	
06:15	0		5		5		18:15	1		2		3	
06:30	0		6		6		18:30	1		2		3	
06:45	1	1	1	14	2	15	18:45	3	7	1	6	4	13
07:00	2		7		9		19:00	2		0		2	
07:15	1		4		5		19:15	1		1		2	
07:30	1		3		4		19:30	1		0		1	
07:45	0	4	4	18	4	22	19:45	2	6	0	1	2	7
08:00	0		1		1		20:00	0		0		0	
08:15	1		3		4		20:15	4		0		4	
08:30	1		1		2		20:30	3		1		4	
08:45	0	2	5	10	5	12	20:45	4	11	0	1	4	12
09:00	1		2		3		21:00	0		0		0	
09:15	1		4		5		21:15	0		0		0	
09:30	0		2		2		21:30	1		0		1	
09:45	3	5	2	10	5	15	21:45	1	2	0		1	2
10:00	2		3		5		22:00	1		0		1	
10:15	3		2		5		22:15	2		1		3	
10:30	4		3		7		22:30	0		0		0	
10:45	1	10	1	9	2	19	22:45	0	3	0	1	0	4
11:00	5		3		8		23:00	0		0		0	
11:15	1		0		1		23:15	0		0		0	
11:30	7		2		9		23:30	0		0		0	
11:45	0	13	2	7	2	20	23:45	0		0		0	
TOTALS		37		71		108	TOTALS		100		68		168
SPLIT %		34.3%		65.7%		39.1%	SPLIT %		59.5%		40.5%		60.9%

DAILY TOTALS	IN	OUT	Total
	137	139	276

AM Peak Hour	10:45	06:15			06:15	PM Peak Hour	16:30	13:15			16:30
AM Pk Volume	14	19			22	PM Pk Volume	20	17			32
Pk Hr Factor	0.500	0.679			0.611	Pk Hr Factor	1.000	0.708			0.800
7 - 9 Volume	6	28	0	0	34	4 - 6 Volume	33	19	0	0	52
7 - 9 Peak Hour	07:00	07:00			07:00	4 - 6 Peak Hour	16:30	16:30			16:30
7 - 9 Pk Volume	4	18	0	0	22	4 - 6 Pk Volume	20	12	0	0	32
Pk Hr Factor	0.500	0.643	0.000	0.000	0.611	Pk Hr Factor	1.000	0.600	0.000	0.000	0.800

Prepared by NDS/ATD

VOLUME

North Dwy Ballinger Dr

Day: Wednesday
Date: 10/26/2016

City: Elk Grove
Project #: 16-07797-002

DAILY TOTALS	IN	OUT	Total
	109	101	210

AM Period	IN		OUT		TOTAL		PM Period	IN		OUT		TOTAL	
00:00	0		0		0		12:00	4		0		4	
00:15	0		0		0		12:15	3		1		4	
00:30	0		0		0		12:30	4		5		9	
00:45	0		0		0		12:45	1	12	3	9	4	21
01:00	0		0		0		13:00	3		2		5	
01:15	0		0		0		13:15	1		0		1	
01:30	0		0		0		13:30	3		1		4	
01:45	0		0		0		13:45	0	7	2	5	2	12
02:00	1		0		1		14:00	1		2		3	
02:15	0		0		0		14:15	2		0		2	
02:30	0		0		0		14:30	0		3		3	
02:45	0	1	0		0	1	14:45	1	4	0	5	1	9
03:00	0		0		0		15:00	0		4		4	
03:15	0		0		0		15:15	3		0		3	
03:30	0		0		0		15:30	1		1		2	
03:45	0		0		0		15:45	3	7	2	7	5	14
04:00	0		0		0		16:00	2		1		3	
04:15	0		0		0		16:15	7		0		7	
04:30	0		1		1		16:30	3		1		4	
04:45	0		1	2	1	2	16:45	1	13	1	3	2	16
05:00	0		1		1		17:00	3		1		4	
05:15	0		0		0		17:15	3		1		4	
05:30	1		2		3		17:30	3		0		3	
05:45	2	3	1	4	3	7	17:45	1	10	1	3	2	13
06:00	0		2		2		18:00	2		1		3	
06:15	0		1		1		18:15	5		2		7	
06:30	1		3		4		18:30	3		0		3	
06:45	0	1	2	8	2	9	18:45	1	11	2	5	3	16
07:00	1		7		8		19:00	2		2		4	
07:15	0		4		4		19:15	2		0		2	
07:30	0		4		4		19:30	0		0		0	
07:45	0	1	3	18	3	19	19:45	2	6	0	2	2	8
08:00	0		3		3		20:00	3		1		4	
08:15	1		3		4		20:15	3		0		3	
08:30	2		1		3		20:30	0		0		0	
08:45	1	4	4	11	5	15	20:45	1	7	0	1	1	8
09:00	2		2		4		21:00	4		0		4	
09:15	1		1		2		21:15	0		0		0	
09:30	1		1		2		21:30	0		0		0	
09:45	0	4	3	7	3	11	21:45	0	4	1	1	1	5
10:00	1		0		1		22:00	2		0		2	
10:15	0		0		0		22:15	0		0		0	
10:30	1		1		2		22:30	0		1		1	
10:45	3	5	2	3	5	8	22:45	1	3	1	2	2	5
11:00	0		1		1		23:00	0		0		0	
11:15	1		1		2		23:15	1		0		1	
11:30	1		1		2		23:30	1		0		1	
11:45	1	3	2	5	3	8	23:45	1	3	0		1	3
TOTALS		22		58		80	TOTALS		87		43		130
SPLIT %		27.5%		72.5%		38.1%	SPLIT %		66.9%		33.1%		61.9%

DAILY TOTALS	IN	OUT	Total
	109	101	210

AM Peak Hour	11:45	07:00			11:45	PM Peak Hour	15:45	12:15			12:15
AM Pk Volume	12	18			20	PM Pk Volume	15	11			22
Pk Hr Factor	0.750	0.643			0.556	Pk Hr Factor	0.536	0.550			0.611
7 - 9 Volume	5	29	0	0	34	4 - 6 Volume	23	6	0	0	29
7 - 9 Peak Hour	08:00	07:00			07:00	4 - 6 Peak Hour	16:15	16:30			16:15
7 - 9 Pk Volume	4	18	0	0	19	4 - 6 Pk Volume	14	4	0	0	17
Pk Hr Factor	0.500	0.643	0.000	0.000	0.594	Pk Hr Factor	0.500	1.000	0.000	0.000	0.607

Prepared by NDS/ATD

VOLUME

South Dwy Alder Creek Dr

Day: Wednesday
Date: 10/26/2016

City: Elk Grove
Project #: 16-07797-001

DAILY TOTALS	IN	OUT	Total
	168	171	339

AM Period	IN		OUT		TOTAL		PM Period	IN		OUT		TOTAL	
00:00	0		0		0		12:00	2		1		3	
00:15	0		0		0		12:15	6		2		8	
00:30	0		0		0		12:30	4		4		8	
00:45	0		0		0		12:45	2	14	7	14	9	28
01:00	0		0		0		13:00	2		2		4	
01:15	0		0		0		13:15	4		2		6	
01:30	0		1		1		13:30	7		5		12	
01:45	0		0	1	0	1	13:45	1	14	2	11	3	25
02:00	0		0		0		14:00	7		7		14	
02:15	1		1		2		14:15	2		4		6	
02:30	1		1		2		14:30	7		7		14	
02:45	0	2	0	2	0	4	14:45	4	20	2	20	6	40
03:00	0		0		0		15:00	4		2		6	
03:15	0		0		0		15:15	7		4		11	
03:30	0		0		0		15:30	3		2		5	
03:45	0		0		0		15:45	4	18	5	13	9	31
04:00	0		0		0		16:00	7		3		10	
04:15	0		0		0		16:15	8		3		11	
04:30	0		0		0		16:30	4		3		7	
04:45	0		1	1	1	1	16:45	4	23	1	10	5	33
05:00	0		1		1		17:00	2		3		5	
05:15	0		0		0		17:15	4		2		6	
05:30	0		0		0		17:30	5		2		7	
05:45	0		0	1	0	1	17:45	3	14	0	7	3	21
06:00	0		1		1		18:00	2		0		2	
06:15	0		3		3		18:15	5		2		7	
06:30	0		3		3		18:30	4		2		6	
06:45	1	1	1	8	2	9	18:45	3	14	3	7	6	21
07:00	1		6		7		19:00	5		1		6	
07:15	1		5		6		19:15	2		1		3	
07:30	1		4		5		19:30	1		0		1	
07:45	0	3	4	19	4	22	19:45	1	9	1	3	2	12
08:00	2		4		6		20:00	1		1		2	
08:15	1		4		5		20:15	3		0		3	
08:30	0		2		2		20:30	2		1		3	
08:45	0	3	2	12	2	15	20:45	2	8	0	2	2	10
09:00	1		6		7		21:00	0		1		1	
09:15	1		4		5		21:15	1		0		1	
09:30	0		2		2		21:30	2		0		2	
09:45	1	3	6	18	7	21	21:45	0	3	0	1	0	4
10:00	3		3		6		22:00	0		0		0	
10:15	1		1		2		22:15	0		1		1	
10:30	2		3		5		22:30	1		0		1	
10:45	3	9	2	9	5	18	22:45	0	1	0	1	0	2
11:00	1		2		3		23:00	0		0		0	
11:15	1		2		3		23:15	0		0		0	
11:30	3		2		5		23:30	2		0		2	
11:45	2	7	5	11	7	18	23:45	0	2	0		0	2
TOTALS		28		82		110	TOTALS		140		89		229
SPLIT %		25.5%		74.5%		32.4%	SPLIT %		61.1%		38.9%		67.6%

DAILY TOTALS	IN	OUT	Total
	168	171	339

AM Peak Hour	11:45	07:00			11:45	PM Peak Hour	15:45	13:45			14:00
AM Pk Volume	14	19			26	PM Pk Volume	23	20			40
Pk Hr Factor	0.583	0.792			0.813	Pk Hr Factor	0.719	0.714			0.714
7 - 9 Volume	6	31	0	0	37	4 - 6 Volume	37	17	0	0	54
7 - 9 Peak Hour	07:15	07:00			07:00	4 - 6 Peak Hour	16:00	16:00			16:00
7 - 9 Pk Volume	4	19	0	0	22	4 - 6 Pk Volume	23	10	0	0	33
Pk Hr Factor	0.500	0.792	0.000	0.000	0.786	Pk Hr Factor	0.719	0.833	0.000	0.000	0.750

Prepared by NDS/ATD

VOLUME

Bradshaw Road between Gerber Road and Vintage Park Drive

Day: Thursday
Date: 3/17/2016

City: Sacramento
Project #: 16-7180-001

6750-01

DAILY TOTALS	NB	SB	EB	WB	Total
	11,389	11,475	0	0	22,864

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	10		32		0	0	42		12:00	102		105		0	0	207	
00:15	7		27		0	0	34		12:15	97		128		0	0	225	
00:30	12		12		0	0	24		12:30	104		90		0	0	194	
00:45	6	35	13	84	0	0	19	119	12:45	113	416	121	444	0	0	234	860
01:00	4		8		0	0	12		13:00	120		109		0	0	229	
01:15	10		12		0	0	22		13:15	126		120		0	0	246	
01:30	7		12		0	0	19		13:30	124		156		0	0	280	
01:45	9	30	11	43	0	0	20	73	13:45	134	504	137	522	0	0	271	1026
02:00	3		6		0	0	9		14:00	126		181		0	0	307	
02:15	4		9		0	0	13		14:15	152		184		0	0	336	
02:30	6		8		0	0	14		14:30	162		191		0	0	353	
02:45	8	21	6	29	0	0	14	50	14:45	124	564	268	824	0	0	392	1388
03:00	9		9		0	0	18		15:00	168		256		0	0	424	
03:15	18		10		0	0	28		15:15	172		264		0	0	436	
03:30	13		5		0	0	18		15:30	181		275		0	0	456	
03:45	10	50	8	32	0	0	18	82	15:45	176	697	353	1148	0	0	529	1845
04:00	18		8		0	0	26		16:00	162		378		0	0	540	
04:15	32		8		0	0	40		16:15	164		377		0	0	541	
04:30	43		5		0	0	48		16:30	183		407		0	0	590	
04:45	52	145	10	31	0	0	62	176	16:45	158	667	399	1561	0	0	557	2228
05:00	70		18		0	0	88		17:00	157		405		0	0	562	
05:15	102		14		0	0	116		17:15	137		452		0	0	589	
05:30	200		27		0	0	227		17:30	139		405		0	0	544	
05:45	192	564	31	90	0	0	223	654	17:45	138	571	333	1595	0	0	471	2166
06:00	192		60		0	0	252		18:00	115		272		0	0	387	
06:15	249		70		0	0	319		18:15	136		273		0	0	409	
06:30	357		91		0	0	448		18:30	113		243		0	0	356	
06:45	362	1160	107	328	0	0	469	1488	18:45	115	479	159	947	0	0	274	1426
07:00	384		113		0	0	497		19:00	83		137		0	0	220	
07:15	395		160		0	0	555		19:15	74		145		0	0	219	
07:30	471		177		0	0	648		19:30	57		123		0	0	180	
07:45	439	1689	138	588	0	0	577	2277	19:45	83	297	123	528	0	0	206	825
08:00	392		148		0	0	540		20:00	81		95		0	0	176	
08:15	338		154		0	0	492		20:15	54		100		0	0	154	
08:30	292		121		0	0	413		20:30	60		107		0	0	167	
08:45	253	1275	104	527	0	0	357	1802	20:45	58	253	88	390	0	0	146	643
09:00	224		80		0	0	304		21:00	64		92		0	0	156	
09:15	153		77		0	0	230		21:15	63		88		0	0	151	
09:30	154		69		0	0	223		21:30	54		93		0	0	147	
09:45	120	651	92	318	0	0	212	969	21:45	43	224	81	354	0	0	124	578
10:00	116		86		0	0	202		22:00	40		67		0	0	107	
10:15	113		81		0	0	194		22:15	41		54		0	0	95	
10:30	109		86		0	0	195		22:30	30		57		0	0	87	
10:45	108	446	90	343	0	0	198	789	22:45	29	140	45	223	0	0	74	363
11:00	97		93		0	0	190		23:00	33		40		0	0	73	
11:15	94		99		0	0	193		23:15	32		37		0	0	69	
11:30	109		80		0	0	189		23:30	20		36		0	0	56	
11:45	107	407	93	365	0	0	200	772	23:45	19	104	48	161	0	0	67	265
TOTALS		6473		2778				9251	TOTALS		4916		8697				13613
SPLIT %		70.0%		30.0%				40.5%	SPLIT %		36.1%		63.9%				59.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	11,389	11,475	0	0	22,864

AM Peak Hour	07:15	07:15			07:15	PM Peak Hour	15:00	16:30			16:30
AM Pk Volume	1697	623			2320	PM Pk Volume	697	1663			2298
Pk Hr Factor	0.901	0.880			0.895	Pk Hr Factor	0.963	0.920			0.974
7 - 9 Volume	2964	1115	0	0	4079	4 - 6 Volume	1238	3156	0	0	4394
7 - 9 Peak Hour	07:15	07:15			07:15	4 - 6 Peak Hour	16:00	16:30			16:30
7 - 9 Pk Volume	1697	623	0	0	2320	4 - 6 Pk Volume	667	1663	0	0	2298
Pk Hr Factor	0.901	0.880	0.000	0.000	0.895	Pk Hr Factor	0.911	0.920	0.000	0.000	0.974