
TECHNICAL MEMORANDUM

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Subject: SBCTA SB 743 Implementation: Case Studies

OC18-0585

This technical memorandum presents land use project case studies to evaluate the methodologies associated with different threshold options. Lead agencies have the discretion to select their own thresholds presuming they provide substantial evidence to support their selection (see the Thresholds Evaluation Technical Memorandum for more details). The following land use projects were evaluated as case studies in this effort:

1. Crossroads at 395 – A large retail center in Victorville
2. Project Phoenix – A mixed-use project including a cultural center, museum, apartments, and retail in downtown Twentynine Palms
3. Mediterra – Single family homes in Highland
4. Safety Hall and Courthouse Demolition – A mixed-use redevelopment project including apartments and retail near downtown Redlands
5. Southwest Fontana Logistics Center – A warehouse in Fontana
6. El Paseo – Condominium homes in Fontana
7. Chino Parcel Delivery Facility – A warehouse in Chino
8. Mountain Grove – A mixed-use project including retail, movie theater, hotel, and apartments in unincorporated Redlands
9. Alta Mira - Single family homes in unincorporated Joshua Tree
10. Empire lakes – A mixed-use project including apartments, retail, and office in Rancho Cucamonga
11. Residence Inn – A new hotel in Rancho Cucamonga
12. Urgent Care – A new urgent care facility in Apply Valley

The remainder of this memo is organized as follows.

- Potential Project Screening for Land Use Projects
- VMT Analysis for Land Use Projects
- VMT Analysis for Land Use Plans

- VMT Analysis for Transportation Projects
- Land Use Project Case Study Tests

Potential Project Screening for Land Use Projects

Lead agencies may choose to use an impact screening procedure to streamline land use project review for VMT impacts. A screening tool is currently under development that could be utilized by SBCTA member jurisdictions, depending on the criteria ultimately chosen for screening. If a project does not pass an initial screening test, then a full impact analysis is warranted. In all, the process may include up to three steps as outlined below.

Step 1: Transit Priority Area (TPA) Screening

Projects located within a TPA¹ may be presumed to have a less than significant impact absent substantial evidence to the contrary. This presumption may **NOT** be appropriate if the project:

1. Has a Floor Area Ratio (FAR) of less than 0.75;
2. Includes more parking for use by residents, customers, or employees of the project than required by the City or County (if the City or County requires the project to supply parking);
3. Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization); or
4. Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

Step 2: Low VMT Area Screening

Residential and office projects located within a low VMT generating area may be presumed to have a less than significant impact absent substantial evidence to the contrary. In addition, other employment-related and mixed-use land use projects may qualify for the use of screening if the project can reasonably be expected to generate VMT per resident, per worker, or per service population that is similar to the existing land uses in the low VMT area. For this screening in San Bernardino County, the SBTAM travel forecasting model was used to measure VMT performance for individual jurisdictions and for individual traffic analysis zones (TAZs). TAZs are geographic polygons similar to census block groups used to represent areas of homogenous travel behavior. Total daily VMT per service population (population plus employment) was

¹ A TPA is defined as a half mile area around an existing major transit stop or an existing stop along a high-quality transit corridor per the definitions below.

Pub. Resources Code, § 21064.3 - 'Major transit stop' means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.

Pub. Resources Code, § 21155 - For purposes of this section, a 'high-quality transit corridor' means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.

estimated for each TAZ. Those TAZs that perform at or below the jurisdictional average of total VMT per service population under base year (2012) conditions are considered low VMT areas for purposes of this memo. Individual lead agencies may choose a different baseline threshold to define their low VMT areas. This presumption may not be appropriate if the project land uses would alter the existing built environment in such a way as to increase the rate or length of vehicle trips.

Step 3: Project Type Screening

Projects of certain sizes and function may be screened from VMT assessment. Local serving retail projects less than 50,000 square feet may be presumed to have a less than significant impact absent substantial evidence to the contrary. Local serving retail generally improves the convenience of shopping close to home and has the effect of reducing vehicle travel. Projects which serve the local community and have the potential to reduce VMT, such as public K-12 schools, affordable housing, daycare facilities, student housing, public libraries, and fire stations may also be screened from VMT assessment. Projects that generate less than 110 net daily trips have also been recommended by OPR to be small enough to be screened from analysis.²

VMT Analysis for Land Use Projects

Projects not screened through the steps above should complete VMT analysis and forecasting through the SBTAM model to determine if they have a significant VMT impact. This analysis should include 'project generated VMT' and 'project effect on VMT' estimates for the project TAZ (or TAZs).

VMT Methods

Three methods for calculating VMT are available using the SBTAM model.

1. Production/Attraction VMT

The Production/Attraction (PA) method for calculating VMT sums all weekday VMT generated by trips with at least one trip end in the study area. The PA method is completed after the fourth (out of five) loops of assignment in the travel demand model, while trips are still tracked by trip purpose (Note, the trips at this stage are person trips that need to be converted to vehicle trips for VMT estimate. Productions are land use types that generate trips (residences) and attractions are land use that attract trips (employment).

² Per the *Technical Advisory on Evaluating Transportation Impacts in CEQA*, December 2018, CEQA provides a categorical exemption for existing facilities, including additions to existing structures of up to 10,000 square feet, so long as the project is in an area where public infrastructure is available to allow for maximum planned development and the project is not in an environmentally sensitive area. (CEQA Guidelines, § 15301, subd. (e)(2).) Typical project types for which trip generation increases relatively linearly with building footprint (i.e., general office building, single tenant office building, office park, and business park) generate or attract an additional 110-124 trips per 10,000 square feet.

Fehr & Peers recommends each jurisdiction consider the substantial evidence presented by OPR and determine if it is reasonable for their jurisdiction. Trip generation is one component of VMT, and a screening criteria may be more appropriate if it considers both trip generation and trip length when screening a project.

Productions and attractions are converted from person trips to vehicle trips for the purposes of calculating VMT.

PA matrices do not include trips that have one trip end outside of the model boundary (IX-XI trips) and, therefore, do not include those trips in the VMT estimates.

The PA method allows project VMT to be evaluated based on trip purpose. For example, a single-use project such as an office building could be analyzed based only on the commute VMT, or home-based work (HBW) VMT per employee.

2. Origin/Destination VMT

The Origin/Destination (OD) method for calculating VMT sums all weekday VMT generated by trips with at least one trip end in the study area. The OD method is completed after the fifth and final loops of assignment in the travel demand model. Origins are all vehicle trips that start in a specific traffic analysis zone, and destinations are all vehicle trips that end in a specific traffic analysis zone.

OD does account for trips that have one trip end outside of the model boundary (IX-XI trips) and therefore provides a more complete capture of all travel within the study area; however, the SBTAM and SCAG models cannot keep track of trips by trip purposes separately in this format.

3. Boundary Method VMT

The boundary method is the sum of all weekday VMT on a roadway network within a designated boundary.³ Boundary method VMT includes all trips, including those that do not begin or end in the designated boundary. This is the only VMT method that captures the effect of cut-through and/or displaced traffic and is evaluated in the cumulative year for land use projects.

VMT Metrics

VMT should always be normalized based on the number of residents and employees present in the zone, City or regional area for comparative purposes to determine impacts. The following presents the metrics to normalize VMT.

Total VMT per service population

Total VMT per service population includes the VMT generated divided by the population and employment in a given area (TAZ, City, or sub-region). Total VMT per service population can be presented with or without

³ OPR recommends against using “arbitrary” boundaries such as City or County lines, however the model-wide results would include all six counties in the model. The addition of a single project in such a large area would be negligible. The only way to distinguish between no project and plus project results to determine the effect on VMT is to set a boundary at a scale where the effect on VMT from an individual project can be measured. Therefore, Fehr & Peers recommends the City or sub-regional level boundary would be an appropriate scale for this methodology.

truck VMT when calculated from PA VMT and includes truck VMT when calculated from OD VMT. Total VMT per service population would also be presented when calculating VMT using the Boundary Method.

An important note regarding service population is the calculation includes the employment and population coded into the travel demand model. This calculation excludes VMT-generating groups such as visitors and students. Each Project should consider if it is appropriate to add VMT-generating groups to its service population.

Home-based VMT per resident (automobile only)

Home-based VMT per resident includes the VMT generated only by home-based work and home-based other productions divided by the population in a given area (TAZ, City, or sub-region). This method can only be calculated from PA VMT and does not include truck VMT or trips with one trip end outside of the model. Zones without any residential uses will generate zero home-based VMT per resident.

Home-based work VMT per worker (automobile only)

Home-based work VMT per worker includes the VMT generated only by home-based work attractions divided by the number of employees in a given area (TAZ, City, or sub-region). This method can only be calculated from PA VMT and does not include truck VMT or trips with one trip end outside of the model. Zones with no commercial uses will generate zero home-based VMT per worker.

VMT Scenarios

Project testing was performed under the following scenarios.

- Baseline conditions - This data has been extracted from SBTAM and is available in the memorandum on Baseline VMT Methodology and Data dated June 3, 2019. Future projects should confirm that this baseline data represents the latest version of the regional travel model. VMT was evaluated using the Production Attraction (PA) and Origin Destination (OD) Method.⁴
- Baseline plus project for the project - The project land use was added to the project TAZ or a separate TAZ would be created to contain the project land uses. A full model run was performed and VMT changes would be isolated for the project TAZ and across the full model network. The model output must include reasonableness checks of the production and attraction balancing to ensure the project effect is accurately captured. If this scenario results in a less-than-significant impact, then additional cumulative scenario analysis may not be required (more information about this outcome can be found in the Thresholds Evaluation memo).
- Cumulative no project - This data is available from SBTAM. VMT was calculated using the OD, PA, and Boundary Method.
- Cumulative plus project – The project land use would either be added to the project TAZ or a separate TAZ would be created to contain the project land uses. The addition of project land uses

⁴ Once a local jurisdiction identifies either PA or OD as the most appropriate method for calculating VMT for their projects, VMT would need to be calculated using only one method to assess project generated impacts.

should be accompanied by a reallocation of a similar amount of land use from other TAZs. Land use projects will generally not change the cumulative no project control totals for population and employment growth. Instead, they will influence the land use supply through changes in general plan land use designations and zoning. If project land uses are simply added to the cumulative no project scenario, then the analysis should reflect this limitation in the methodology and acknowledge that the analysis may overestimate the project's effect on VMT. VMT was calculated using the OD, PA, and Boundary Method⁵.

VMT Analysis for Land Use Plans

Land use plans are not subject to screening and require specific VMT analysis. Land use plans can be tested for significant impacts under cumulative conditions using the same cumulative threshold options (or lead agency thresholds) below. These thresholds require modeling the land use plan changes in the SBTAM model to determine VMT impacts. To capture the project effect, the same cumulative year population and employment growth totals should be used model wide. The land use plan only influences land use allocation, so land use in other areas of the model should be adjusted such that the growth totals model-wide remain the same between the cumulative year no project and plus project scenarios.

Land Use Project Case Study Tests

For the case studies, four threshold options were tested to determine if the land use projects would cause a significant impact under baseline plus project conditions. Normally, baseline will represent the year in which the notice of preparation (NOP) is published for the project. Since all the case studies are completed projects, the baseline year has simply been set to 2012, the base year of the SBTAM model. Future projects may need to create specific baseline years and should consider methods such as interpolating VMT results between the 2012 base year output from SBTAM and 2040 horizon year output.

⁵ Once a local jurisdiction identifies either PA or OD as the most appropriate method for calculating VMT for their projects, VMT would need to be calculated using only one method to assess project generated impacts. Boundary method would be required to assess the project effect on VMT.

Threshold Options

Threshold	Significant Impact	Method	Scenarios
Project Generated VMT			
Option 1 – OPR Guidance 15%	A significant impact would occur if the addition of a project to the base year model causes its corresponding TAZ to generate daily home-based production VMT per resident or daily home-based-work attraction VMT per employee or daily total VMT per service population (VMT per Res/Emp/SP) more than 15 percent below the applicable jurisdictional average under baseline conditions.	PA/OD	Base Year Cumulative Year
Option 2 – ARB GHG Goals 14.3%	A significant impact would occur if the addition of a project to the base year model causes its corresponding TAZ to generate daily VMT per Res/Emp/SP more than 14.3 percent below the applicable jurisdictional average under baseline conditions.	PA/OD	Base Year Cumulative Year
Option 3 – Better than General Plan Buildout	A significant impact would occur if the addition of a project to the base year model causes its corresponding TAZ to generate daily VMT per Res/Emp/SP more than the applicable jurisdiction average under General Plan buildout conditions.	PA/OD	Base Year Cumulative Year
Option 4 – Better than Existing	A significant impact would occur if the addition of a project to the base year model causes its corresponding TAZ to generate daily VMT per Res/Emp/SP above the applicable jurisdictional average under baseline conditions.	PA/OD	Base Year Cumulative Year
Project Effect on VMT			
Increase Citywide	A significant impact would occur if the addition of a project to the cumulative year model causes an increase to its citywide daily VMT per SP above the applicable jurisdictional average without the project under baseline conditions.	Boundary	Cumulative Year

Source: Fehr & Peers, 2020

Lead agencies have discretion to set their own thresholds as explained in the Thresholds Evaluation memo. The case study tests will compare against the City average and the County average.

Crossroads at 395

Crossroads at 395 is a project in Victorville, located at the intersection of Palmdale Road and US Hwy 395. The project includes 303,000 square feet of retail and commercial uses on the 32.44-acre site.

The Crossroads at 395 project does not meet any of the proposed screening criteria as it is not located in a TPA or a low VMT-generating zone. It is a retail project over 50,000 square feet and generates more than 110 daily trips.

Therefore, a full VMT assessment would be required. Below are project-level VMT estimates prepared using SBTAM for both OD and PA methodologies. The OD VMT per service population (VMT/SP) is higher than the City and County Existing (Base Year) and General Plan Buildout (Cumulative Year) averages. The home-based-work (HBW) VMT per employment (VMT/Emp) is lower than the City Existing, County Existing and County General Plan Buildout averages, but is higher than the City General Plan Buildout average.

In the cumulative year model VMT was also calculated using the boundary method. Citywide VMT decreases with the addition of the project.

Crossroads at 395: OD/PA Method

TAZ – With Project			City – No Project			County – No Project		
OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp
108.87	0.00	10.48	Base Year (Existing)					
			36.96	12.83	11.36	38.67	11.36	15.85
			Cumulative Year (General Plan Buildout)					
			28.69	15.03	9.95	32.23	14.57	14.61
Impacts								
Option 1 – OPR Guidance 15% Below Existing			Impact	No Project HB VMT/Pop	Impact	Impact	No Project HB VMT/Pop	No Impact
Option 2 – ARB GHG Goals 14.3% Below Existing			Impact		Impact	Impact		No Impact
Option 3 – Better than General Plan Buildout			Impact		Impact	Impact		No Impact
Option 4 – Better than Existing			Impact		No Impact	Impact		No Impact

Source: Fehr & Peers, 2020

Crossroads at 395: Boundary Method

Citywide VMT/SP	
Scenario	VMT/SP
No Project	20.40
With Project	20.35
Impacts	
Increase Citywide VMT/SP	No Impact

Source: Fehr & Peers, 2020

Project Phoenix

Project Phoenix is a project in downtown Twentynine Palms. The project includes 5,000 square feet of retail, 71 senior attached dwelling units, and 26,500 square feet of cultural center/museum.

Project Phoenix could potentially be screened. It is not located in a TPA or a low VMT-generating zone. The retail portion of the project is under 50,000 square feet, so this portion of the project could potentially be screened. Furthermore, the cultural center/museum could be identified as local-serving and land use types for screening. The project generates more than 110 daily trips.

Although the Project could be considered for screening, a full VMT analysis was performed for the purposes of testing. Below are project-level VMT estimates prepared using SBTAM and both OD and PA methodologies. The OD VMT/SP is higher than the City and County Existing and General Plan Buildout averages. The Project is mixed-use, so VMT/SP is the appropriate metric for consideration of project-generated impacts.

In the cumulative year model VMT was also calculated using the boundary method. Citywide VMT decreases with the addition of the project.

Project Phoenix: OD/PA Method

TAZ – With Project			City – No Project			County – No Project		
OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp
39.70	23.13	8.68	Base Year (Existing)					
			28.58	17.52	6.43	38.67	15.85	17.10
			Cumulative Year (General Plan Buildout)					
			25.88	17.65	6.62	32.23	14.57	14.61

Impacts

Option 1 – OPR Guidance 15% Below Existing	Impact	VMT/SP is the recommended metric for mixed-use projects	Impact	VMT/SP is the recommended metric for mixed-use projects
Option 2 – ARB GHG Goals 14.3% Below Existing	Impact		Impact	
Option 3 – Better than General Plan Buildout	Impact		Impact	
Option 4 – Better than Existing	Impact		Impact	

Source: Fehr & Peers, 2020

Project Phoenix: Boundary Method

Citywide VMT/SP	
Scenario	VMT/SP
No Project	9.35
With Project	9.30
Impacts	
Increase Citywide VMT/SP	No Impact

Source: Fehr & Peers, 2020

Mediterra

Mediterra is a project in Highland, at the eastern edge of the City of Highland off Greenspot Road. The project includes 306 single family homes.

The Project does not meet any of the proposed screening criteria as it is not located in a TPA or a low VMT-generating zone. Single family homes are not a land use that can be screened out, and the project generates more than 110 daily trips.

Therefore, a full VMT assessment would be required. Below are project-level VMT estimates prepared using SBTAM and both OD and PA methodologies. The OD VMT/SP is higher than the City and County Existing and General Plan Buildout averages. The PA HB/Pop VMT is also higher than the City and County Existing and General Plan Buildout averages.

In the cumulative year model VMT was also calculated using the boundary method. Citywide VMT increases with the addition of the project. This is likely due to longer distances residents of the project than in other neighborhoods in Highland.

Mediterra: OD/PA Method

TAZ – With Project			City – No Project			County – No Project		
OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp
46.41	36.12	0.00	Base Year (Existing)					
			28.80	14.80	15.90	38.67	15.85	17.10
			Cumulative Year (General Plan Buildout)					
			24.50	13.68	13.68	32.23	14.57	14.61
Impacts								
Option 1 – OPR Guidance 15% Below Existing			Impact	Impact	No Project HBW VMT/Emp	Impact	Impact	No Project HBW VMT/Emp
Option 2 – ARB GHG Goals 14.3% Below Existing			Impact	Impact		Impact	Impact	
Option 3 – Better than General Plan Buildout			Impact	Impact		Impact	Impact	
Option 4 – Better than Existing			Impact	Impact		Impact	Impact	

Source: Fehr & Peers, 2020

Mediterra: Boundary Method

Citywide VMT/SP	
Scenario	VMT/SP
No Project	14.87
With Project	14.88
Impacts	
Increase Citywide VMT/SP	Impact

Source: Fehr & Peers, 2020

Safety Hall and Courthouse Demolition

The Safety Hall and Courthouse Demolition project is a redevelopment project located in Redlands. The Project is located on Brookside Avenue near downtown Redlands and includes 45 multifamily dwelling units and 33,000 square feet of retail.

This Project could potentially be screened. It is not located in a low VMT-generating zone but is located in a future TPA. The retail portion of the project is under 50,000 square feet, so this portion of the project could potentially be screened. The project generates more than 110 daily trips.

Although the Project could be considered for screening, a full VMT analysis was performed for the purposes of testing. Below are project-level VMT estimates prepared using SBTAM and both OD and PA methodologies. The OD VMT/SP is higher than the City and County Existing and General Plan Buildout averages. The Project is mixed-use, so VMT/SP is the appropriate metric for consideration of project-generated impacts.

In the cumulative year model VMT was also calculated using the boundary method. Citywide VMT/SP experiences a very small decrease with the addition of the project.

Safety Hall: OD/PA Method

TAZ – With Project			City – No Project			County – No Project		
OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp
50.43	10.17	17.70	Base Year (Existing)					
			37.04	11.01	17.74	38.67	15.85	17.10
			Cumulative Year (General Plan Buildout)					
			30.21	10.09	14.97	32.23	14.57	14.61
Impacts								
Option 1 – OPR Guidance 15% Below Existing			Impact	VMT/SP is the recommended metric for mixed-use projects	Impact	VMT/SP is the recommended metric for mixed-use projects		
Option 2 – ARB GHG Goals 14.3% Below Existing			Impact		Impact			
Option 3 – Better than General Plan Buildout			Impact		Impact			
Option 4 – Better than Existing			Impact		Impact			

Source: Fehr & Peers, 2020

Safety Hall: Boundary Method

Citywide VMT/SP	
Scenario	VMT/SP
No Project	20.96
With Project	20.96
Impacts	
Increase Citywide VMT/SP	No Impact

Source: Fehr & Peers, 2020

Southwest Fontana Logistics Center

The Southwest Fontana Logistics Center is located in Fontana, it proposes to construct over 1 million square feet of warehouse on Jurupa Avenue.

The Project does not meet any of the proposed screening criteria as it is not located in a TPA or a low VMT-generating zone. A warehousing project is not a land use type that can be screened, and the project generates more than 110 daily trips.

Therefore, a full VMT assessment would be required. Below are project-level VMT estimates prepared using SBTAM and both OD and PA methodologies. The OD VMT/SP is higher than the City Existing average, however the OD VMT/SP is lower than the County Existing average. The OD VMT/SP is higher than the City and County General Plan Buildout averages. The PA HBW VMT/Emp is higher than the City and County Existing and General Plan Buildout averages.

In the cumulative year model VMT was also calculated using the boundary method. Citywide VMT decreases with the addition of the project.

Southwest Fontana Logistics Center: OD/PA Method

TAZ – With Project			City – No Project			County – No Project		
OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp
35.44	0.00	20.99	Base Year (Existing)					
			31.90	15.55	16.14	38.67	15.85	17.10
			Cumulative Year (General Plan Buildout)					
			26.22	14.44	13.83	32.23	14.57	14.61
Impacts								
Option 1 – OPR Guidance 15% Below Existing			Impact	No Project HB VMT/Pop	Impact	Impact	No Project HB VMT/Pop	Impact
Option 2 – ARB GHG Goals 14.3% Below Existing			Impact		Impact	Impact		Impact
Option 3 – Better than General Plan Buildout			Impact		Impact	Impact		Impact
Option 4 – Better than Existing			Impact		Impact	No Impact		Impact

Source: Fehr & Peers, 2020

Southwest Fontana Logistics Center: Boundary Method

Citywide VMT/SP	
Scenario	VMT/SP
No Project	15.85
With Project	15.84
Impacts	
Increase Citywide VMT/SP	No Impact

Source: Fehr & Peers, 2020

El Paseo

El Paseo proposes to construct 241 multifamily residential units, and is located off of Citrus Avenue, south of Interstate 210.

This Project could potentially be screened. It is not located in a TPA but is in a low VMT generating zone. Multifamily residential units could be screened as a land use type if they were designated affordable or supportive housing units. The Project could not be screened based on total daily trips, as it would generate more than 110 daily trips.

Although the Project could be considered for screening, a full VMT analysis was performed for the purposes of testing. In the base year, the OD VMT/SP and PA HB VMT/Pop are below the City and County average. In the cumulative year model, the OD VMT/SP is below the City and County average, but the PA HB VMT/Pop is slightly higher than the City and County average.

In the cumulative year model VMT was also calculated using the boundary method. Citywide VMT decreases with the addition of the project.

El Paseo: OD/PA Method

TAZ – With Project			City – No Project			County – No Project		
OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp
17.80	14.52	0.00	Base Year (Existing)					
			31.90	15.55	16.14	38.67	15.85	17.10
			Cumulative Year (General Plan Buildout)					
			26.22	14.44	13.83	32.23	14.57	14.61
Impacts								
Option 1 – OPR Guidance 15% Below Existing			No Impact	Impact	No Project HBW VMT/Emp	No Impact	Impact	No Project HBW VMT/Emp
Option 2 – ARB GHG Goals 14.3% Below Existing			No Impact	Impact		No Impact	Impact	
Option 3 – Better than General Plan Buildout			No Impact	Impact		No Impact	No Impact	
Option 4 – Better than Existing			No Impact	No Impact		No Impact	No Impact	

Source: Fehr & Peers, 2020

El Paseo: Boundary Method

Citywide VMT/SP	
Scenario	VMT/SP
No Project	15.85
With Project	15.83
Impacts	
Increase Citywide VMT/SP	No Impact

Source: Fehr & Peers, 2020

Chino Parcel Delivery Facility

The Chino Parcel Delivery Facility project proposes to construct 475,000 square feet of warehouse, and is located off of Merrill Ave, between Chino Airport and the City boundary.

This Project does not meet any potential screening criteria. It is not located in a TPA or a low VMT generating zone. The project is a large warehouse, and therefore could not be screened as a land use type and it would generate more than 110 daily trips.

The OD VMT/SP and PA HBW VMT/EMP are above the City and County Existing and General Plan Buildout averages.

In the cumulative year model VMT was also calculated using the boundary method. Citywide VMT experiences a very small increase with the addition of the project.

Chino Parcel Delivery Facility: OD/PA Method

TAZ – With Project			City – No Project			County – No Project		
OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp
43.18	0.00	24.60	Base Year (Existing)					
			40.12	14.50	19.48	38.67	15.85	17.10
			Cumulative Year (General Plan Buildout)					
			31.35	13.05	15.41	32.23	14.57	14.61
Impacts								
Option 1 – OPR Guidance 15% Below Existing			Impact	No Project HB VMT/Pop	Impact	Impact	No Project HB VMT/Pop	Impact
Option 2 – ARB GHG Goals 14.3% Below Existing			Impact		Impact	Impact		Impact
Option 3 – Better than General Plan Buildout			Impact		Impact	Impact		Impact
Option 4 – Better than Existing			Impact		Impact	Impact		Impact

Source: Fehr & Peers, 2020

Chino Parcel Delivery Facility: Boundary Method

Citywide VMT/SP	
Scenario	VMT/SP
No Project	13.24
With Project	13.24
Impacts	
Increase Citywide VMT/SP	Impact

Source: Fehr & Peers, 2020

Mountain Grove

The Mountain Grove project proposes to construct 281 multifamily residential units, a 104-room hotel, a 3,485-seat cinema, and 117,000 square feet of retail in unincorporated San Bernardino County near Redlands. The Project is located at the corner of San Bernardino Avenue and Alabama Street.

This Project could potentially be screened. It is not located in a TPA but is in a low VMT generating zone. The retail portion of the project is over 50,000 square feet, and the cinema and hotel could not be screened based on land use type. The multi-family residential units could be screened if they are built as their own project and were designated low income or permanent supportive housing units. The Project could not be screened based on total daily trips, as it would generate more than 110 daily trips.

Although the Project could be considered for screening, a full VMT analysis was performed for the purposes of testing. The OD VMT/SP is lower than the unincorporated County and County Existing averages and the unincorporated County General Plan Buildout average. The OD VMT/SP is above the County General Plan Buildout average. The Project is mixed-use, so VMT/SP is the appropriate metric for consideration of project-generated impacts.

In the cumulative year model VMT was also calculated using the boundary method. Unincorporated Countywide VMT decreases with the addition of the project.

Mountain Grove: OD/PA Method

TAZ – With Project			City – No Project			County – No Project		
OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp
37.23	10.60	18.21	Base Year (Existing)					
			52.51	24.81	19.49	38.67	15.85	17.10
			Cumulative Year (General Plan Buildout)					
			43.41	19.88	18.12	32.23	14.57	14.61
Impacts								
Option 1 – OPR Guidance 15% Below Existing			No Impact		VMT/SP is the recommended metric for mixed-use projects	Impact		VMT/SP is the recommended metric for mixed-use projects
Option 2 – ARB GHG Goals 14.3% Below Existing			No Impact			Impact		
Option 3 – Better than General Plan Buildout			No Impact			Impact		
Option 4 – Better than Existing			No Impact			No Impact		

Source: Fehr & Peers, 2020

Mountain Gove: Boundary Method

Unincorporated Countywide VMT/SP	
Scenario	VMT/SP
No Project	72.41
With Project	72.34
Impacts	
Increase Unincorporated Countywide VMT/SP	No Impact

Source: Fehr & Peers, 2020

Alta Mira

Alta Mira is a project in unincorporated Joshua Tree, off Sunny Vista Road. The project includes 248 single family homes.

The Project does not meet any of the proposed screening criteria as it is not located in a TPA or a low VMT-generating zone. Single family homes are not a land use that can be screened out, and the project generates more than 110 daily trips.

Therefore, a full VMT assessment would be required. Below are project-level VMT estimates prepared using SBTAM and both OD and PA methodologies. The OD VMT/SP is lower than the unincorporated County and County Existing averages and the unincorporated County General Plan Buildout average. The OD VMT/SP is above the County General Plan Buildout average. The PA HB VMT/Pop is higher than the unincorporated County and County Existing average. The PA HB/Pop VMT is lower than the unincorporated County General Plan Buildout average but higher than the County General Plan Buildout average.

In the cumulative year model VMT was also calculated using the boundary method. Unincorporated Countywide VMT decrease with the addition of the project.

Alta Mira: OD/PA Method

TAZ – With Project			City – No Project			County – No Project		
OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp
36.88	27.28	0.00	Base Year (Existing)					
			52.51	24.81	19.49	38.67	15.85	17.10
			Cumulative Year (General Plan Buildout)					
			43.41	19.88	18.12	32.23	14.57	14.61
Impacts								
Option 1 – OPR Guidance 15% Below Existing			No Impact	Impact	No Project HBW VMT/Emp	Impact	Impact	No Project HBW VMT/Emp
Option 2 – ARB GHG Goals 14.3% Below Existing			No Impact	Impact		Impact	Impact	
Option 3 – Better than General Plan Buildout			No Impact	Impact		Impact	Impact	
Option 4 – Better than Existing			No Impact	Impact		No Impact	Impact	

Source: Fehr & Peers, 2020

Alta Mira: Boundary Method

Unincorporated Countywide VMT/SP	
Scenario	VMT/SP
No Project	72.41
With Project	72.34
Impacts	
Increase Unincorporated Countywide VMT/SP	No Impact

Source: Fehr & Peers, 2020

Empire Lakes

The Empire Lakes project proposes to construct 3,450 multifamily residential units, 80,000 square feet of office, and 115,000 square feet of retail in Rancho Cucamonga. The Project is located on parcels off of 6th Street between Miliken Avenue and Cleveland Avenue.

This Project could potentially be screened. It is not located in low VMT generating zone but is located in a TPA. The retail portion of the project is over 50,000 square feet and the office could not be screened based on land use type. The multi-family residential units could be screened if they are built as their own project and were designated low income or permanent supportive housing units. The Project could not be screened based on total daily trips, as it would generate more than 110 daily trips.

Although the Project could be considered for screening, a full VMT analysis was performed for the purposes of testing. The OD VMT/SP is below the City and County Existing averages. The OD VMT/SP is above the City and County General Plan Buildout averages. The Project is mixed-use, so VMT/SP is the appropriate metric for consideration of project-generated impacts.

In the cumulative year model VMT was also calculated using the boundary method. Citywide VMT increases with the addition of the project.

Empire Lakes: OD/PA Method

TAZ – With Project			City – No Project			County – No Project		
OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp
33.04	24.08	15.29	Base Year (Existing)					
			37.45	14.82	17.25	38.67	15.85	17.10
			Cumulative Year (General Plan Buildout)					
			29.94	12.56	14.71	32.23	14.57	14.61
Impacts								
Option 1 – OPR Guidance 15% Below Existing			Impact		VMT/SP is the recommended metric for mixed-use projects	Impact		VMT/SP is the recommended metric for mixed-use projects
Option 2 – ARB GHG Goals 14.3% Below Existing			Impact			Impact		
Option 3 – Better than General Plan Buildout			Impact			Impact		
Option 4 – Better than Existing			No Impact			No Impact		

Source: Fehr & Peers, 2020

Empire Lakes: Boundary Method

Citywide VMT/SP	
Scenario	VMT/SP
No Project	14.91
With Project	15.11
Impacts	
Increase Citywide VMT/SP	Impact

Source: Fehr & Peers, 2020

Residence Inn

The Residence Inn project proposes to construct a new 126 room hotel in Rancho Cucamonga. The Project is located at 6th Street and Haven Avenue.

The service population for a hotel should include the estimated number of visitors. This VMT-generating group is not captured in the travel demand model socio-economic (SED) data but is a part of the service population of this land use. For the purposes of this testing, 150 visitors per day (80% occupancy at 1.5 persons per room) were assumed as part of the service population. Future project analysis that includes hotels should use project information to determine the appropriate number of visitors to add to the service population.

This Project does not meet screening criteria. It is not located in a TPA or a low VMT generating zone. A hotel does not meet screening criteria based on land use type. The Project could not be screened based on total daily trips, as it would generate more than 110 daily trips.

Therefore, a full VMT assessment would be required. The OD VMT/SP is above the City Existing average but below the County Existing average. The OD VMT/SP is below the City and County General Plan Buildout averages. The PA HBW VMT/Emp is higher than the City and County Existing and General Plan Buildout averages.

In the cumulative year model VMT was also calculated using the boundary method. Citywide VMT increases with the addition of the project.

Residence Inn: OD/PA Method

TAZ – With Project			City – No Project			County – No Project		
OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp
34.36	0.00	20.84	Base Year (Existing)					
			37.45	14.82	17.25	38.67	15.85	17.10
			Cumulative Year (General Plan Buildout)					
			29.94	12.56	14.71	32.23	14.57	14.61
Impacts								
Option 1 – OPR Guidance 15% Below Existing			Impact	No Project HB VMT/Pop	Impact	Impact	No Project HB VMT/Pop	Impact
Option 2 – ARB GHG Goals 14.3% Below Existing			Impact		Impact	Impact		Impact
Option 3 – Better than General Plan Buildout			Impact		Impact	Impact		Impact
Option 4 – Better than Existing			No Impact		Impact	No Impact		Impact

Source: Fehr & Peers, 2020

Residence Inn: Boundary Method

Citywide VMT/SP	
Scenario	VMT/SP
No Project	14.91
With Project	14.92
Impacts	
Increase Citywide VMT/SP	Impact

Source: Fehr & Peers, 2020

Urgent Care

The project proposes to construct a new urgent care facility in Apply Valley.

This Project could potentially be screened. It is not located in a TPA but is in a low VMT generating zone. Urgent care facilities serve the local community and could be screened based on land use type. The Project could not be screened based on total daily trips, as it would generate more than 110 daily trips.

The service population for a medical facility should include the estimated number of patients. This VMT-generating group is not captured in the travel demand model socio-economic (SED) data but is a part of the service population of this land use. For the purposes of this testing, 90 patients per day were assumed as part of the service population. Future project analysis that includes hospitals, urgent care, clinics, or other medical use should use project information to determine the appropriate number of patients to add to the service population.

The Project OD VMT/SP is lower than the City and County Existing and General Plan Buildout averages. The Project PA HBW VMT/Emp is higher than the City and County Existing and General Plan Buildout averages.

In the cumulative year model VMT was also calculated using the boundary method. Citywide VMT/SP experiences an extremely small decrease with the addition of the project.

Urgent Care: OD/PA Method

TAZ – With Project			City – No Project			County – No Project		
OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp	OD VMT/SP	PA HB VMT/Pop	PA HBW VMT/Emp
22.93	0.00	19.58	Base Year (Existing)					
			37.45	14.82	17.25	38.67	15.85	17.10
			Cumulative Year (General Plan Buildout)					
			33.18	16.33	11.39	32.23	14.57	14.61
Impacts								
Option 1 – OPR Guidance 15% Below Existing			No Impact	No Project HB VMT/Pop	Impact	No Impact	No Project HB VMT/Pop	Impact
Option 2 – ARB GHG Goals 14.3% Below Existing			No Impact		Impact	No Impact		Impact
Option 3 – Better than General Plan Buildout			No Impact		Impact	No Impact		Impact
Option 4 – Better than Existing			No Impact		Impact	No Impact		Impact

Source: Fehr & Peers, 2020

Urgent Care: Boundary Method

Citywide VMT/SP	
Scenario	VMT/SP
No Project	9.33
With Project	9.33
Impacts	
Increase Citywide VMT/SP	No Impact

Source: Fehr & Peers, 2020