Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment (LOS)

October 2021

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AUTHORITY

The City of Rialto regulates development within the City through its General Plan Policies, and Municipal Code, in addition to conformance with Local Agreements (CMP) and State Laws (CEQA) and (NEPA).

The City of Rialto General Plan Level of Service (LOS) threshold is contained in Policy 4-1.2.0 and Policy 4-1.21 and shown on page 8 of this document.

Consistent with Municipal Code XXX, the City of Rialto Transportation Commission reviews all Traffic Impact Analysis reports and proposed mitigation including the payment of improvement fair share contribution for consideration and approval.

STATE LAWS / CEQA

SB 743, signed by the Governor in 2013, changed the way transportation impacts are identified at a State level. Specifically, the legislation directed the Office of Planning and Research (OPR) to look at different metrics for identifying transportation as a CEQA impact. The Final OPR guidelines approved vehicle miles of travel (VMT) as the preferred metric moving forward. The Natural Resources Agency completed the rule to modify the CEQA guidelines in December of 2018.

Congestion Management Plan (CMP)

In 1989, the State of California added Chapter 2.6 by statute along with Chapter 106, Section 9 to address Congestion Management. In 2002, the statute was amended with Section 65088 being added. In this section, the state concluded the economy was critically dependent upon transportation and that the street and roadway system in existence was designed for far fewer vehicles than were currently using the system. It established the requirement for federal, state and local agencies to join with transit districts, business, private and environmental interests to develop and implement comprehensive strategies to develop appropriate responses to transportation needs. Section 65089 mandated a congestion management program that required biannual updates for every county that included an urbanized area and it required inclusion of every city as well as the county. The City of Rialto joined with the County of San Bernardino and the surrounding cities in developing a unified Congestion Management Plan that was first adopted November 4, 1992 and subsequently amended.

The enactment of the Congestion Management Plan (CMP) law as contained in Government Code Sections 65088 and 65089 (last updated in 2016) and the City's adoption of the San Bernardino County Congestion Management Plan set forth the requirements for Traffic Impact Analysis Reports for specific projects. The City of Rialto LOS threshold shall apply to all Congestion Management Program roadways/intersections; in some cases, thresholds may be more conservative than CMP requirements.

Requirement for Traffic Impact and VMT Analyses

To ensure conformance with the Rialto General Plan, Rialto Municipal Code, Federal and State environmental legislation, SB 743 and the Congestion Management Plan, the City of Rialto requires

development projects to analyze and report on traffic and circulation impacts caused by new development or re-development. This requirement also applies to General Plan Amendments (GPA), Specific Plans (SP), and Specific Plan Amendments (SPA). This requirement for analysis is accomplished with a Traffic Impact Analysis (TIA) submittal, reviewed and approved by the Rialto Public Works Director/City Engineer. The TIA must be prepared in conformance with requirements established by the City of Rialto, and must be prepared, signed and sealed by the Traffic or Civil Engineer, registered in the State of California, who is qualified to practice traffic and/or civil engineering in the State of California.

PURPOSE

The purpose of these Traffic Impact Analysis (TIA) Guidelines is to provide general instructions for analyzing the potential transportation impacts of proposed development projects and land use changes (e.g., General Plan Amendments and zoning changes). These recommendations are general guidelines, and the City of Rialto City Engineer has the discretion to modify the TIA requirements based on the unique characteristics of a particular project.

A TIA is generally required to identify potential traffic impacts and to determine appropriate traffic mitigation measures as a part of various types of environmental documents, or as a separate document required by the City, to adequately assess the impacts of a proposed project. Unless exempted by City (see Submittal Requirements, page 10), a TIA will be required in the following cases:

- Proposed Development: Any development project that is likely to have a traffic impact on the City's circulation system. Traffic impacts to be considered are increased traffic volumes on any street; any operational traffic issues (i.e. traffic signal operations, increased delay, restricted pedestrian movements, modified roadway access, limited sight distance, inadequate ingress/egress, inadequate storage volume for required turning movements, etc.), or other concerns identified by the City.
- General Plan Amendments and Specific Plans: Will the circulation system for the area be able to provide the required level of service (LOS) with the additional traffic generated by the proposed land use changes? If not, what improvements will be required to provide the required acceptable Level of Service?

GENERAL PROCEDURES FOR EVALUATING TRAFFIC IMPACTS AND VEHICLE MILES TRAVELED

- These guidelines incorporate specific approved City of Rialto requirements & past practices for the preparation of LOS analysis.
- These guidelines include California Environmental Quality Act (CEQA) expectations prompted by Senate Bill 743 (SB 743).

The City of Rialto does not prepare Project Traffic Impact Analysis. The technical report is part of the Project requirement and approval process.

Project Scoping Agreement

To avoid unnecessary delays or revisions and to streamline the TIA preparation and review process, the City requires applicant to submit a **Project Scoping Agreement to the City Planning Department**. Even if a Project is exempt from level of service analysis, the Project Scoping must provide proposed VMT analysis or document screening criteria.

The City Engineer will review and approve the Scoping Agreement.

Approval of the Scoping Agreement in no way relieves the developer from conditions of approval established by the City in a more complete project review process conducted by the Development

Review Committee (DRC), the Transportation Commission, Planning Commission and/or City Council.

A meeting with the Congestion Management Agency and/or Caltrans, where applicable, is also encouraged to address issues associated with large or extraordinary projects.

Level of Service Impact Analysis

The Scoping Agreement includes analyzed trip generation and project average daily traffic which defines the extent of a LOS analysis, ie: full vs. focused study. Generally, if Project AM/PM peak hour trip generation is 1-49 trips the minor (focused) study requirements apply. Over 50 peak hour trips trigger the full (major) study.

Certain types of projects, because of their size, nature, or location, may be exempt from the requirement of preparing a TIA.

*See complete list of type of development which may be exempt on page 16-17.

Upon acceptance of the completed TIA (minor or major) by the City Engineer, the report will be presented to the Transportation Commission for approval and Conditions of Approval.

VMT Analysis

In accordance with SB 743, all Projects must address vehicle miles traveled. Screening criteria may be applicable however the screening process must be documented in a memorandum.

*See Screening criteria is in VMT section of these guidelines.

The analysis and/or screening conclusions will be included in the Project CEQA documentation.

Thresholds & Methodology

LEVEL OF SERVICE STANDARDS (INTERSECTIONS)

The City of Rialto 2010 General Plan Update identifies policies applicable to minimum Level of Service within the City, as follows:

> Policy 4-1.20: Design City streets so that signalized intersections operate at Level of Service (LOS) D or better during the morning and evening peak hours, and require new development to mitigate traffic impacts that degrade LOS below that level. The one exception will be Riverside Avenue south of the Metrolink tracks all the way to the City's southern border, which can operate at LOS E.
>
> Policy 4-1.21: Design City streets so that unsignalized intersections operate with no vehicular movement having an average delay greater than 120 seconds during the morning and evening peak hours, and require new development to mitigate traffic impacts that increase delay above that level.

New development is required to mitigate traffic impacts exceeding these levels.

Infrastructure deficiencies are deemed to occur at any intersection in which the project causes the LOS to fall below level D or the peak hour delay increases as follows:

LOS A/B = By 10.0 seconds

LOS C = By 8.0 seconds

LOS D = By 5.0 seconds

LOS E = By 2.0 Seconds

LOS F = By 1.0 seconds

Roadway segments may or may not be governed by signalized intersections at the ends of the segment. If the segments exceed 1,500 feet and the V/C ratio exceeds 1.0, the segment must be mitigated even if improved intersections at the ends do not exceed LOS D. Additional study may be required or presented to support allowing V/C to exceed 1.0, but are subject to the discretion of the Public Works Director/City Engineer and Transportation Commission, on a case by case basis, as to the acceptability of allowing such segments being un-mitigated.

CITY OF RIALTO ROADWAY SEGMENT CAPACITY (1)

Roadway Classification	No. of Lanes	Two-Way Traffic Volume (ADT)(2)		
		Service Level C	Service Level D	Service Level E
Local	2	2,500-2,799	2,800-3,099	3,100 +
Collector (60' or 64')	2	9,900-11,199	11,200-12,499	12,500 +
Industrial (45')	2	9,900-11,199	11,200-12,499	12,500 +
Arterial (3)	2	14,400-16,199	16,200-17,999	18,000 +
Secondary Highway	4	16,900-19,399	19,400-21,199	22,000 +
Modified Arterial (100')	4	26,200-29,599	29,600-32,999	33,000 +
Arterial (120')	6	38,700-44,099	44,100-49,499	49,500 +

Notes:
(1) All capacity figures are based on optimum conditions and are intended as guidelines for planning purposes only
(2) Maximum two-way ADT values are based on the 1999 Modified Highway Capacity Manual Level of Service Tables.
(3) Two lane roads designated as future arterials that conform to arterial design standards for vertical and horizontal alignments are analyzed as arterials.

VEHICLE MILES TRAVELED (VMT)

For purposes of SB 743 compliance, a VMT analysis shall be conducted for land use projects as deemed necessary by the Public Works/City Engineer and will apply to projects that have the potential to increase the average VMT per service population (e.g. population plus employment) above the **County of San Bernardino benchmark VMT average of 32.7%.**

Screening
Project Screening Criteria, both by daily trip thresholds and by project type, can be found in the VMT Section of this Report.

Methodology/Modeling
Project-generated VMT shall be extracted from the travel demand forecasting model using the **origin-destination trip matrix**

In some cases, the City will allow calculation of Project-generated VMT using the **production-attraction trip matrix**. This will be determined at Project Scoping step.

Methodology/Threshold

The City of Rialto project-generated VMT Methodology, Threshold option is consistent with RTP/SCS Future Year VMT Projections and is better than the General Plan horizon year reflecting the goals and values of the community.

A project would result in a significant project-generated VMT impact if either of the following conditions are satisfied:

1. The baseline project-generated VMT per service population **exceeds the San Bernardino County regional average** baseline of 32.7% VMT per service population, or
2. The cumulative project-generated VMT per service population **exceeds the San Bernardino County regional average baseline** of 32.7% VMT per service population

Submittal requirements

TIA SCOPING AGREEMENT

It is in the interest of all parties that the participants fully understand and come to agreement on the assumptions and methodology prior to conducting the actual analysis. This is particularly important when considering using assumptions that vary from the norm. The Scoping Agreement, **Exhibit A** of this document, requires signature before proceeding to report preparation or the collection of traffic counts.

The Project Scoping Agreement shall include a memorandum to introduce the project; with site plan, exhibits showing the study intersections, **trip generation table**, **trip distribution** assumptions, existing intersection geometry and type of control, proposed access points & specific issues to be addressed in the study.

Trip Generation for Truck Intensive Uses

All warehousing shall use the ITE Warehouse Land Use (LU 150) trip generation rate unless otherwise approved.

- The City of Rialto does not accept High Cube (LU 152) trip generation rate without prior approval unless a specific tenant has been identified by the developer and is the owner of the property or has a minimum 10-year lease and can demonstrate both high levels of mechanization and palletized operations.

Passenger Car Equivalent (PCE)

Industrial, warehousing, surface mining, distribution centers and all heavy use truck projects shall convert trucks to passenger car equivalent (PCE's).

The City of Rialto no longer accepts the City of Fontana, Truck Trip Generation Study (2003) as a basis for determining the percentage of truck trips generated by a warehousing project. Instead, the City implements the South Coast Air Quality Management District (AQMD) recommendations requiring that warehousing use a minimum truck rate of 40% of total project traffic.

Additionally, the City requires that the truck mix for warehousing to be in accordance with the current measured rates within Rialto, as follows: 70% 4-axel, 28% 3-axel, and 2% 2-axel trucks. PCE conversion rates, in accordance with the SB CMP shall be applied as follows: PCE = 3 for 4-axel and above, PCE =2 for 3-axel and PCE + 1.5 for 2-axel trucks.

Trip Distribution

Local truck routing shall be identified for review and approval. Truck distribution shall be routed in the direction of intended travel to the nearest freeway access point in the desired direction of travel. Opposite direction of travel to freeway ramps is not permitted. Accordingly, the Truck Distribution exhibits must be included in the TIA Scope.

Vehicle Miles Traveled

Preliminary VMT assessment should be included to assess project screening criteria and/or need for modeling evaluation.

Scoping Conclusions: At a minimum, the submittal for evaluating Project impacts and analyzing the potential transportation infrastructure deficiencies of a proposed development includes the preparation and approval of each of the following:

- VMT Screening Analysis / Modeling Report
- Project Scoping Agreement

If the Project Scoping concludes further studies are needed the applicant shall proceed with a Draft TIA. The type or extent of study; full analysis or focused analysis, will also be determined by the City upon approval of the Scoping Agreement.

TRAFFIC IMPACT ANALYSIS / LEVEL OF SERVICE

PROJECTS EXEMPT FROM LEVEL OF SERVICE ANALYSIS

Certain types of projects, because of their size, nature, or location, may be exempt from the requirement of preparing a TIA.

However, the Public Works Director, City Engineer or Transportation Commission may require that a TIA be prepared for any project, regardless of size, nature or location if there are concerns of traffic safety, operational issues, or if a project is located in an area significantly impacted by traffic.

The following types of development projects may be exempt with approval from the Public Works Director/City Engineer:

1. Residential Parcel Maps (4 lots or less)
2. Single Family residential subdivisions (10 lots or less)
3. Apartments and other Multiple Family projects (50 units or less)
4. Plot Plans and Use Cases for projects of one acre or less
5. Lodges, Community Centers, Neighborhood Parks and Community Parks.
6. Commercial Storage Facilities (less than 10 acres)
7. Congregate Care Facilities that contain significant special services, such as medical facilities, dining facilities, recreations facilities and support retail facilities.
8. Projects with 51-100 or less peak-hour trips in areas where there exists a current (less than one year old) comprehensive traffic analysis, where infrastructure funding mechanisms are in place, or the roadway system is built out in accordance with the General Plan within a 0.50 mile radius. The Public Works Director/City Engineer may require a local/focused TIA for projects that have the potential to create adverse impacts to the circulation system.
9. Any proposed use which can demonstrate, based on the most current Trip Generation Manual, published by the Institute of Traffic Engineers (ITE), or other approved trip generation data, that there will be less than 50 vehicle trips during peak hours and no other operational concerns exist

These exemptions will apply in most cases; however, the Public Works Director/City Engineer reserves the right to require a TIA for any development, regardless of size and/or type. The level of analysis shall be determined by the Public Works Director/City Engineer on an individual basis. The following are examples of situations and/or conditions where an exemption would not be granted:

a. The presence of an existing safety problem
b. The location/development is likely to create or has the potential to create a safety problem
c. The location of the development is in an environmentally or otherwise sensitive area, or in an area which is likely to generate public controversy.

d. The presence of a nearby substandard street or intersection. This is normally any street or intersection at Level of Service (LOS) D or worse or where substandard improvements exist (street width, pavement section, improvements, substandard signals etc.)
e. There is a need for a focused study due to access, circulation or operational issues.
f. A request for any affected agency (adjacent City, County, Caltrans) which is deemed by the Public Works Director/City Engineer to be reasonable and rational.

If not exempt:

If the TIA Scoping Agreement has determined that a Traffic Impact Analysis for Level of Service is required; the type of study will also be approved.

CEQA COMPLIANCE

- VMT Applies to every Project regardless of need for or type of TIA analysis. Screening may be applicable; however, the screening process steps must be documented in a standalone document.

Full Study (major) Traffic Impact Analysis (LOS)

A major traffic study is required for any Project that generates 50 or more trips during any peak hour without consideration of pass-by trips.

- At a minimum, the study area shall include any intersection of "Collector" to higher classification street, with "Collector" or higher classification, shown on Rialto Circulation Element, at which the proposed project will add 50 or more A.M. or P.M. peak hour trips within 5 miles of the Project. PCE factors apply to this threshold.

TRUCK INTENSIVE USE TRIP GENERATION FOR CITY OF RIALTO (applies to all studies)

Industrial, warehousing, surface mining, distribution centers and all heavy use truck projects shall convert trucks to passenger car equivalent (PCE's) to apply this threshold.

All warehousing shall use the ITE Warehouse (LU 150) trip generation rate unless otherwise approved.

The City of Rialto does not accept High Cube (LU 152) trip generation rate without prior approval unless a specific tenant has been identified by the developer and is the owner of the property, or has a minimum 10-year lease and can demonstrate both high levels of mechanization and palletized operations.

PCE

The City of Rialto no longer accepts the City of Fontana, Truck Trip Generation Study (2003) as a basis for determining the percentage of truck trips generated by a warehousing project. Instead, the City implements the South Coast Air Quality Management District (AQMD) recommendations requiring that warehousing use a minimum truck rate of 40% of total project traffic. Additionally,

the City requires that the truck mix for warehousing to be in accordance with the current measured rates within Rialto, as follows: 70% 4-axel, 28% 3-axel, and 2% 2-axel trucks. PCE conversion rates, in accordance with the SB CMP shall be applied as follows: PCE = 3 for 4-axel and above, PCE =2 for 3-axel and PCE + 1.5 for 2-axel trucks.

Local truck routing shall be identified for review and approval. Truck distribution shall be routed in the direction of intended travel to the nearest freeway access point in the desired direction of travel. Opposite direction of travel to freeway ramps is not permitted. Truck Distribution exhibits must be included in the TIA Scope.

Study Analysis Scenarios (major study)

SINGLE SITE DEVELOPMENTS, TRACTS, PLOT PLANS, USE CASES, ETC.

The analysis of traffic operations and LOS is to be provided for the following conditions and is to include an assessment of traffic mitigation requirements (if needed) for project opening day and future conditions. Obtain both ADT and Peak Hour volumes to determine the baseline year. Prior counts, up to 6 months old, may be approved upon request.

1. Existing conditions – the conditions at the time of TIA preparation without the inclusion of the project generated trips. Existing deficiencies should be identified, but mitigation analysis is not required. The existing conditions analysis must include the full project impact area as defined above.
2. Project opening day conditions - Existing + Ambient + w & w/o Project. The conditions on the opening day of the project for two scenarios: 1) excluding the project traffic and 2) including the project traffic. Include ambient growth rate of 1.5% to 5% as approved by City.
    - Assume full trip generation impact of the site. The peak traffic generation hour of the development, if different from peak AM and PM hours, must also be identified and the total vehicle trips during the peak-hour of the generator must be estimated. This will facilitate a decision regarding the need to evaluate time periods other than the peak-hours of the adjacent streets.
3. Future conditions – Existing + Ambient + Project + Cumulative. Full mitigation analysis is to be performed for future conditions. Cumulative projects include projects approved but not yet completed which may add traffic to study intersection/segment links within 1 mile to those being analyzed.
    - This analysis shall include any freeway ramp location expected to accept 20% of project traffic.
    - If the LOS cannot be maintained or a deficiency occurs and cannot be mitigated through existing CMP impact fees or other approved funding mechanisms, or if the requirement for the mitigation exists upon completion of project; the developer may be required to complete the improvement as a condition of approval. Such work may be subject to development agreements, reimbursement agreements or other mechanisms at the sole discretion of the City.

4. Proposed Mitigation Measures
    - Consideration shall be made for existing right-of-way, intersection geometry and transitions, environmental constraints, utility conflicts, and improvement costs. Should the City determine that mitigation is infeasible, the unresolved impacts shall be itemized.
    - All TIAs which propose increasing travel lanes on a segment or intersection that is either beyond the existing conditions or General Plan buildout conditions, shall clearly identify the impacts with such a change. The TIA shall also identify a funding mechanism for said improvements.
    - Feasibility diagrams of said improvements must be included.
5. Project Phasing
    - In the event project phasing is proposed; traffic conditions must be analyzed for each year with mitigation per phase as required.
6. General Plan Traffic Conditions. Traffic projections for General Plan Buildout conditions shall utilize the City's traffic model, growth projections to buildout of the General Plan or other approved model. The Engineer shall use the model projections as the basis for determining turning movement volumes for the required intersection analysis. A manual assignment of project traffic added to the General Plan Buildout traffic volumes may be used to determine total future traffic. This analysis will determine if the Circulation Element of the General Plan is adequate to accommodate projected traffic at the target LOS, or if additional delay reduction measures or fair-share contributions are necessary.

Focused (minor) Traffic Study (LOS)

Alternatively, a focused traffic study may be required for any Project that generates 1-49 trips during any peak hour without consideration of pass-by trips to the existing circulation system; or as directed by the City Engineer. The City of Rialto reserves the right to require that a TIA be prepared for any development, if there are safety concerns, operational issues, or if located in an area known to be impacted by traffic. At a minimum, the focused study shall assess the project's points of access and adjacent intersections in the immediate vicinity of the project.

In addition, focused traffic studies will be required for all maps which were previously approved by a Specific Plan to identify Project specific impacts and mitigation, including fair share analysis of DIF funded improvements. The study area, in this instance, will default to:

- At a minimum, the study area shall include any intersection of "Collector" to higher classification street, with "Collector" or higher classification, shown on Hesperia Circulation Element, at which the proposed project will add 50 or more A.M. or P.M. peak hour trips. PCE factors apply to this threshold.

Study Analysis Scenarios (Focused Study)

Focused studies analysis scenarios are not as stringent as focused studies and are as follows:

Existing; Project Opening Year with Background Traffic; Project Opening Year with Background Traffic and Proposed Project; Project Opening Year with Background Traffic and Proposed Project plus Mitigation.

TIA Report Content & Criteria

The following outline represents the recommended structure for all TIA Reports. The report must be prepared, signed and sealed by a Traffic or Civil Engineer, registered and qualified to practice traffic and/or civil engineering in the State of California. See Exhibit C for specific format structure.

Project Introduction

Set the stage for the analysis, providing background information necessary for the unfamiliar reader to understand the magnitude of the project, location of the project and special characteristics.

Project, General Plan, or Specific Plan description

The description must include project size by land use type, location of project, location of proposed access points to the local and regional roadway system and movements from adjacent streets allowed into and out of the project. This should be shown on the SITE diagram. Special characteristics of the site, such as unusual daily or seasonal peaking characteristics or heavy involvement of truck traffic, should be noted.

Methodology & Study Area

Provide a general description (overview) of the process used to analyze the project. Analysis years/scenarios should be specified and the approach to the modeling/traffic forecasting process should be explained. The sources of information should be identified.

Signalized intersection/Level of Service shall be analyzed using the Operational Method as described in Chapter 16, Section II of the Transportation Research Board (TRB) Highway Capacity Manual (HCM). Reference Exhibit B for default input parameters. Establish those not listed through Highway Capacity Manual (HCM) Chapters 16 & 17 (most recent edition) to assess both signalized and unsignalized intersection.

Additionally, all study intersections which are not signalized shall be analyzed for signal warrants per the CA MUTCD criteria. The calculation worksheets shall be added to the appendices.

Generally (Major Study):

1. At a minimum, the study area shall include any intersection of "Collector" to higher classification street, with "Collector" or higher classification, shown on Rialto Circulation Element, at which the proposed project will add 50 or more A.M. or P.M. peak hour trips within 5 miles of the Project. PCE factors apply to this threshold.

2. The study area shall also include any freeway interchanges within 2 miles that is designated to take more than 40% of total traffic from the project, irrespective of the total number.
3. Potential of a LOS deficiency downgrade of any of the following, to include LOS C during any peak hours using HCM methods of analysis on any individual existing traffic movement.
   - Existing Roadway Street Section
   - Existing Signalized Intersection
   - Un-signalized intersection
4. Signalized intersections to which project traffic decreases performance, (V/C ratios exceeding 1.0) must submit an effective solution to mitigate impacts. Signal timing modifications or right turn prohibitions can be incorporated in a signalized intersection analysis, but any timing changes must be specifically identified in the TIA.
5. If the timing changes include a coordinated system, the TIA must analyze the entire system.
6. Project driveways, and school zone intersections if within immediate vicinity of trip distribution.

CMP:

In addition, all freeway links with 100 or more peak-hour project trips (two-way); and CMP roadways with 50 or more peak-hour project trips (two-way).

Also, within the defined study area, all "key intersections," as listed in the most current CMP, must be analyzed. Key intersections represent intersections of CMP roadways plus those additional intersections recognized by local jurisdictions and/or San Bernardino County Transportation Authority (SBCTA) to be important to mobility on CMP roadways. At a minimum, key intersections will include CMP signalized intersections operating at LOS E or below. The distribution of traffic must be shown for all roadways on which project trips occur (except those for internal circulation), whether or not they are on the CMP network.

Roadway Link Analysis

Roadway link analysis shall be performed by comparing the Average Daily Traffic (ADT) on a segment to the Roadway Segment Analysis as shown in Thresholds and Methodology Sections.

Roadway link analysis is always required for a TIA analyzing a GPA, SP or SPA and may be required for other studies.

GENERAL PLAN AMENDMENTS, SPECIFIC PLANS, SPECIFIC PLAN AMENDMENTS OR LANE USE CHANGES

Development proposals that include any of the above or other approvals that increases traffic beyond the approved General Plan will be required to perform an additional build-out analysis to evaluate long term impacts. This analysis should evaluate proposed changes to applicable plans. The required analysis will determine if the Circulation Element of the General Plan is adequate to accommodate the projected traffic at the target LOS, or if additional mitigation is necessary. A

phasing plan for all Specific Plans or Specific Plan Amendments that identifies mitigation for each development phase is also required.

If any of the above projects create traffic impacts greater than the projections in the current traffic models, a Build-Out analysis may be requested utilizing a model approved by the City; to develop a more detailed focused model run to determine the projected Build-Out traffic. The consulting traffic engineer shall use the traffic model projections as the basis for determining turning movement volumes to be used in the intersection analysis. A post processing methodology in the National Cooperative Highway Research Program (NCHRP) may be used to calculate AM and PM peak hour turning movement volumes from the link volume ADT. A manual assignment of the project traffic added to the Build-Out traffic typically is used to determine total Build-Out traffic with Project. The TIA shall include a discussion of how manual turning movement assignments were developed.

Funding Mechanisms / Fair Share Analysis (major and focused reports)

Project contribution to total new volumes (forecast minus existing) on analyzed links and intersections.

Project Mitigation

The mitigation of project impacts is designed to identify potential LOS infrastructure deficiencies and address them to support the City of Rialto goals and objectives; before they occur. Additionally, impacts beyond the boundaries of the jurisdiction must be identified in the same fashion as impacts within the jurisdictional boundary. Impacted local agencies outside the boundary will be provided an opportunity for review of the TIA Report. Negotiations with these outside jurisdictions and with Caltrans are a possible outcome for the development proponent, depending on the magnitude and nature of the impacts.

For the CMP, the mitigations must bring the roadway into conformance with the LOS standards established for the CMP. However, the City of Rialto requires a minimum LOS D within its jurisdictional boundaries.

Fair Share Analysis

Compute the ratio of traffic generated by the proposed development to the total new traffic (including project traffic) generated between the existing condition and forecast year for each analyzed link or intersection.

- The purpose of this calculation is to identify the proportion of volume increase that can be attributed to the proposed project. The calculations are to be conducted for all applicable peak hours. The results must be formulated in a Fair Share Table by percentages to the nearest tenth of a percent.

COST ESTIMATES

An industry standard cost estimate must be included & calculated using the above percentages, per mitigation improvement.

The costs of mitigating deficiencies must be estimated for deficiencies that occur either within or outside the boundaries of the jurisdiction. The costs must be identified separately for each jurisdiction and for Caltrans roadways. Prior studies and cost estimates by SBCTA, Caltrans and other jurisdictions may be referenced. If a mitigation measure is identified as necessary to bring a deficiency into conformance with the LOS standard, but physical or environmental constraints make the improvement impractical, an equivalent contribution may be considered to improve the LOS elsewhere on the system or another location PROVIDING DIRECT RELIEF.

PROJECT DESIGN FEATURES

Projects may request design features such as traffic signal at project entrance. In such case, the proposed signal must be analyzed for signal warrants, progression analysis on the corridor to include existing and planned signalized intersections upstream and downstream, signal spacing and queuing analysis for adjacent existing or proposed signals and/or un-signalized storage pocket queues.

In all cases, if the City allows the installation based on analysis results, the Project proponent will be responsible for all costs. The Project Design feature shall be listed on the Fair Share Table & clearly indicate payment responsibility.

OTHER TRANSPORTATION IMPROVEMENTS ALREADY PROGRAMMED AND FULLY FUNDED

Only transportation improvements that are fully funded and programmed should be assumed in forecast.

Summary List of Typical Figures and Tables to Be Included in a TIA Report:

- Project location and 1-mile limit study area (map)
- Project size by land use (table)
- Trips generated by land use for AM and PM weekday peak-hours of adjacent street traffic and for daily traffic inbound and outbound (table) and other applicable peak-hours
- List of other planned transportation improvements affecting the project
- Existing intersection and link volumes and levels of service (map)
- Distribution and assignment of project trips (map)
- Forecast traffic without project and with project for applicable peak-hours (map or table)
- LOS without project and with project (map or table) • Improvements required to mitigate project opening day and forecast year scenario impacts (map and/or table)

- Fair Share - Ratio of project traffic to new traffic (new traffic means the difference between existing and forecast) on analyzed links or intersections (map or table) • Improvement costs by jurisdiction and for Caltrans roadways

VMT GUIDELINES & GUIDANCE

The City of Rialto has produced these VMT Guidelines to outline the specific steps for complying with the new CEQA expectations for VMT analysis.

Organized as follows for CEQA assessment (e.g. VMT analysis).

1. CEQA Assessment - VMT Analysis
2. CEQA Assessment - Active Transportation and Public Transit Analysis
3. VMT Transportation Impact Analysis Format

The following criterions will assist in determining VMT impact thresholds and mitigation requirements for various land use projects' TIAs in the City of Rialto.

The City of Rialto project-generated VMT Methodology, Threshold option is consistent with RTP/SCS Future Year VMT Projections and is better than the General Plan horizon year reflecting the goals and values of the community.

Analysis Methodology

For purposes of SB 743 compliance, a VMT analysis shall be conducted for land use projects as deemed necessary by the Public Works/City Engineer and will apply to projects that have the potential to increase the average VMT per service population (e.g. population plus employment) compared to the **County of San Bernardino VMT average of 32.7** Normalizing VMT per service population essentially provides a transportation efficiency metric that the analysis is based on. Using this efficiency metric allows the user to compare the project to the remainder of the unincorporated area for purposes of identifying transportation impacts.

Project Screening

Projects which "screen out" must provide documentation memorandum to support conclusion using the following methods:

There are three types of screening to effectively screen projects from project-level assessment. These screening steps are summarized below:

Step 1: Transit Priority Area (TPA) Screening

Projects located within a TPA[1] 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] 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.

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 jurisdiction (if the jurisdiction 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.

The SBCTA screening tool can currently be accessed at the following location:

Copy & Paste link into browser.

https://devapps.fehrandpeers.com/sbctavmt/

*Please note this Screening Tool will be migrated onto the SBCTA website in the near future; at that time the above link will no longer be valid.

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 the SBCTA area, 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 estimated for each TAZ. 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.

To identify if the project is in a low VMT-generating area, the analyst may review the SBCTA screening tool and **compare the appropriate baseline TAZ VMT to current County of San Bernardino VMT threshold of 32.7 VMT/Service Population**. Additionally, as noted above, the analyst must identify if the project is consistent with the existing land use within that TAZ and use

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.

professional judgement that there is nothing unique about the project that would otherwise be mis-represented utilizing the data from the travel demand model.

The SBCTA screening tool can be accessed at the following location:

Copy & Paste link into browser.

https://devapps.fehrandpeers.com/sbctavmt/

*Please note this Screening Tool will be migrated onto the SBCTA website in the near future; at that time the above link will no longer be valid.

Step 3: Project Type Screening

- Projects generating less than 110 daily vehicle trips[2]
    - This generally corresponds to the following "typical" development potentials:
        - 11 single family housing units
        - 16 multi-family, condominiums, or townhouse housing units
        - 10,000 sq. ft. of office

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.

In addition to local serving retail, the following uses can also be presumed to have a less than significant impact absent substantial evidence to the contrary as their uses are local serving in nature:

- Local-serving K-12 schools
- Local parks
- Day care centers
- Local-serving gas stations
- Local-serving banks

[2] This threshold ties directly to the OPR technical advisory and notes that 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. Therefore, absent substantial evidence otherwise, it is reasonable to conclude that the addition of 110 or fewer trips could be considered not to lead to a significant impact.

- Local-serving hotels (e.g. non-destination hotels)
- Local-serving medical
- Student housing projects on or adjacent to college campuses
- Local-serving assembly uses (places of worship, community organizations)
- Community institutions (Public libraries, fire stations, local government)
- Local serving community colleges that are consistent with the assumptions noted in the RTP/SCS
- Affordable or supportive housing
- Assisted living facilities
- Senior housing (as defined by HUD)
- 15,000 sq. ft. of light industrial
- 63,000 sq. ft. of warehousing
- 79,000 sq. ft. of high cube transload and short-term storage warehouse

VMT Assessment for Non-Screened Development

Projects not screened through the steps above should proceed with 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) under the following scenarios:

- Baseline conditions - This data is already available in the web screening map.

- Baseline plus project for the project - The project land use would be added to the project TAZ or a separate TAZ would be created to contain the project land uses. A full base year model run would be 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 discussion later in this chapter).

- Cumulative no project - This data is available from SBCTA.

- 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 should be accompanied by a reallocation of a similar amount of land use from other TAZs; especially if the proposed project is significant in size such that it would change other future developments. 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.

The model output should include total VMT, which includes all vehicle trips and trip purposes, and VMT per service population (population plus employment). Total VMT (by speed bin) is needed as an input for air quality, greenhouse gas (GHG), and energy impact analysis while total VMT per service population is recommended for transportation impact analysis·

Both "plus project" scenarios noted above will summarize two types of VMT: (1) project generated VMT per service population and comparing it back to the appropriate benchmark noted in the thresholds of significance, and (2) the project effect on VMT, comparing how the project changes VMT on the network looking at Citywide VMT per service population or a sub-regional VMT per service population and comparing it to the no project condition.

Project-generated VMT shall be extracted from the travel demand forecasting model using the **origin-destination trip matrix** and shall multiply that matrix by the final assignment skims. The project-effect on VMT shall be estimated using a sub-regional boundary (such as a City limit or County line) and extracting the total link-level VMT for both the no project and with project condition.

In some cases, it may be appropriate to extract the Project-generated VMT using the **production-attraction trip matrix**. This may be appropriate when a project is entirely composed of retail or office uses, and there is a need to isolate the home-based-work (HBW) VMT for the purposes of isolating commute VMT. The City should evaluate the appropriate methodology based on the project land use types and context during the project scoping/Scoping Agreement.

A detailed description of this process is attached to these guidelines.

CEQA VMT Impact Thresholds

VMT Impacts

Total VMT (by speed bin) is needed as an input for air quality, greenhouse gas (GHG), and energy impact analysis while total VMT per service population is recommended for transportation impact analysis[3].

[3] **The City of Rialto will use VMT per service population for its impact threshold.**

VMT thresholds provided below are to be applied to determine potential project generated VMT impacts and project's effect on VMT impacts.

A project would result in a significant project-generated VMT impact if either of the following conditions are satisfied:

3. The baseline project-generated VMT per service population **exceeds the San Bernardino County regional average** baseline of 32.7 VMT per service population, or
4. The cumulative project-generated VMT per service population **exceeds the San Bernardino County regional average baseline** of 32.7 VMT per service population.

The project's effect on VMT would be considered significant if it resulted in either of the following conditions to be satisfied:

1. The baseline link-level boundary (County of San Bernardino) VMT per service population increases under the plus project condition compared to the no project condition, or
2. The cumulative link-level boundary (County of San Bernardino) VMT per service population increases under the plus project condition compared to the no project condition.

Please note that the cumulative no project shall reflect the adopted RTP/SCS; as such, if a project is consistent with the regional RTP/SCS, then the cumulative impacts shall be considered less than significant subject to consideration of other substantial evidence

VMT Mitigation Measures

Mitigation should consist of Transportation Demand Management (TDM) measures analyzed under a VMT-reduction methodology consistent with Chapter 7 of the California Air Pollution Control Officers Association (CAPCOA) Quantifying Greenhouse Gas Mitigation Measures (August 2010).

Please note that the CAPCOA Mitigation Measures document is currently being updated. Once adopted, the most recent version of CAPCOA will be utilized.

The overall goal is to reduce trip lengths or the number of trips generated through the use of transportation demand management (TDM) measures

To mitigate VMT impacts, the following choices are available to the applicant:

1. Modify the project's-built environment characteristics to reduce VMT generated by the project
2. Implement Transportation Demand Management (TDM) measures to reduce VMT generated by the project. Measures feasible for most of the SBCTA region/City of Rialto are

summarized on page 30-31 of this document and also found in the California Air Pollution Control Officers Association (CAPCOA) Quantifying Greenhouse Gas Mitigation Measures (August 2010). This Table includes new relevant information since the 2010 publication date which may further progress VMT reduction.

3. Participate in a VMT fee program and/or VMT mitigation exchange/banking program (if they exist) to reduce VMT from the project or other land uses to achieve acceptable levels.

Evaluation of VMT reductions should be evaluated using state-of-the-practice methodologies recognizing that many of the TDM strategies are dependent on building tenant performance over time. As such, actual VMT reduction cannot be reliably predicted and monitoring may be necessary to gauge performance related to mitigation expectations.

CEQA Assessment - Active Transportation and Public Transit Analysis

Potential impacts to public transit, pedestrian facilities and travel, and bicycle facilities and travel can be evaluated using the following criteria.

- A significant impact occurs if the project conflicts with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decreases the performance or safety of such facilities.

Therefore, the TIA should include analysis of a project to examine if it is inconsistent with adopted policies, plans, or programs regarding active transportation or public transit facilities, or otherwise decreases the performance or safety of such facilities and make a determination as to whether it has the potential to conflict with existing or proposed facilities supporting these travel modes.

Detailed VMT Forecasting Information

Most trip-based models generate daily person trip-ends for each TAZ across various trip purposes (HBW, HBO, and NHB, for example) based on population, household, and employment variables. This may create challenges for complying with the VMT guidance because trip generation is not directly tied to specific land use categories. The following methodology addresses this particular challenge among others.

Production and attraction trip-ends are separately calculated for each zone, and generally: production trip-ends are generated by residential land uses and attraction trip-ends are generated by non-residential land uses. OPR's guidance addresses residential, office, and retail land uses. Focusing on **residential and office land uses**, the first step to forecasting VMT requires translating the land use into model terms, the closest approximations are:

- Residential: home-based production trips
- Office: home-based work attraction trips

Note that this excludes all non-home-based trips including work-based other and other-based other trips.

The challenges with computing VMT for these two types of trips in a trip-based model are 1) production and attraction trip-ends are not distinguishable after the PA to OD conversion process and 2) trip purposes are not maintained after the mode choice step. For these reasons, it not possible to use the VMT results from the standard vehicle assignment (even using a select zone re-assignment). A separate post-process must be developed to re-estimate VMT for each zone that includes trip-end types and trip purposes. Two potential approaches to tackle this problem are described below.

Simplified

This approach uses standard model output files and requires minimal custom calculations. It is based on a regional MPO trip-based model with peak (PK) and off-peak (OP) skims and person trip production-attraction (PA) matrices.

- Calculate custom vehicle trip PA matrices from PK and OP person trip matrices
    - Keep trip purposes and modes separate
    - Use average vehicle occupancy rates for drive-alone and shared ride trips
- Use the final congested drive-alone PK and OP skim matrices to estimate trip length between zones
- Multiply the skim matrices by vehicle trip matrices to estimate VMT
- Sum the PK and OP results to estimate daily VMT and aggregate mode trip purpose and mode
- Calculate automobile VMT for individual TAZs using marginal totals:
    - Residential (home-based) - row total
    - Office (home-based work) - column total

Detailed

The process described above simplifies the approach but does not account for different congestion patterns throughout the day (AM, MD, PM, and NT), the direction of travel (all productions are origins and all attractions are destinations), or the benefits of exclusive lanes (HOV or HOT lanes). This more detailed approach attempts to address these limitations and better estimate the VMT produced by the vehicle assignment model.

- Re-skim final loaded congested networks for each mode and time period
- Run a custom PA to OD process that replicates actual model steps, but:
    - Keeps departure and return trips separate
    - Keeps trip purpose and mode separate
    - Converts person trips to vehicle trips based on auto occupancy rates and isolates automobile trips
    - Factors vehicle trips into assignment time periods
- Multiply appropriate distance skim matrices by custom OD matrices to estimate VMT
- Sum matrices by time period, mode, and trip purpose to calculate daily automobile VMT
- Calculate automobile VMT for individual TAZs using marginal totals:
    - Residential (home-based) - row of departure matrix plus column of return matrix
    - Office (home-based work) - column of departure matrix plus row of return matrix

Appropriateness Checks

Regardless of which method is used, the number of vehicle trips from the custom PA to OD process and the total VMT should match as closely as possible with the results from the traditional model process. The estimated results should be checked against the results from a full model run to

understand the degree of accuracy. Note that depending on how each model is setup, these custom processes may or may not include IX/XI trips, truck trips, or special generator trips (airport, seaport, stadium, etc.).

When calculating VMT for comparison at the study area, citywide, or regional geography, the same methodology that was used to estimate project-specific VMT should be used. The VMT for these comparisons can be easily calculated by aggregating the row or column totals for all zones that are within the desired geography.

TDM STRATEGY EVALUATION - DRAFT V 1.0

Relevant Strategies for Implementation in SBCTA Jurisdictions Due to Land Use Context

					New Information Since CAPCOA Was Published in 2010		
CAPCOA Category	CAPCOA #	CAPCOA Strategy	CAPCOA Reduction	Strength of Substantial Evidence for CEQA Impact Analysis?	New Information	Change in VMT reduction compared to CAPCOA(1)	Literature or Evidence Cited
Land Use/ Location	3.1.3	LUT-3 Increase Diversity of Urban and Suburban Developments	9%-30% VMT reduction due to mixing land uses within a single development	Adequate	1] VMT reduction due to mix of land uses within a single development; 2] Reduction in VMT due to regional change in entropy index of diversity.	1] 0%-12% 2] 0.3%-4%	1] Ewing, R. and Cervero, R. (2010). Travel and the Built Environment - A Meta-Analysis. Journal of the American Planning Association,76(3),265-294. Cited in California Air Pollution Control Officers Association. (2010).Quantifying Greenhouse Gas Mitigation Measures. Retrieved from: http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf Frank, L., Greenwald, M., Kavage, S. and Devlin, A. (2011). An Assessment of Urban Form and Pedestrian and Transit Improvements as an Integrated GHG Reduction Strategy. WSDOT Research Report WA-RD 765.1. Washington State Department of Transportation. Retrieved from: http://www.wsdot.wa.gov/research/reports/fullreports/765.1.pdf Nasri, A. and Zhang, L. (2012). Impact of Metropolitan-Level Built Environment on Travel Behavior. Transportation Research Record: Journal of the Transportation Research Board, 2323(1), 75-79. Sadek, A. et al. (2011). Reducing VMT through Smart Land-Use Design. New York State Energy Research and Development Authority. Retrieved from: https://www.dot.ny.gov/divisions/engineering/technical-services/trans-r-and-d-repository/C-08-29%20Final%20Report_December%202011%20%282%29.pdf Spears, S.et al. (2014). Impacts of Land-Use Mix on Passenger Vehicle Use and Greenhouse Gas Emissions- Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: https://arb.ca.gov/cc/sb375/policies/policies.htm 2] Zhang, Wengia et al. "Short- and Long Term Effects of Land Use on Reducing Personal Vehicle Miles of Travel."
Neighborhood Site Enhancements	3.2.1	SDT-1 Provide Pedestrian Network Improvements	0%-2% reduction in VMT for creating a connected pedestrian network within the development and connecting to nearby destinations	Adequate	VMT reduction due to provision of complete pedestrian networks.	0.5%-5.7%	Handy, S. et al. (2014). Impacts of Pedestrian Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: https://arb.ca.gov/cc/sb375/policies/policies.htm
Neighborhood Site Enhancements	3.2.2	SDT-2 Provide Traffic Calming Measures	0.25%-1% VMT reduction due to traffic calming on streets within and around the development	Adequate	Reduction in VMT due to building out a low-stress bike network; reduction in VMT due to expansion of bike networks in urban areas.	0%-1.7%	1] California Air Resources Board. (2016). Greenhouse Gas Quantification Methodology for the California Transportation Commission Active Transportation Program Greenhouse Gas Reduction Fund Fiscal Year 2016-17. Retrieved from: https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/ctc_atp_finalqm_16-17.pdf. 2] Zahabi, S. et al. (2016). Exploring the link between the neighborhood typologies, bicycle infrastructure and commuting cycling over time and the potential impact on commuter GHG emissions. Transportation Research Part D: Transport and Environment. 47, 89-103.
Neighborhood Site Enhancements	3.4.9	TRT-9 Implement Car-Sharing Program	0.4 % - 0.7% VMT reduction due to lower vehicle ownership rates and general shift to non-driving modes	Adequate	Vehicle trip reduction due to car-sharing programs; reduction assumes 1%-5% penetration rate. Car sharing effect on VMT is still evolving due to TNC effects. UCD research showed less effect on car ownership due to car sharing participation and an uncertain effect on VMT.	0.3%-1.6%	Lovejoy, K. et al. (2013). Impacts of Carsharing on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: https://arb.ca.gov/cc/sb375/policies/policies.htm Clewlow, Regina R. and Mishra, Gouri Shankar, (2017). Disruptive Transportation: The Adoption, Utilization, and Impacts of Ride-Hailing in the United States. UC Davis, Institute of Transportation Studies. Research Report - UCD-ITS-RR-17-07.
Transit System	3.5.4	TST-4 Increase Transit Service Frequency/Speed	0.02%-2.5% VMT reduction due to reduced headways and increased speed and reliability	Adequate	Reduction in vehicle trips due to increased transit frequency/decreased headway.	0.3%-6.3%	Handy, S. et al. (2013). Impacts of Transit Service Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: https://arb.ca.gov/cc/sb375/policies/policies.htm

TDM STRATEGY EVALUATION - DRAFT V 1.0

Relevant Strategies for Implementation in SBCTA Jurisdictions Due to Land Use Context

CAPCOA Category	CAPCOA #	CAPCOA Strategy	CAPCOA Reduction	Strength of Substantial Evidence for CEQA Impact Analysis?	New Information Since CAPCOA Was Published in 2010		
					New information	Change in VMT reduction compared to CAPCOA(1)	Literature or Evidence Cited
Commute Trip Reduction	3.4.6	TRT-6 Encourage Telecommuting and Alternative Work Schedules	0.07%-5.5% commute VMT reduction due to reduced commute trips	Adequate - Effectiveness is building/tenant specific. Do not use with "TRT-1 Implement CTR Program - Voluntary" or "TRT-2 Implement CTR Program - Required Implementation/Monitoring."	VMT reduction due to adoption of telecommuting	0.2%-4.5%	Handy, S. et al. (2013). Policy Brief on the Impacts of Telecommuting Based on a Review of the Empirical Literature. California Air Resources Board. Retrieved from: https://www.arb.ca.gov/cc/sb375/policies/telecommuting/telecommuting_brief120313.pdf
Commute Trip Reduction	3.4.3	TRT-3 Provide Ride-Sharing Programs	1%-15% commute VMT reduction due to employer ride share coordination and facilities	Adequate - Effectiveness is building/tenant specific. Do not use with "TRT-1 Implement CTR Program - Voluntary" or "TRT-2 Implement CTR Program - Required Implementation/Monitoring."	Commute vehicle trips reduction due to employer ride-sharing programs	2.5%-8.3%	Victoria Transport Policy Institute. (2015). Ridesharing: Carpooling and Vanpooling. Online TDM Encyclopedia. Retrieved from: http://vtpi.org/tdm/tdm34.htm

NOTES:

(1) For specific VMT reduction ranges, refer to the cited literature.

VMT Report Submittal

- The final TIA will also include a separate Appendix for the VMT report and analysis.
- If screening was applicable for the Project; the screening process must be documented within a memorandum.

The recommended VMT Report format is as follows:

1. Executive Summary (Clearly state VMT findings)

2. Vehicle Miles Traveled (VMT) Analysis—Prepare To Be Extracted as a Standalone Document – Signature Sheet & Professional Seal Required
    a. Project VMT per person/employee for all analysis scenarios
    b. Project effect on VMT for all analysis scenarios
    c. Identification of VMT impacts
    d. Proposed VMT Mitigation Measures

3. Appendix
    a. Approved scope of work
    b. Traffic counts
    c. Intersection analysis worksheets
    d. VMT and TDM calculations
    e. VMT and TDM mitigation calculations

TRAFFIC IMPACT ANALYSIS

Preparation Guide

Exhibits

A. Scoping Agreement

- TIA
- VMT

B. Signalized Intersection Analysis Input Parameters

C. Traffic Impact Analysis Format

D. Background Information

E. Traffic Impact Analysis Submittal Form

Exhibit A

SCOPING AGREEMENT FOR TRAFFIC IMPACT ANALYSIS

This following form shall be used to acknowledge preliminary approval of the scope for the traffic impact analysis (TIA) of the following project. The TIA must follow the City of Rialto Traffic Impact Analysis – Report Guidelines and Requirements, adopted by the City Council on _____.

City of Rialto

Traffic Impact Analysis

Scoping Agreement

Case No. _____

Related Cases -

SP No. _____

EIR No. _____

GPA No. _____

ZC No. _____

Project Name: _____

Project Address: _____

Project Description: _____

	Consultant	Developer
Name:	_____	_____
Address:	_____	_____
Telephone:	_____	_____
Fax:	_____	_____

1. Trip Generation Source: _____

Existing GP Land Use _____ Proposed Land Use _____

Current Zoning: _____ Proposed Zoning: _____

Total Daily Project Trips: _____

	Current Trip Generation			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
AM Trips	_____	_____	_____	_____	_____	_____
PM Trips	_____	_____	_____	_____	_____	_____

Internal Trip Allowance Yes No (_____ % Trip Discount)

Pass-By Trip Allowance Yes No (_____ % Trip Discount)

For appropriate land uses, a pass-by trip discount may be allowed not to exceed 25%. Discount trips shall be indicated on a report figure for intersections and access locations.

2. Trip Geographic Distribution: N % S % E % W %

(Detailed exhibits of trip distribution must be attached with Trucks as a separate exhibit)

3. Background Growth Traffic

Project Completion Year: _____ Annual Background Growth Rate: _____%

Other Phase Years _____

Other area projects to be considered: _____

(Contact Planning for Lists. Correlate projects to exhibit map and also indicate which projects have been included in study area forecasts for existing + background growth + project + cumulative)

Model/Forecast methodology: _____

4. Study Intersections: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies received.)

1. _____ 6. _____
2. _____ 7. _____
3. _____ 8. _____
4. _____ 9. _____
5. _____ 10. _____

5. Study Roadway Segments: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies received.)

1. _____ 6. _____
2. _____ 7. _____
3. _____ 8. _____
4. _____ 9. _____
5. _____ 10. _____

6. Other Jurisdictional Impacts

Is this project within any other Agency's Sphere of Influence or within one-mile of another jurisdictional boundary?

_____YES
_____NO

If so, name of Jurisdiction: _____

7. Site Plan (please attach 11" x 17" legible copy)

8. Specific issues to be addressed in the Study (in addition to the standard analysis described in the Guideline) (to be filled out by the City of Rialto Public Works Department) (NOTE: If the traffic study states that "a traffic signal is warranted" (or "a traffic signal appears to be warranted," or similar statement) at an existing un-signalized intersection under existing conditions, 8-hour approach traffic volume information must be submitted in addition to the peak hourly turning movement counts for that intersection.)

_____
_____
_____
_____

9. Existing Conditions

Traffic count data must be new or within one year. Provide traffic count dates if using other than new counts.

Date of counts: _____

NOTE Fees are due and must be submitted with, or prior to submittal of this form. The City will not process the Scoping Agreement prior to the receipt of the processing fee.

Fees Paid: _____ Date _____

Recommended:

Scoping Agreement Submittal date _____

Scoping Agreement Resubmittal date _____

Applicant/Engineer Date

Land Use Concurrence:

Development Services Department Date

Approved by:

Public Works Department Date

NOTE:

The Applicant/Engineer acknowledges that the Scoping Agreement is intended to assist in the preparation of any required TIA. It is preliminary in nature and the City does not have sufficient data to determine the ultimate conditions that may be imposed for the project. It does not provide nor limit the requirements imposed on the Project but is intended only to provide initial input into the parameters for review of the traffic generated by the Project and the initial areas to be considered and studied. Subsequent changes to scope of required analysis to be included in the TIA may be required by the Transportation Commission, Planning Commission, and/or the City Council upon Public Works Director/City Engineer review and approval.

VMT Analysis Project Scoping Form

This scoping form shall be submitted to the City of Rialto to assist in identifying infrastructure improvements that may be required to support traffic from the proposed project.

Project Identification:

Case Number:	
Related Cases:	
SP No.	
EIR No.	
GPA No.	
CZ No.	
Project Name:	
Project Address:	
Project Opening Year:	
Project Description:	

	Consultant:	**Developer:**
Name:		
Address:		
Telephone:		
Fax/Email:		

Trip Generation Information:

Trip Generation Data Source: _____

Current General Plan Land Use: _____

Proposed General Plan Land Use: _____

Current Zoning: _____

Proposed Zoning: _____

	Existing Trip Generation			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
AM Trips						
PM Trips						

Trip Internalization: ☐ Yes ☐ No (_____% Trip Discount)

Pass-By Allowance: ☐ Yes ☐ No (_____% Trip Discount)

Potential Screening Checks

Is the project screened from VMT assessment? ☐ Yes ☐ No

VMT screening justification_____
_____
_____
_____
_____

VMT Scoping

For projects that are not screened, identify the following:

- Travel Demand Forecasting Model Used _____
- Attach SBCTA Screening VMT Assessment output or describe why it is not appropriate for use
- Attach proposed Model Land Use Inputs and Assumed Conversion Factors (attach)

Approved by:

Public Works Department Date

NOTE:

The Applicant/Engineer acknowledges that the Scoping Agreement is intended to assist in the preparation of any required TIA. It is preliminary in nature and the City does not have sufficient data to determine the ultimate conditions that may be imposed for the project. It does not provide nor limit the requirements imposed on the Project but is intended only to provide initial input into the parameters for review of the traffic generated by the Project and the initial areas to be considered and studied. Subsequent changes to scope of required analysis to be included in the TIA may be required by the Transportation Commission, Planning Commission, and/or the City Council upon Public Works Director/City Engineer review and approval

Exhibit B

SIGNALIZED INTERSECTION ANALYSIS INPUT PARAMETERS

PARAMETER	VALUE
Base Saturation Flow Rate	1900 pc/hr/ln
Heavy Vehicle Factor:	Determine % heavy vehicles in existing traffic stream based on count data or consultation with the City Public Works Department. Projects with truck intensive uses must convert project trips to passenger car equivalents. Truck Intensive uses include heavy industrial, warehousing or as determined by the Department of Public Works.
Grade	Include as appropriate
Exclusive left turn lane	peak hour volume > 100
Exclusive right turn lane	peak hour volume > 350
Dual left turn lanes	peak hour volume > 200
Protected left turn phasing	peak hour volume > 120 **
Minimum Green time	7 sec. each movement (10 sec. including change) in areas of light pedestrian activity. In areas of high pedestrian activity, the minimum green shall be calculated based on the methodology in the HCM.
Cycle length	50 seconds to 130 seconds
Lost Time	Per HCM Exhibit 10-17 (below)

Major street	Minor street	Number of phases	L(sec)
Protected	Protected	4	16
Protected	Permitted	3	12
Permitted	Permitted	3	12
Permitted	Permitted	2	8

*All values are taken from HCM 2016 Chapters 10 and 16. Any deviation from these parameters requires prior approval from the City of Rialto Public Works Department. Refer to HCM 2016 for any default values not specifically identified here

Intersection analyses should be conducted utilizing acceptable software based on HCM methodology. Closely spaced intersections are to be analyzed using analysis tools capable of accounting for turn lane storage, queue length, blockage, etc. such as Synchro. Other programs must be approved in advance of use.

Actual signal timing and peak hour factors should be collected in the field and utilized in existing and near term analyses. In cases where traffic is added from a significant number of cumulative projects, the consultant shall use their engineering judgment in the application of peak hour factors to maintain consistency with the existing conditions analyses. A peak hour factor of 1.0 shall be applied to build out traffic conditions.

Exhibit C

TRAFFIC IMPACT ANALYSIS FORMAT

The Traffic Impact Analysis Report shall generally include the following items, unless specifically waived by the Department of Public Works/City Engineer. Required **Exhibits** and **Tables** are indicated.

Executive Summary

I Introduction

A. Purpose of the TIA and Study Objectives
B. Site Plan, location and the Study Area **(Exhibit)**
C. Development project identification - City of Rialto Case Number, Planning Number and related numbers i.e. GPA/SP, EIR etc.
D. Development project description.
    1. Project size and description
    2. Existing land use and zoning
    3. Proposed land use and zoning
    4. Site plan of proposed project (reduced) **(Exhibit)**
    5. Proposed project opening year
    6. Any proposed project phasing
    7. Indicated if project is within another agency Sphere of Influence or within 1-mile of jurisdictional boundary

II Area Conditions

A. Identify Study Area and Intersections
B. Existing traffic controls and intersection geometrics **(Exhibit)** - include descriptions of existing roads (number of lanes, signals, etc.)
C. Existing traffic volumes - AM and PM peak hour turning movements and roadway links **(Exhibit).** Peak hour counts during mid-day or weekends may be required.
D. Existing delay and LOS at Study intersections/roadway links **(Table)**
E. Copy of General Plan Circulation Element in the project vicinity **(Exhibit)**
F. Description of Transit Services and routes (if any) within the Study Area

III Projected Future Traffic

A. Project Traffic and Project Phasing (each study year)

    1. Trip Generation **(Table)** – Passenger vehicle trips shall be estimated using the rates and methodologies outlined in the Trip Generation Manual, current edition, published by the Institute of Transportation Engineers (ITE). Other sources require prior approval by the Public Works Director/City Engineer. The trips generated by most residential uses should be based on the number of dwelling units. The trips generated by most commercial and industrial uses should be based on gross. Some unique types of uses may not have rates published by ITE or ITE rates have been determined from too few sites to be applicable. In these cases, the Applicant/Engineer may

propose and submit for consideration data collected at similar existing facilities and if acceptable to the Department may use the agreed upon data for forecasting trips. The City may require additional information from sites it selects to adequately address traffic trip projections.

2. Trip Distribution and assignment **(Exhibit)** – A separate Trip Distribution is required for each land use proposed. Also, separate trip distribution is required for truck traffic, if applicable. Exhibits showing the percentages and volumes of the project traffic (ADT, AM, and PM) logically distributed (in the direction of ultimate travel) on the roadway system must be provided.
3. Other factors affecting trip generation (pass-by trips, internal trips, or modal choice) require prior approval by the Public Works Director/City Engineer and must be based on accepted traffic engineering documentation. Pass-by factor shall not be assumed at more than 25% and internal capture shall not be assumed at more than 10% if allowed. If permitted, reduced or net trips generated by the project shall not be used to analyze project driveways and intersections immediately adjacent to the project site. Instead, a full trip generation shall be used. Discounted factors are typically only applicable to new fast-food, gas stations and shopping centers.

B. Existing Traffic Plus Background Growth Plus Project Traffic

1. Ambient growth rate
2. Delay and Level of Service for existing traffic conditions without project but with existing improvements **(Table)**.
3. Existing plus ambient plus Project ADT, AM, and PM peak hour volumes **(Exhibits)**
4. Existing plus ambient plus Project ADT, AM, and PM peak hour LOS **(Table)**

C. Cumulative (existing+ambient+cumulative) with and without Project Traffic

1. Identify location and description of other approved or proposed development projects **(Table and Exhibit)**
2. Background growth rate
3. Trip generation of other development projects **(Table)**
4. Trip distribution and assignment of other development projects **(Exhibits)**
5. Delay and Level of Service (LOS) with project, with existing and committed improvements **(Table)**
6. Cumulative with and without project ADT, AM, and PM peak hour volumes, delay and LOS **(Table)**

IV Mitigation Measures

The TIA must link the project and the traffic impacts to the City street system and how the Level of Service (LOS) will be maintained. It should describe how Significant Impacts will be brought to a level of insignificance. This nexus will include only improvements currently scheduled for construction prior to project completion. If improvements are funded for future implementation by some regional mechanism, this shall be shown. **(Table and Exhibits)**

Traffic Signal warrant analysis – indicate intersections found to meet traffic signal warrants at the study year and the share of project contribution (use peak hour for existing intersections and delay for new intersections).

The Project is subject to implementation of direct Project mitigation requirements (100% project responsibility). The Project may also be subject to contributions toward larger, longer range, improvement projects (on "Fair Share" basis). The City is concerned with Project Equity – where one project's mitigation is completing a "first phase" (i.e. an easier less expensive improvement or mitigation fee payment) of an improvement, while a significantly larger portion of the improvements remains for other future phases or other developments. The City is also concerned with immediate impacts of the Project. That is, does the Project create or exacerbate an existing problem to a level that requires immediate mitigation. The City shall determine if a Project's mitigation responsibility should be "direct mitigation", Fair Share contributions, mitigation of the immediate concern (with fee offsets, reimbursement agreements, or development agreements) or some combination thereof. It is noted that Fair Share improvements are developer based on the ultimate area-wide roadway improvements needed.

V. Findings and Recommendations

A. Improvements – Proposed on-site and off-site mitigation measures to achieve required LOS at impacted intersections and roadways. Identify if improvements are scheduled for construction, funded for future construction, or unfunded. Identify the funding mechanism in place, if none indicate "None".
B. Traffic Signal Warrant analysis – Indicate on-site intersections found to meet traffic signal warrants at study year (and at future phases if project is phased). For off-site intersections indicate if traffic signal warrants are met for study year with background, project and Cumulative growth and "fair share" based on traffic contribution. Use peak hour for existing intersections and daily for new intersections.
C. Circulation Recommendations
    1. On site **(Exhibit)**
    2. Study Area – Provide an **exhibit** showing roadway improvements and signal locations
    3. Phasing for both on and off site.
D. Safety and operational improvements – Complete Sight Distance analysis if warranted by the conditions.

E. Fair Share calculations – Project fair share mitigation costs calculations shall be completed by the Project Engineer in a detailed manner (include design, right of way acquisition, improvements, project administration etc. in a detailed cost estimate) and included in the appendices. It shall include intersections requiring mitigation improvements, roadway improvements (not including site specific per code), transitions, drainage and other required or recommended mitigations. Calculations shall show existing traffic, project traffic, cumulative traffic at build out and % of new traffic attributed to the Project.
F. Specific Plan signalization analysis (SP only)
G. General Plan Conformance (GPA and SP only) (GP Amendments in **Exhibit**)
H. Identify existing or proposed Regional funding mechanisms that may be applicable to any of the mitigations.

Exhibit D

BACKGROUND INFORMATION

On February 5, 2014, the City of Rialto approved Traffic Impact Analysis Report Guidelines and Requirements to regulate development, provide consistency with the City's adoption of the San Bernardino County Congestion Management Plan and comply with the California Environmental Quality Act (CEQA) to identify potentially significant project impacts on the roadway system.

This adopted criteria will be maintained. These policies are contained in general plans and therefore apply to discretionary approvals of new land use and transportation projects. Network intersections within City of Rialto shall perform according to City Policy 4-1.20 and Policy 4-1.21

The LOS guidelines consider SBCTA Congestion Management Plan (CMP) guidelines updated in 2016 and incorporate Rialto's guidelines of 2014.

CEQA changes

Subsequently, SB 743, signed by the Governor in 2013, changed the way transportation impacts are identified. Specifically, the legislation directed the Office of Planning and Research (OPR) to look at different metrics for identifying transportation as a CEQA impact. The Final OPR guidelines were released in December 2018 and identified vehicle miles of travel (VMT) as the preferred metric moving forward. The Natural Resources Agency completed the rule making process to modify the CEQA guidelines in December of 2018. The CEQA Guidelines identify that, by July of 2020 all lead agencies must use VMT as the new transportation metric for identifying impacts for land use project.

SBCTA Implementation Study

In anticipation of the change to VMT, SBCTA completed a SB 743 Implementation Study to assist their member organizations with answering important implementation questions about the methodology, thresholds, and mitigation approaches for VMT impact analysis.

The SBCTA study documents prepared by Fehr & Peers are on the SBCTA website and include:

- Thresholds Evaluation Memorandum – Potential thresholds SBCTA agencies could consider when establishing thresholds of significance for VMT assessment
- Methodologies and Calculation Memorandum – Types of tools that could be considered for impact assessment
- Tools Evaluation Memorandum – Types of tools that could be used to estimate VMT and the pros/cons associated with each tool
- Mitigation Memorandum – Types of mitigation that can be considered for VMT mitigation
- VMT Screening Tool – An on-line GIS tool that can be used for VMT screening.

The City of Rialto utilized the information produced through the Implementation Study to adopt methodology and significance thresholds for use in CEQA compliance. As noted in CEQA Guidelines Section 15064.7(b) below, lead agencies were encouraged to formally adopt their significance thresholds, and this is key part of the SB 743 implementation process.

> *(b) Each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects. Thresholds of significance to be adopted for general use as part of the lead agency's environmental review process must be adopted by ordinance, resolution, rule, or regulation, and developed through a public review process and be supported by substantial evidence. Lead agencies may also use thresholds on a case-by-case basis as provided in Section 15064(b)(2).*

Exhibit E

TRAFFIC IMPACT ANALYSIS SUBMITTAL FORM

DATE OF SUBMITTAL: _____

CASE NO. _____ APN NO. _____

Related Cases: _____

APPLICANT INFORMATION	CONSULTANT INFORMATION
_____	_____
_____	_____
_____	_____
_____	_____

PROJECT NAME: _____

LAND USE: _____

PROJECT LOCATION: _____

NEAREST MAJOR INTERSECTION: _____

THOMAS BROS PAGE/GRID: _____

FOR DEPARTMENT USE ONLY

STAFF ASSIGNED: _____

FEE RECIEPT NO. _____

PUBIC WORKS ASSIGNED STAFF: _____